The Impact of Physical Activity in Cendana Early Childhood Education’s Obesity Prevention

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Abstract

Obesity is one of the issues the field of early childhood education is dealing with in this digital age. The intricate social dynamics and daily lives of children have changed as a result of technological advancements. Whilst it has numerous benefits, innovation in technology also has drawbacks. The truth on the ground is that children’s risk of obesity is significantly increased by their excessive usage of devices. Children’s limited mobility as a result of social mobility being supplanted by technological advancements is evidence of this. In order to combat childhood obesity, this study will examine the Cendana early childhood education physical activity program. A qualitative case study was the research methodology used in this study. Teachers and students from Kindergartens A and B in Cendana early childhood education served as the study’s research subjects. The findings of this study suggest that a variety of locomotor, non-locomotor, and manipulative physical activities are performed in the institution on a scheduled basis as a means of preventing obesity. A contributing aspect to the prevention of obesity in Cendana early childhood education is the availability of indoor and outdoor play facilities and infrastructure, as well as teacher innovation in presenting physical activity-based learning.

Key words: Obesity, Physical Activity, Early Childhood

Introduction

Following the epidemic, obesity has emerged as a global concern that has to be addressed. In Indonesia, the proportion of children aged 5 to 12 who are obese exceeds 10.8% of the country’s 18.8% total number of children in the obese category between 2015 and 2019. (Ministry of Health RI, n.d.). More than 2 million children are overweight or obese, according to additional data sources that support the aforementioned statistics (UNICEF, 2020). This high percentage demonstrates that Indonesia needs to address obesity as one of its challenges.

Empirically, Indonesia’s obesity epidemic has a very bad effect on kids’ lives. According to the findings of a literature review (Suru’darma et al., 2017), obesity can lead to adult obesity, metabolic disorders, and degenerative diseases. Obesity children are more likely to develop conditions such as orthopaedic abnormalities, obstructive sleep apnea, cardiovascular disease, type 2 diabetes mellitus (DM), hypertension, and insulin resistance. In addition, children who are obese experience psychosocial effects such as reduced socialization and physical activity (Suru’darma et al., 2017). Children that are obese typically migrate less and have worse social mobility. According to the literature analysis above, childhood obesity raises hazards for both physical and mental health.
In addition, obesity might result in children growing and developing less than optimally. The development of their potential and talents is hindered by the inactive activity patterns and low movement intensity of obese children. Obese children typically lack enthusiasm in participating in physical activities like playing like other kids do. According to the source (Indanah et al., 2021); (Mulyana, 2022); (Heri, 2021); and (Sarmini, 2019), obesity has a detrimental effect on a child's ability to develop.

More precisely, childhood obesity affects how children develop their physical and motor skills. Children who are fat have irregular muscle tone, easily get weary, become stiff in their motions, struggle to get up from a sitting position, and typically move slowly and laboriously (Zahari et al., 2022). According to further sources, childhood obesity increases the likelihood of physical issues such as lower back pain, sluggishness, difficulty walking, and the possibility of leg injuries from carrying heavy loads, which can interfere with a child's gross motor development (Masrul, 2018). The unbalanced size and shape of a child's body contributes to the movement restrictions experienced by fat people.

In addition to these factors, obesity in children may endanger their ability to think clearly. The prefrontal cortex, hippocampus, and other subcortical regions may have less grey matter as a result of childhood obesity. Also, the development of peripheral insulin resistance in obese people affects the decline of cognitive function, including memory and executive function, which leads to problems with the brain's blood vessels. Cognitive decline occurs as a result of restricted blood flow carrying nutrients to the brain (Uranga & Keller, 2019). According to the study's findings (Dwi Antono, 2017), children who are obese have inferior learning achievement than children who are not obese. This is consistent with the literature review.

