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## Progress in Studying the Impact of Exercise on Obesity in Children and Adolescents

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### Abstract

At present, obesity in children and adolescents is popular, and the current situation of obese children and adolescents is not optimistic. This paper discusses the influence of obesity on children and adolescents, and sorts out the existing research results on the effect of exercise intervention on obese children and adolescents, clarifies the important role of exercise intervention to improve obese children, and believes that the future research on exercise intervention to improve obese children and adolescents should explore the effectiveness and safety of intervention. In this paper, through the CNKI, wan fang database database, select nearly three years 31 representative articles related to the influence of sports on obese adolescents, from the present situation of children and adolescents obesity, influencing factors, solutions, the future outlook four dimensions for a comprehensive comb, points out the shortcomings.

**Keywords:** *Sports; Children and Adolescents; Obesity*

### A. Introduction

In recent years, overweight and obesity have become a global public health problem with a significantly increasing incidence. Epidemiological studies suggest that obesity is an independent risk factor for cardiovascular disease. Research has found that every 5-unit increase in body mass index (BMI) increases the incidence and mortality of heart failure by 41% and 26%, respectively. The World Health Organization (WHO) officially included obese cardiomyopathy on the disease list in 1948. Long-term severe obesity can lead to pathological remodeling of cardiomyogenesis, cardiac structure, and dysfunction, eventually developing cardiovascular diseases such as hypertension, heart failure, diabetes, and atherosclerosis.

Therefore, finding effective ways to improve obese cardiomyopathy is one of the challenging clinical problems today. Exercise, as an effective means to reduce fat and weight, is also a crucial intervention to promote cardiovascular health. Existing studies suggest that appropriate exercise can improve the myocardial structure and function of obese individuals by inhibiting inflammation and oxidative stress levels, improving mitochondrial dysfunction and cardiac lipotoxicity, and inhibiting cell apoptosis and myocardial fibrosis. Additionally, it regulates renin-angiotensin system (RAS) activity and small RNA (microRNA, miRNA) expression, thereby improving obese cardiomyopathy.

This study reviews the improvement effects of exercise intervention on the heart structure and function of obese patients and further discusses the biological mechanisms through which exercise intervention can ameliorate obese cardiomyopathy. The goal is to provide new ideas

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and a theoretical basis for the therapeutic targeting of obese cardiomyopathy. Hence, this research aims to contribute to the development of more effective treatment strategies for managing obesity-induced cardiomyopathy, which is becoming an increasingly significant concern in global public health.

Currently, adolescent obesity is a global public health problem. According to a survey in the United States, 18 percent of American teenagers aged 12 to 19 are obese. Similarly, China's adolescent health and physique survey data indicate that the obesity rate among children and adolescents aged 17 to 18 years has reached 9 percent. The occurrence of adolescent obesity is related to multiple factors such as overnutrition, genetic predisposition, lack of physical activity, psychological stress, environmental influences, and other factors, which collectively contribute to this condition. In recent years, adolescent obesity has shown a sharp upward trend. Obese teenagers, due to excessive fat accumulation, may experience accelerated atherosclerosis, which is closely related to the early onset of hypertension, diabetes, heart disease, and other cardiovascular diseases. Therefore, it is necessary to intervene in adolescent obesity. Exercise prescription intervention and nutritional intervention are the most suitable methods for teenagers to lose weight. Personalized weight loss exercise prescriptions can speed up body energy metabolism, increase fat consumption, and low-energy nutritional interventions can reduce energy intake while ensuring the basic nutritional needs of teenagers, thus achieving the goal of weight loss.

## **B. Methods**

This study employs a descriptive research design aimed at analyzing the current state of obesity in children and adolescents and evaluating the effects of exercise interventions on this population. Utilizing a literature review method, the research will systematically analyze articles and studies published within the last three years. The focus will be on four key dimensions: the current situation of childhood and adolescent obesity, influencing factors, solutions, and future outlook. This approach allows for a comprehensive understanding of the trends, causes, and effective interventions related to obesity in young individuals, providing a solid foundation for evaluating the role of exercise in mitigating this global health issue.

The primary data collection technique for this study is a thorough literature review. The databases selected for this review are the China National Knowledge Infrastructure (CNKI) and the WanFang Database, both of which are renowned for their extensive and credible collections of academic articles. The inclusion criteria for the literature review will focus on articles published within the last three years that examine the influence of exercise on obese children and adolescents. A total of 31 representative articles will be selected based on their relevance, credibility, and the comprehensiveness of their coverage on the subject matter. This selection process ensures that the study encompasses a wide range of perspectives and findings, enhancing the robustness of the analysis.

