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Attitude Toward Pe of Overweight and Obese Chinese Students: Inputs to An Intervention Program

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Abstract

The study aimed to assess and compare the attitude toward PE of obese and overweight Chinese college students. will ultimately benefit the obese and overweight students in PE through the development of instructional interventions as output of the paper.PE Teachers. Knowing the experiences and attitude toward PE of overweight and obese students can help teachers in designing interventions that will make their instructions more effective.PE Curriculum Developers. The result of the study can help PE curriculum developers improve the current PE set up to effectively address the concerns of the overweight and obese students. To best realize the aim of the study, a convergent-parallel mixed method design was used. This approach is also called the concurrent triangulation design. According to Edmonds & Kennedy (2017), this approach involves the simultaneous collection of collection of qualitative and quantitative data. Separate quantitative and qualitative analysis follows and then the results were ultimately merged. The conclusion is that the obesity problem among Chinese students is relatively serious and requires attention from schools and relevant departments. It is recommended that schools increase physical fitness measurement standards and add physical education courses, while also improving the management system of physical education courses.

Keywords

Chinesestudents; Overweight; Obese; Intervention Program.

1. INTRODUCTION

A healthy population is an important asset of a nation. It is considered by the World Economic Forum (2020) as a pillar of development. This is the reason why health organizations keep tab on the health of the population. One of the recognized global health concerns is overweight and obesity. Over 340 million children and adolescents aged 5-19 are overweight or obese (WHO, 2021). The prevalence of overweight among the 5-19 years old is 18% for girls and 19% for boys. In terms of obesity, 6% of girls and 8% of boys are obese. The number of overweight and obese children and adolescents have increased from 1% in 1975 to just over 18% in 2016.

One of the strategies adopted by many countries in addressing overweight and obesity is physical activity. A common intervention to promote health among adolescents is physical education. Developing healthy habits through PE among adolescents is important as behavior patterns established during adolescence can have long-term effects on health and career (Quartiroli & Maede, 2016; Calestine et al., 2017). Although physical education had been a part of global education, it seems that it has not succeeded in instilling health habits that would carry on into adulthood as overweight and obese adolescents and adults continue to rise.

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Bao et al. (2020) think that the more autonomous behavior of adolescents is a major reason why the effectiveness of PE in promoting physical fitness seem to decline with age. They think that having more freedom makes adolescents vulnerable to unhealthy habits and poor diet leading to overweight and obesity. Among obese and overweight adolescents, their failure to improve their physique can be blamed to some psychological burden. Their lack of physical activity can stem from the negative experiences that they had in physical education (Brown, 2014). Wei and Liu (2018) claim that psychological burden of doing PE can actually be experienced by normal students as well. That psychological burden may manifest in the attitude of students toward PE.

Studies about attitude toward PE have been conducted among young students. Not much however is conducted involving Chinese college students, especially among the overweight and obese. As mentioned by Wei and Liu (2018), the psychological aspect of students' PE performance is poorly studied. By determining the attitude and underlying thought process and feelings of overweight and obese college students toward PE, this study aimed to develop interventions to make a better PE class for overweight and obese students.

1.1. Background of the Study

Obesity is a serious public health problem in China. Based on the 2020 Report on Chinese Residents Chronic Diseases and Nutrition, 50% of adults and 20% of school-age children were overweight or obese. If no effective interventions were implemented, it is projected that by 2030, about 65.3% of adults and 31.8% of school-age children and adolescents could become overweight or obese (Peng et al., 2022). Obesity, being a risk factor to many chronic diseases, leads to enormous health and economic burden to people and the state. For China, it is projected that by 2030 medical costs attributed to overweight and obesity could reach 61 billion USD, accounting for 21.5% of national medical cost (Peng et al., 2022).

China has made a lot of efforts in obesity intervention but it has not been effectively controlled and could become worse in the future (Chinese Nutrition Society Obesity Prevention and Control Section, 2022). In addressing obesity, collaborations among government agencies were established. The Ministry of Education is one of the agencies in the collaborative effort to curb obesity and overweight. The contribution of the education sector can be seen in school PE where mandatory physical fitness tests are being done. Despite the efforts of schools in different levels to promote physical fitness through PE, the problem persists and is even worsening among college students. The decline in physical fitness is worse among male college students. According to Xia et al. (2021), male obesity based on BMI rose from 10.6% to 15.2%, and overweight increased from 17.1% to 21.8% from 2019 to 2022.