Given the large number of instances, Indonesia's handling of obesity issues has not yet produced notable benefits. Regulation of the Ministry of Health Number 30 of 2013 Concerning Inclusion of Information on Content of Sugar, Salt, and Fat as well as Health Messages for Processed Foods and Ready to Serve Foods, which was revised in 2015, is unable to stop the rate of increase in obesity. This demonstrates the need for Indonesia to manage all potential causes of obesity by implementing legislation for preventative and promotion actions to prevent obesity (Bagiasta & Yuliantini Griadihi, 2019).

Children should be protected against obesity as early as feasible. There are many techniques to prevent obesity. According to the publication, exercise can be utilized as an option to avoid obesity (Manggabarani et al., 2020). According to several sources, physical activity and a healthy diet can help avoid obesity (Ida Niara, Sinta, 2022). In addition, controlling behaviours like changing nutrition, quitting smoking, and avoiding junk food, as well as medical therapy like medication and bariatric surgery, can help prevent obesity (Masrul, 2018). These procedures can be carried out in a preventive as well as a therapeutic manner.

Physical activity is the best way to prevent obesity in a setting where children are present. Teachers, parents, and caregivers can benefit from children's playtime activities to combat childhood obesity. By directing children's energy into physical activity to prevent probable malnutrition in them, obesity can be prevented. This is consistent with Herbert Spencer’s thesis, which claims that children can channel their extra energy through play. Also, the findings of a number of recent research demonstrate that encouraging physical activity through play can lower children's risk of obesity (Gifari et al., 2020; Suryadinata & Sukarno, 2019; Sholihah et al., 2021); and (Cicilia Karlina Lariwu, 2022).

The use of physical activity–based learning by children in Cendana early childhood education is similar to the factual reality discussed above. Gameplay and habits incorporate the use of learning based on physical exercise. With the aid of infrastructure facilities and instructional design principles that the teacher has developed, the teacher encourages students to move actively throughout their activities.

**Method**

A case study using a qualitative approach is the research method used in this study. In Cendana early childhood education, the adoption of this strategy attempts to transition from general to particular responses connected to physical exercise as obesity prevention. Study information on physical activity in early childhood education in Cendana was gathered organically and without any outside assistance.

Interview data-gathering approaches, observation data collection techniques, and documentation data collection strategies were all used in this study. The methodology utilized to obtain the data focused on the physical activity that the Kindergarten A and Kindergarten B students at Cendana Early Childhood Education engaged in. The Miles and Huberman data analysis method, which starts with data reduction, data presentation, and data verification, was employed in this study. The chart below provides a technical description of the data analysis method;

**Results and Discussion**

In Cendana early childhood education, there is a form of obesity prevention that is carried out through a variety of physical activities, according to the findings of field observations. There are three categories of physical exercise used to prevent obesity: locomotor, non–locomotor, and manipulating activities.
The results of a meta-analysis (Poedji et al., 2017), which found that increasing physical activity and adopting healthy eating habits can lower the incidence of obesity in school children, are consistent with the findings of the study on preventing obesity through various types of physical activity. This indicates that engaging in physical exercise is one of the preventative measures that can lower the likelihood and danger of childhood obesity. Exercise for 30 minutes per day is sufficient to maintain weight (Day 2, 2012); (Septiani & Raharjo, 2017); (Angraini et al., 2018). According to further sources, 150 minutes per week of physical activity can also be done to lower the risk of obesity (Mahendro Prasetyo Kusumo, 2020).

The varied sorts of movement activities performed by Kindergarten A and Kindergarten B students provide insight into the type of locomotor physical activity and obesity prevention practices used in Cendana early childhood education. Children at Cendana Early Childhood Education engage in movement activities while participating in outdoor games, sports games, traditional games, gymnastic activities, and learning activities.

This behaviour of travelling locations can be observed in outdoor sports by way of boardwalk and skateboarding, walking, climbing up and down the cobwebs, and crawling through tire circles. The effort of sprinting after the ball when playing soccer is an example of how moving may be noticed in sports events. Running to avoid the touch of the opponent, running to touch the opponent, and trying to run to touch the opponent throughout the traditional game of fortification are all examples of the activity of moving places in traditional games. Other examples include competing to run quickly while playing hide and seek. carrying clogs and moving swiftly.