Data analysis will be conducted using thematic analysis and comparative analysis techniques. Initially, thematic analysis will be employed to systematically code the selected articles, identifying key themes and patterns related to the influence of exercise interventions on childhood and adolescent obesity. These identified themes will then be categorized under the four main dimensions: the current situation of childhood and adolescent obesity, influencing factors, solutions, and future outlook. Following this, a comparative analysis will be conducted

to evaluate the effectiveness and safety of various exercise interventions. This comparative approach will involve analyzing the findings across different studies to identify best practices and common strategies that have proven effective in addressing obesity among children and adolescents. The combined use of these analysis techniques will provide a nuanced understanding of the role of exercise in improving health outcomes for obese youth.

The study methodology consists of a descriptive research design focused on a literature review of studies from the past three years. Data collection will be conducted through a systematic literature review from the CNKI and WanFang Database, with 31 representative articles selected based on strict inclusion criteria. Data analysis will involve thematic analysis to identify and categorize key themes and a comparative analysis to evaluate the effectiveness and safety of exercise interventions. This comprehensive methodology aims to provide a detailed examination of existing research on the impact of exercise interventions on obesity in children and adolescents, highlighting effective strategies and identifying areas for future research. By employing these methods, the study aspires to contribute valuable insights into the development of effective interventions to combat childhood and adolescent obesity.

## **Findings and Discussion**

### **1. Effect of obesity in children and adolescents**

Zhang & Chen (2017) mentioned in the Influence of Obesity on adolescent Body Image that obesity will have a negative impact on adolescents' self-body image, which is mainly reflected in three aspects: bad body cognition, emotional evaluation and behavioral image. To promote the development of good physical intention of obese adolescents, we need to arrange their meals reasonably, promote their physical exercise, strengthen their monitoring of physical indicators, and offer mental health courses. In the Effect of Obesity on Body Image of adolescents, Liu Yi (2015) pointed out the influence of obesity on the growth and development of adolescents and the methods of exercise intervention in obesity, aiming to reduce the obesity rate of adolescents and improve the physical level of adolescents. Obesity will affect the physical condition of teenagers, manifested as the body form, mental outlook.

Nowadays, the number of adolescent obesity is increasing, which has become a worldwide problem. Due to the improvement of people's living standards, the dietary structure has also been changed, and the large intake of high protein and high fat food leads to the increasing problem of adolescent obesity (Cui, 2013). The incidence of adolescent obesity shows an increase in both developed and developing countries. This seriously affects the health status of teenagers, which needs to be paid great attention to by the society (Hong, et al., 2012). Zhou Dan (2007) pointed out that adolescent obesity can cause a series of physiological function injuries, including elevated blood pressure, accelerated pulse, decreased lung function, precocious puberty, impaired digestive and immune system and behavioral psychological abnormalities. Therefore, it is imperative to prevent adolescent obesity early, we should be reasonable diet from childhood, strengthen physical exercise, and actively prevent the occurrence of obesity.

Through relevant experiments and data, Sun & Tao (2005) pointed out that the reasoning ability and level of mild obese adolescents cannot be considered lower than that of normal adolescents. But severe obesity may lead to lower intelligence levels in young children.

Jin Feng (2001) pointed out in the Analysis and Countermeasures of the Psychological Impact of Obesity on teenagers that obesity can not only affect the physical health of teenagers, but also directly or indirectly affect their mental health. Ji et al., (1994) talked about the main differences between overweight and obesity and normal weight adolescents in the maximum oxygen consumption, maximum oxygen pulse, maximum oxygen pulse, maximum oxygen pulse, lung capacity / weight and maximum tolerance time; however, the relative importance of each index varied in men and girls.

## **2. Effects of Exercise on Adolescent Obesity**

### ***Effect of Exercise on Body Morphology in Obese Adolescents***

Ren, Li & Gao (2021) found through the four-week aerobic exercise intervention study that the weight, BMI, body fat rate, waist circumference, waist-hip ratio, waist circumference and height ratio of the intervention participants decreased significantly, and he believed that aerobic exercise had a positive impact on the body shape of obese adolescents. Li Rui had the same view as the scholar. After the intervention, the weight, fat content and BMI decreased; the chest circumference, waist circumference, hip circumference, large arm circumference and thigh circumference all changed significantly. Although the best standard was not met, it can be seen that the exercise intervention had a significant effect on improving the body shape of obese adolescents.