The problem of increasing obesity among Chines college students can be seen as ineffectiveness of PE instruction in promoting lifelong physical fitness. The increase in the number of obese and overweight college students suggests that students did not develop the habit of engaging in physical activities in their PE classes. It may also be true to obese and overweight college students. They failed to develop the discipline necessary to lose weight through PE. There are many reasons brought forth in trying to explain the issue. A review of the dearth Chinese literature in physical activities of children and adolescents showed the following factors affecting their physical fitness: gender, urbanization, parental physical activity, and self-efficacy (Lu et al., 2017). Wei and Liu (2018), however, think that the lack of knowledge on students' psychological construct of PE is a major reason for the perceived ineffectiveness of college PE.

One of the simple ways of looking at the psychological aspect of the PE woes in college is by assessing the students' attitude toward PE. While attitude toward PE has been studied in China, most of them involved elementary students and not adolescents (Wang, 2019). Moreover, Zeng et al. (2016) claimed that there is extremely limited number of studies on attitude toward

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PE in the collegiate level. The studies were also not specific to overweight and obese college students. Given this situation, the researcher believes that there is a lack of knowledge on the attitude toward PE of overweight and obese Chinese college students. This study hopes to fill that gap by assessing the attitude of overweight and obese students. It will also explore their PE experiences and hopefully add to the limited research on overweight and obese adolescent' experiences of physical activity in PE (Sundar et al., 2018). It is also hoped that new interventions in PE that can really contribute in addressing obesity and overweight in China may be designed based from the results of the proposed study.

1.2. Synthesis

The review of literature has shown that overweight and obesity can be determined through body mass index (BMI) computation and comparison to certain standards which varies with age, sex, and ethnicity. Determining who is obese and overweight among the respondents in the study is therefore doable. The review of literature had also shown that it is possible to measure attitude toward PE. There are several existing constructs of attitude toward PE which is matched by existing scales. Studies on this have yielded varying results which implies that attitude toward PE is influenced by certain characteristics of the respondents and the kind of instruction given them.

The literature on PE experiences is quite limited. The study reviewed which used the context of school PE involved obese children only. There were studies about obese adolescents and college students also but not necessarily within the PE setting. Despite these limitations, the reviewed qualitative studies showed that obese and overweight individuals, in whatever context have struggles.

The review of the literature has shown that both the quantitative and qualitative aspects of the proposed convergent mixed -method study has sound procedural basis. Moreover, the literature has shown that despite the several studies conducted on attitude toward PE and on the experiences of obese students, none really focused on obese college students and their PE experiences. This makes the proposed study potentially capable of generating new insights on the subject matter.

1.3. Research Design

The study aimed to assess and compare the attitude toward PE of obese and overweight Chinese college students. To come up with a more comprehensive understanding of their attitudes toward PE, their experiences in the course was explored. To best realize the aim of the study, a convergent-parallel mixed method design was used. This approach is also called the concurrent triangulation design. According to Edmonds & Kennedy (2017), this approach involves the simultaneous collection of collection of qualitative and quantitative data. Separate quantitative and qualitative analysis follows and then the results were ultimately merged.

1.4. Ethical Considerations

The researcher has no conflict of interest in the conduct of the study. There is no personal and financial interest in this research. Moreover, the researcher is not affiliated to any organization that may have a potential economic gain from this study.

The welfare of the respondents and participants were protected in all stages of the study. Privacy and confidentiality were guaranteed from invitation, to data gathering, reporting of the results of the study, and the disposal of the data. Permissions were sought from the respondents and participants in all circumstances that involved the information they shared. These aspects were detailed in the informed consent form that the respondents voluntary signed before they participated in data gathering. The details of the informed consent form were explained to them when they expressed their willingness to participate in the study.

ISSN: 2472-3703 DOI: 10.6911/WSRJ.202307_9(7).0018

Despite the legal age of the respondents and participants, the researcher recognized their vulnerability being obese and overweight. There was a psychological risk in their participation that may arise from stigma. To avoid this, privacy and confidentiality were strictly enforced in their recruitment and in all other stages of the study. Instead of inviting them directly to participate in the study, the invitation was announced in general through the school's social media accounts. Their expression of intent and their actual participation in the study were kept confidential.

The participation in the study had no potential benefits to the respondents and participants. There was no guarantee that the generated knowledge from the study would benefit them in anyway. Likewise, the participants did not gain any monetary and material benefit from the study. There was also no guaranteed benefit to the research locales that may arise from this study. Linking the findings of study to the research locales, may however impact them negatively. To prevent this, the names of the schools were no longer mentioned in reporting the results.