The movement of switching places can be observed in gymnastic movements such as walking while facing forward, left, and right; stepping two steps to the right and two steps to the left followed by rotating the hands; and stepping two steps to the right and two steps to the left followed by a chest movement or waving the arms. The movement of moving objects can be observed in learning activities by imitating the butterfly’s metamorphosis, starting with the child imitating the cocoon movement by shaking their body to the right and left while stepping forward and backwards, the butterfly movement by stretching and flapping their hands while walking and running in circles, and the butterfly movement that children do by flapping their hands while walking in circles.

The way that obesity prevention is implemented in Cendana’s early childhood education may be seen in the non-locomotor physical activity that Kindergarten A and Kindergarten B students engage in. Children at Cendana’s early childhood education engage in sedentary activities during their gymnastics and educational activities. Children do a variety of movements during their gymnastics routines, from walking and hopping in place to crouching, turning, twisting their bodies to the right and left, clapping, stretching their arms, and looking away. They also combine these movements with head movements like nodding.

The child also makes non-locomotor movements that are combinations in nature, such as stretching the arms, which is then followed by swinging the body to the right and left without moving, swinging the body up and down without moving, and raising the hands in the manner of people who are strong and healthy, raising their hands while swinging their bodies to the right and left without moving, and applauding while swinging their bodies to the right and left without moving places, movements of swinging their bodies to the right and left with the transition of one leg, the position of the child’s hand holding the waist, and the child’s head tilted to the right and left, among other movements without moving during the exercise. movements of walking in place while turning to the right, left, and front. Children replicating the movement of a caterpillar by shaking their bodies to the right and left while standing straight is an example of how movement in learning activities does not move places.

The several ways that fundamental movements are performed using objects during manipulative physical activity, which is a component of Cendana early childhood education, can be considered as a method of obesity prevention. Children at Cendana Early Childhood Education engage in basic movement during indoor games, sports games, traditional games, and learning activities. The fundamental movements of using objects can be observed in indoor games from children’s activities such as building houses out of blocks, assembling legos one at a time to make realistic-looking weapons, robots, and animals, to school bags, disassembling and reassembling puzzle pieces, and so on. The entire media can be seen, including playing games like throwing and catching the ball by catching the ball from the play partner’s throw and playing with play dough by shaping this elastic object to resemble objects from the kitchen like knives and a wok and animals like crocodiles and chickens.

Children dribbling, feeding the ball, receiving ball bait, and kicking towards the goal when playing ball are examples of basic motions used in sports games. In addition to these sports, fundamental object movements may be observed in the actions of dribbling a basketball, bouncing the ball while baiting it, catching or receiving a pass from a basketball during a basketball game. Children playing bekel by throwing the ball up and then picking up the seeds while waiting for the bekel ball to bounce once on the floor and catch it again are an example of the fundamental movement employing objects that are observed in traditional games.

In the teaching and learning activities, basic movement using an object can be seen from the activities of children engaging in activities such as letter basketball, where a ball is thrown at a hoop bearing the letter symbol that corresponds to what the teacher said, and butterfly bowling, where a baseball is thrown at a modified Aqua bottle. Other activities include kicking coloured balls into identically coloured baskets.

According to research on several types of locomotor, non–locomotor, and manipulative physical exercise used to avoid obesity in Cendana early childhood education, these different activities can be employed to keep kids’ body
mass indices within a healthy range. The study's findings (Bayu et al., 2021) showed that a person's body mass index can be controlled by engaging in moderate to vigorous physical activity. Increasing physical activity will help reduce a person's body mass index, which will help prevent obesity (Sholihah et al., 2021). According to studies (Oroh & Wungouw, Herlina I. S. Engka, 2021), aerobic physical exercise has an impact on obesity by decreasing body weight, body mass, body mass index, hip and thigh size, fat percentage, fat mass, lean mass, body fat distribution, and increasing muscle strength.