Lu Zhaomei (2015) study found that in 44 obese adolescents with 6 weeks of closed diet control and exercise, the fat mass, body mass and body fat rate decreased significantly, and the changes in many indicators of overweight adolescents were significantly greater than those of middle and heavy obese adolescents, and the effect of weight loss was obvious. Tong Yongqing suggested that the experimental intervention time should be appropriately extended, suggested that the adolescent obesity should be obese psychology should be systematically studied. Tong Yongqing conducted exercise intervention and found that after intervention in obese adolescents, body weight, BMI, body fat ratio and waist-to-hip ratio all decreased in the intervention group.

### ***Study on the effect of exercise on physical fitness in obese adolescents***

Shuai (2020) believes that exercise can not only have an impact on the body form of obese teenagers, through exercise intervention can also effectively enhance the strength, speed, endurance, flexibility, response ability and other physical qualities, strengthen the exercise ability of obese teenagers, improve the enthusiasm of obese teenagers to participate in sports.

Song, et al., (2022) war research found that through 4 weeks of aerobic exercise combined with diet intervention, obese adolescents on the left side of the grip, step experiment, think aerobic exercise can not only significantly reduce obese adolescent body composition, body shape, also can improve the left side of the obese adolescents grip and step index physical quality index.

### ***Study on The Effect Of Exercise on Physical Function in Obese Adolescents***

Ren, Li & Gao (2021) research found that through the aerobic exercise and diet intervention, intervention body shape affected, the intervention of triglyceride (TG), low density lipoprotein (LDL-C) and insulin concentration of serum leptin concentration decreased significantly, serum adiponectin concentration, these indicators are closely related to fat metabolism ability, that aerobic exercise can improve aerobic exercise ability of obese teenagers.

Pan, Ma & Gu (2022) study found that through a school-based exercise intervention for obese adolescents, body fat was significantly reduced and fasting insulin levels were significantly improved in the intervention group compared with the control group. School-based exercise courses have significantly reduced body fat and improved cardiovascular health and fasting insulin levels in obese adolescents. The scholar suggested that small-class teaching and individualized physical education are the direction of school physical education curriculum reform, and that the public health sector should cooperate with schools to improve the health of adolescents and children.

### ***Study on The Impact of Exercise on Cognition in Obese Adolescents***

The study found that after a 4-week aerobic exercise intervention, obese adolescents showed more implicit attitudes towards exercise, but were more sedentary than exercise. Short-term exercise can play a positive role in the implicit attitude of exercise, but due to the short time, it can not reverse the attitude of obese teenagers prefer being more sedentary than exercise, which may be the breakthrough point of exercise to promote weight loss in the futur.

### **3. Factors Influencing Obesity in Children and Adolescents**

Currently, Mass used at home and abroad (body mass index, BMI) as an anthropometric measure to assess overweight and obesity, Screening standards mainly include 2000 international obesity working group established standards, 2000 the CDC age and gender specific growth chart, the world health organization in 2007 the school age children growth standards, 2009 li proposed children overweight obesity screening BMI threshold and 2018 our country the latest release of the " of the People's Republic of China health industry standard (WS / T586-2018) school-age children and adolescents overweight and obesity screening.

#### ***Unreasonable Diet Structure***

Several studies showed that childhood obesity was positively associated with sweet food, puffed food, western fast food, sugary drinks, fast eating and full per meal, and with vegetable food, intervention of diet volume and control of diet. Most students like to eat fast food, puffed food, fried food and food with high sugar content (ice cream, chocolate, milk tea, etc.). Excessive intake of these high sugar, high fat and high calorie food is the high risk factors of obesity. When the eating speed is too fast, because the food is not fully chewed, the signal can not be fed back to the satiety center in time, resulting in excessive food intake. Improper feeding behaviors such as excessive feeding persuasion, feeding inducement, and the use of high-calorie foods as rewards can all lead to excessive energy intake in children. Vegetable foods are rich in minerals, vitamins, cellulose and so on. Cellulose can increase the number of chewing, enhance satiety and reduce the intake of food, and accelerate the time of food through the gastrointestinal tract, thus reducing its absorption rate and helping to prevent the occurrence of obesity. Milk and soy contain a large amount of high-quality protein, and the increase of protein intake is an important factor in promoting the growth and development of children, including the "egg and milk project" implemented by the Ministry of Education in the early 21st century<sup>[19]</sup>.