2. RESULTS, INTERPRETATION, AND DISCUSSIONS

Table 1. Attitude Toward PE

	Items	Mean	SD	Int
1	I like to attend PE classes.	3.56	1.07	HPA
5	I'm mostly bored in PE classes.	3.62	1.03	HPA
8	I find PE classes interesting.	3.80	0.98	HPA
12	I can't wait for PE class to end.	3.00	1.23	MPA
15	I don't like PE.	3.77	1.08	HPA
19	I would like to have more PE classes weekly.	2.87	1.26	MPA
22	I skip PE classes whenever I can	3.97	0.95	HPA
26	I can't wait to have a PE class.	3.48	1.01	MPA
29	Physical education is the most interesting school subject.	3.15	0.98	MPA
33	I am happy in PE classes.	3.72	0.89	HPA
37	PE classes always seem to last too short.	3.03	0.98	MPA
41	I don't like to miss a PE class.	3.52	0.96	HPA
	Overall	3.46	1.03	MPA

Table 1 presents the attitude toward PE of the overweight and obese group of respondents in terms of satisfaction. The respondents gave an overall mean of 3.46 with an SD of 1.03. The 3.46 mean indicates that the respondents have a moderate positive attitude toward PE derived from their average level of satisfaction with PE as a course. The general emotion of the respondents is moderately positive but the individual responses are fairly diverse. This can be seen in the SD of 1.03. This finding that the obese and overweight respondents in the study have a moderately positive attitude toward PE in terms of satisfaction conforms with the result of the study of Wang (2019). He found out that Chinese high school students, in general have a moderately positive attitude toward PE.

The highest mean of 3.97 was given by the respondents to item 22. Since the scoring was reversed for this negatively stated indicator, the mean of 3.97 implies now that the respondents did not skip their PE classes even when they could. This could mean they really like PE or they were simply concerned about their grades. It is really possible that the respondents agreed on several indicators for academic reasons. The mean (3.72) of item 33, however, would indicate that the somehow the respondents enjoy PE as a subject. On the other hand, the item with the lowest mean is item 19. Its mean of 2.87 indicates that the respondents are not very agreeable to additional PE class weekly. This reaction of the respondents could be due to their weight

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conditions knowing that college PE in China consists of main sports skills (Bao et al., 2020) and demonstration of sports techniques (Li et al., 2019).

Table 2. Attitude Toward PE in Terms of Teachers

	Items	Mean	SD	Int
4	PE teacher is friendly toward all of us.	4.26	0.80	HPA
11	I think that PE teacher designs classes well.	3.90	0.86	HPA
18	PE teacher is not interested in work with students.	3.96	0.90	HPA
25	PE teacher encourages me to exercise in my free time.	4.12	0.75	HPA
32	My PE teacher is too strict.	3.79	0.86	HPA
40	I like PE thanks to my teacher.	3.38	0.90	MPA
43	PE teacher encourages me in the class.	3.97	0.80	HPA
	Overall	3.91	0.84	HPA

Table 2 shows the attitude of the respondents toward PE in terms on teachers. As seen in the table, the respondents gave an overall mean of 3.91 with an SD of 0.84. This mean is interpreted as high positive attitude. The SD of 0.84 means that the individual assessments of the respondents are less diverse and close to the mean. This high positive attitude of the respondents toward PE, derived from their high perception toward their teacher is similar to the findings of Romero-Perez (2020). Her study revealed that Mexican obese children have positive attitude toward PE in all the dimensions of CAEF which included the PE teacher. Cruz et al. (2021) also showed the same result. Their Filipino student respondents have high positive attitude toward PE in terms of teacher.

The high perception of the respondents to their PE teachers is highlighted by item 4 which obtained the highest mean of 4.26. It says that "PE teachers are friendly toward all of us". Item 25 which got the second highest mean (4.12) also attest to the good interpersonal skills of PE teachers. It says that "PE teachers encourage me to exercise in my free time". Despite the high appreciation of the respondents to their PE teacher, they seem hesitant to attribute all their high positive attitude toward PE to their teacher. This can be seen in item 40 which says "I like PE thanks to my teacher". The respondents gave the lowest mean (3.38) to this item which implies a moderate positive attitude only.

2.1. Summary of Findings

The following are the findings of the study:

1. The obese and overweight respondents mostly belong to the 18-19 age group. There are more females than males. There are more obese

respondents than overweight.

2. The attitude of the respondents toward PE is highly positive in general. This is also true to its dimensions of comfort, activity, and teacher. The

dimension satisfaction elicited a moderately positive attitude.

3. There is significant difference in the attitude toward PE of the male and female respondents. There is no significant difference when age is used as basis. The obese and overweight assessments have no significant difference in the dimensions of comfort, activity, and teacher. There is however, a significant difference in the dimension of satisfaction.

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2.2. Recommendations

Based on the conclusions of the study, the following are being recommended:

1. The Chinese school officials should help students determine their weight conditions based on BMI. Awareness of their BMI classification is the first step of resolving overweight and obesity.

2. The positive attitude toward PE of obese and overweight students should be improved. While in general they already have a high positive attitude toward PE, there are still areas where improvements can be done significantly.

3. Overweight and obese female students have more barriers in PE. This should be addressed by teachers and school officials. The intervention plan being proposed may be used to address this issue.

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