Furthermore, it demonstrates that there is a method of preventing obesity through physical activity, according to the field's findings. Early childhood education in Cendana regularly incorporates physical activity to prevent obesity. This is evident from the regular workout sessions that are held on Wednesdays once a month. In addition, the practice of engaging in physical activity–based learning contributes to the prevention of obesity. This is seen in how learning is routinely implemented, where physical activity–focused activities are carried out every 30 minutes during introductory activities and every 60 minutes during core learning activities.

The findings above are consistent with studies (Bayu et al., 2021) which showed that maintaining a pattern of applying physical exercise of at least 30 minutes per day at a moderate to high intensity can help people maintain their optimal body mass index. Frequent exercise can help people reduce their chances of becoming obese (Damayanti, 2021). Children who are inactive have a higher body mass index than average and are more likely to have nutritional issues (Tomasoa & Dese, 2021). This suggests that kids who have a normal body mass index and are not more likely to have dietary issues are more active.

According to this study, it was also shown that there are both motivating and discouraging aspects to Cendana early childhood education to promote physical exercise as a means of preventing obesity. The availability of outdoor play places in the shape of spider webs, tire circles, catwalks, jump ropes, sizable grounds for hide-and-seek, bastion, as well as basic soccer and basketball courts, are supporting factors for the avoidance of obesity in Cendana's early childhood education. Also, the inclusion of physical exercise for the prevention of obesity in Cendana early childhood education is supported by the availability of indoor facilities such as play areas for bekel balls, blocks, lego, balls, puzzles, and play dough.

The inventiveness of teachers in adapting games as a way for kids to play and learn is another feature that supports the idea of avoiding obesity through physical activity. The findings of the observations demonstrate that Cendana's early childhood education is implemented with a focus on children's play. Instructors apply learning by incorporating subject matter through physical activity–based games, such as playing butterfly bowling, letter basketball, and colour ball kicking.

Lack of exercise is another factor contributing to childhood obesity, along with eating habits and behaviour. Children choose not to play because there aren't enough places to play and there aren't enough places to engage in physical activity (Poedji et al., 2017). Infrastructure and play areas must be provided for kids in order to encourage physical exercise and prevent fat storage.

According to the findings of a literature review (Nuryati, 2019), teachers must use creativity when implementing an active play–learning process if they want to develop students who are healthy, upbeat, creative, and imaginative. To pique children's interest in engaging in motion–based learning activities, teachers must be creative in how they present active children's learning processes. The foundation of preventing childhood obesity is to motivate kids to engage in movement–based activities.

The objective of Cendana Early Childhood Education is to organize active children's play and learning activities, and many forms of physical activity and study habits are consistent with this mission. This demonstrates how structuring these learning activities is in line with the objective of the Cendana early childhood education institution, which supports the prevention of obesity through a variety of physical activities.

Yet, the reality on the ground also demonstrates that there are barriers to the physical activity–based obesity prevention strategies used in Cendana early childhood education. According to the outcomes of field research, some kids do not participate in class activities that promote learning. This is evident from research showing kids drinking milk from bottles while still in the middle of a lesson. This disorder is a reflection of the way people live today when they lead sedentary lives with little exercise, making them more susceptible to obesity and other risk factors (Fanani, Akhmad., 2021).

Conclusion

According to the type of physical activity, Cendana's early childhood education promotes locomotor, non–locomotor, and manipulative movements through play activities that take place indoors and outdoors, gymnastics, and physical game–based learning activities. Gymnastic activities are periodic programs that are carried out once a month, whereas indoor and outdoor play activities, physical game–based learning activities, and routine daily learning programs are carried out. The adoption of this program is a way for the school to carry out its mission, which entails planning engaging play and learning activities for kids. More research on the benefits of physical activity in early childhood education for preventing obesity. The availability of both indoor and outdoor facilities, as well as the ingenuity of
teachers in incorporating physical activity–based learning activities, are other supportive factors that Cendana also mentions.

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