#### ***Lack of Physical Exercise***

The rising prevalence of childhood obesity is also attributed to a static lifestyle or a lack of physical exercise. On the one hand, with the increasing popularity of network media technology and the rapid development of electronic technology, computers, mobile phones, TV and more enter people's lives, in children's daily life; on the other hand, students have heavy academic

**Song,**

burden, the single exam-oriented education concept makes students always sacrifice precious sports time for scores, and after school time is always filled with extracurricular tutoring and interest training classes. These behaviors all increased the children's sedentary time and became the main cause of the static lifestyle.

### ***Improvement of Social and Economic Level***

An analysis of data on the health effects of overweight and obesity in 195 countries showed that countries with higher socio-demographic index (SDI) also had a higher prevalence of obesity; boys and girls had the highest level of SDI (Zhang, et al.,2020).

### ***Genetic Factors***

Obesity as a chronic metabolic disease, associated with unhealthy lifestyle, and genetic (epigenetic changes, genetic mutations, etc.) factors are closely related, a survey of Shanghai children showed that obesity presents obvious family aggregation tendency, parents overweight, obesity is an important risk factor of children overweight, obesity, and the influence of maternal obesity is more significant.

### ***Endocrine Disorders***

Obesity and endocrine diseases (such as diabetes, hypercortisolism, thyroid hypothyroidism, insulinoma, etc.) can also promote each other and cause each other.

### ***Age, Gender, and Other Factors***

The results of a cross-sectional study in seven European countries showed that younger age, male sex were positively associated with the rate of childhood overweight and obesity. It can be seen that the rate of overweight and obesity in primary school students is higher than that of high school students, probably due to the influence of hormone changes in adolescence, and that teenagers pay more attention to their appearance and body changes in late adolescence. We found a significant correlation between leptin and sex hormone levels in obese children, and a feedback relationship between leptin and estradiol secretion was mutually reinforcing and mutual inhibition of testosterone secretion.

## **4. Obesity Interventions in Children and Adolescents**

The prevention of children's overweight and obesity requires the cooperation of families and schools. On the school, make and distribute publicity materials, teachers publicize the harm of obesity to children, and educate children to develop scientific and healthy eating habits. At the same time, nutrition knowledge lectures are held to explain the causes and harms of obesity and the measures and methods to improve childhood obesity to parents, so as to manage childhood obesity scientifically and reasonably. Family should pay attention to cultivate children's good living habits, establish a healthy life schedule for children, daily early to bed and early, supervise children are not allowed to stay up late watching TV, playing games or read comic books, etc., before bed to drink a cup of hot milk to help sleep, use children's biological clock, make children one night quickly into sleep. Urge children to get up early, parents play a leading role, take children to exercise or read in the morning, get rid of the bad habit of sleeping late, exercise pay attention to continuity, avoid one-time activities, even holidays can not be interrupted, gradually develop a scientific work and rest rules. Therefore, the most important and direct measure to solve the problem of obesity in children and adolescents is exercise. But before that, we should change our thinking, so we have the ideas of school teachers, leaders, as well as

the support of parents at home, and the enthusiasm of students themselves. Measures can be taken to prevent and control obesity in children and adolescents from both thought and action.

**a) Strengthen The Ideological Education of Schools, Families and Children Themselves**

Overweight and obesity has become the most serious nutritional problem in children and adolescents, and unhealthy eating habits such as sedentary and sedentary lifestyle are one of the important risk factors. Early intervention of physical activity level and dietary behavior in children and adolescents is the focus of the prevention and control of obesity in children and adolescents. Guide the students to establish a healthy lifestyle, develop good eating habits, carry out moderate physical activities, and reduce the static life and video time. Some studies show that the trinity of family, school and community, diet + exercise intervention mode has a positive effect on the prevention and control of obesity in children and adolescents, and improves the obesity status of children and adolescents.

***Actively Promote and Publicize The "Three Reductions" to Change the Bad Eating Behavior***

Countries should timely related policies, correctly guide the high calorie food development, high calorie food production and sales, sugar beverage sales, create a healthy diet environment for children and adolescents, actively promote propaganda "reduce salt, oil, sugar" core information, completes the knowledge of health education, called on the children to change bad eating habits, meals time quantitative, breakfast must eat and eat good, not picky, not eat more fruits and vegetables, eat less sweets, Fried food, high energy snacks and western fast food, drink less sugary drinks, reduce the number of eating out, reduce the intake of convenience food and takeaway food.

***Advocate The Practice of "Three Health" to Improve The Body Metabolism Level***

Actively build the social atmosphere of the national fitness, provide convenient and accessible sports venues and facilities, schools, parents should actively pay attention to children and teenagers physical activity, ensure children physical activity time, make "SanJian" health core knowledge propaganda, fully practice "sunshine hour", reduce tutoring time, reduce the use of electronic products time, increase the time of outdoor activities and the frequency of physical exercise, so as to improve the metabolic level of the body, consume excess energy, keep the weight in normal level.

***Actively Carry Out Health Education to Create a Good Social Atmosphere***

To improve the awareness of schools and parents about the harm of obesity in children and adolescents, help children develop good living habits, achieve a balanced diet and nutrition, ensure adequate physical activity and adequate sleep.

**b) Sports**

Aerobic exercise, resistance strength training and the joint exercise is the main way of overweight / obese children exercise intervention, aerobic exercise often use the way of running, rope skipping, dance, etc., mainly to improve cardiopulmonary function and insulin sensitivity, resistance strength training in the gym strength equipment, can improve muscle strength, improve muscle fiber type, etc. Due to the inconsistent mobilization of the body organs and function, the combined intervention of the two exercise modes will bring higher and more comprehensive benefits, such as significantly reducing BMI and body fat, improving metabolic level and cardiopulmonary endurance. At the same time, the order of exercise interventions

produces different health benefits. Joint training with aerobic training after moderate-intensity strength training may be more beneficial to the health management of overweight / obese children, but there are few studies on the related exercise order, and further experimental demonstration is still needed. In addition, high-intensity intermittent exercise is also an important means of reducing fat due to the high excessive oxygen consumption, which is more conducive to the development of heart and lung metabolism than other exercise methods.

### *Aerobic Exercise*

Pan, Ma, & Gu (2022) 6-week aerobic exercise to improve the physical health of obese adolescents concluded that the 6-week period of closed aerobic exercise can significantly improve the body composition of moderate and severe obese teenagers, improve the basic physiological function and sugar and fat metabolism, and effectively promote the physical quality. In obese people, body composition and lipid metabolism are sensitive indicators of aerobic exercise regulation. 3 weeks of aerobic exercise can significantly improve the body composition and lipid metabolism of moderate and severely obese teenagers.

Fan (2020) like Rao Jiahui, through 30 days of aerobic exercise training, can effectively reduce the body fat content and muscle content to improve the fat content and improve the speed and endurance quality of obese adolescents; it can effectively reduce the heart rate, blood pressure and lung capacity of subjects, and achieve better effect under diet control.

### *Resistance Strength Training*

Resistance training, that is, strength training in the general sense, refers to the improvement of local muscle strength by increasing the amount of local muscle resistance training, and then increasing the muscle strength and endurance, which is well accepted by the public. According to the relevant literature, resistance training can reduce the body fat rate to a certain extent and accelerate the transformation process of fat muscle. Even if the weight does not fluctuate much, the body fat rate can still be reduced after resistance training. This means that resistance training can help teenagers to lose weight scientifically and reasonably. However, it should be noted that the specific application should be adjusted in combination with the actual situation of teenagers. Some studies have shown that after 10 consecutive months of closed resistance training, the general physical condition and biochemical indicators are better than those of the control group and before the training, suggesting that the resistance training has a good effect on fat reduction in teenagers. Long-term resistance training in obese adolescents can effectively improve the observation index of blood lipid, reduce weight, and promote the recovery of teenagers, which is worthy of further application and promotion.

Liu (2015) Study on the Effect of Long-term Resistance Training on Weight and Fat Content in obese Teenagers, points out that resistance training, also called strength training, refers to the local muscle strength on the basis of overcoming resistance, which is one of the main ways to enhance local muscle strength and muscle endurance. In relevant studies, resistance training can effectively reduce the fat content of the body, and quickly transform the body fat into muscle tissue, that is, under the condition of little weight change, resistance training can significantly reduce the body fat content. With the continuous application of resistance training, its application effect is more and more prominent, and gradually replaced aerobic training, which helps obese teenagers to have healthy weight loss. In addition, when conducting resistance training, the training program must be reasonably designed according to the specific sports items, so as to

ensure the effectiveness and rationality of the sports, so as to achieve the expected training objectives.

### ***Cultivation of Interest in Sports***

Developing exercise interest and improving exercise persistence is important for the sustained healthy development of overweight / obese children, thus allowing increasing diversification in the form of exercise to attract children's attention. Team sports (such as basketball, football, tennis and other 2 or more sports) can improve the BMI and muscle strength of obese children, and the benefits may be better than single sports, and can increase the cooperation of children and promote mutual friendship. Therefore, it is suggested that schools and society can encourage overweight / obese children to conduct group activities, such as adding related physical education courses in schools and increasing group activities in the community. In addition, overweight / obese children are more committed to water sports (water polo, etc.) than land exercise. Although its health benefits are less favorable than land exercise, it still helps to stimulate children's interest in exercise. In addition to regular forms of exercise, the new form of gaming console is also very popular. Sports video games can solve the problem of preventing exercise due to field facilities, and help increase the physical activity level of overweight / obese children in home quarantine under the current COVID-19 epidemic.

Therefore, in increasing overweight / obese children exercise activity, Suggestions for combining aerobic exercise and resistance strength training, appropriate increase high intensity intermittent exercise, to improve the body function, at the same time because for children and adolescents, should fully consider their exercise motivation, according to interest choose exercise, so as to improve the effect of intervention.

### **c) Diet**

Tian (2018) pointed out that with the improvement of the economic level and the change of people's eating habits, the proportion of children and adolescents being overweight or obese in the current society is increasing year by year, which seriously affects their physical health status. As an important basic stage of physical and intellectual development, it is particularly important to form good eating habits and behaviors in children and adolescents. The study found that 1756 students were overweight (13.0%), and 949 students were obese (7.0%), which should be taken seriously. Among them, mode A and mode D are the main factors contributing to overweight and obesity, while mode C is a protective factor, which can provide a reference for clinical work.

Liu Huaiyu's et al, (2010) research on the relationship between Eating Behavior and Overweight and Obesity among Primary and Secondary School Students mentioned that children and adolescents are in the critical period of living habits and behavior formation, they should become the key group of obesity prevention, and parents should also be the key object of education. The survey found that primary and middle school students generally like to eat fast food; frequent contact with oil, salt, polysaccharide food advertising and fast food publicity. Most primary and middle school students buy snacks because of their taste, so many beautifully packaged but poorly nourished snacks come into being and spread to children and teenagers through advertising media. Therefore, the prevention and control of obesity in children and adolescents, the development of healthy living habits and a reasonable dietary structure need the participation and efforts of family, school, community and the whole society.

Therefore, diet (energy intake) is also one of the important factors that affect the fat content in the body, reduce the high calorie food intake of teenagers and children, with exercise is the direct measure to control obesity.

### 5. Future Trends of Obesity in Children and Adolescents

Xiao-peng li (2022) pointed out that China related scientific research should not only strengthen interdisciplinary, interdisciplinary, cross-regional, cross-border cooperation and communication, should also be focus on diversification and long-term evolution research mode, and from the multidisciplinary, multidimensional, multifaceted improve the youth sports health promotion research framework, and give full play to the school sports fitness value and maximum efficiency of sports intervention, to achieve "healthy China" and deepen "body fusion" national strategic contribution bear the historical value of youth sports and mission.

With the continuous improvement of China's economic level, people's life and material basis are more and more easy to be satisfied, coupled with the national policy orientation, people's attention to teenagers and children has increased significantly. So the problem of obesity comes along, but in recent years, parents, parents also realize the problem. It will also contribute to the promotion of the health of children. In the future, we should strengthen publicity and combine multidisciplinary to improve the comprehensive quality of the people. For example, the integration of physical education, physical health, health and medicine are in full swing.

### C. Conclusion

In conclusion, the researchers research more on exercise weight loss, children and college students, and therefore, the research has many reasons for obesity, mainly: 1 unreasonable diet structure; 2 lack of physical exercise; 3 improvement of social and economic level; 4 genetic factors; 5 endocrine diseases; 6 age, gender and other factors. At the same time, there are few studies on obvious corresponding prevention and treatment measures: 1 strengthen the ideological education of school, family, children themselves; 2 exercise; 3 diet. Similarly, in the future, we should pay more attention to solving the problem of obesity through multidisciplinary integration, and treat the obesity problem of children and adolescents with a dialectical and combined perspective. At present, it can be seen from the research literature that there are relatively many studies on all exercise weight loss, which is also one of the hot issues discussed in social research. In the future research, the research objects should be more extensive, and the research methods and means should be more advanced. There will still be a lot of problems for us to further study.

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