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Inadequate Activity: Assessment and Intervention

Introduction

At Risk Population/Health Proplems

School age children (ages 6-11) used to have worries of homework, tests, and picking out a best friend. Currently, they are at high risk for obesity, type II diabetes, severe food allergies, poor self-esteem, bone and joint problems, and high cholesterol/blood pressure (Oakland county health profile, 2002). All of these health problems have a direct correlation with physical activity and obesity (Oakland et al., 2002).

Significant Health Problems

The surgeon general has recognized childhood obesity to be an epidemic. An epidemic is a sudden increase of a condition or illness within a population (Stanhope & Lancaster, 2000). Contributing factors for obesity include genetics, lifestyle, diet, and medical conditions (Oakland et al., 2002). Risks determined by race are more difficult to determine. African-Americans, Hispanic, and American Indian's have a slightly higher prevalence of obesity (Institute of Medicine, 2004). It has been determined that having a low socio-economical status and living in the south is directly correlated with childhood obesity (Institute et al., 2004). Obesity can affect any child, no matter what age, gender, or ethnicity. Many studies have concluded that health problems caused form obesity could be prevented and/or controlled through physical activity.

Review of Literature

A study from the University of Minnesota found that time spent performing physical activity significantly decreased from early adolescents to late adolescents (University of Minnesota, 2007). Decreasing physical activity becomes a habit, and a person will develop a sedentary lifestyle. This lifestyle leads to increase risk for obesity and other related illnesses (University et al., 2007). In today's world it is often harder to be active then it is to be not active.

The priority of convenience and time saving habits leads to less leisure time, and less activity. People depend on cars more for transportation to decrease effort and save time, work leads to a decrease time to participate in healthy activities.

A study published by The Journal of Adolescent Health verifies the high prevalence of minimal activity in adolescent males and females. Sixty percent of females, and forty-three percent of males did not meet the national guidelines for activity. Compliance was defined as being physically active for 60 minutes five times a week. This study also concluded that race or region of residency did not have an impact of amount of activity. Girls were more likely than boys to decrease activity as age increased (Butcher, Sallis, Mayer, Woodruff, 2008). This article supports efforts to increase the amount of physical activity beginning at or before adolescents. This will prevent the onset of a sedentary lifestyle as well as the physical and emotional complications form inactivity. (Butcher et al., 2008).

Drextel University studied the contributing factors of childhood obesity by observing the physical and social environment changes. The study recognized the physical environment decreasing opportunity for activity, and the social environment promoting food high in fat content and calories. The study concluded the need for a shift of assuming individual responsibility for obesity, and recognition of the environment as the primary determinant of obesity (Budd, Haymann, 2008). While there may need to be a larger focus on the contributing factors to limited activity among the population, an individual must do what s/he is in control of. Drextel recommended the use of nurses to promote and support individual change while setting an example for the community (Budd et al., 2008). Until America can accept responsibility and admit its faults, individuals must do what is in their power to decrease their risk of the complications of inadequate activity.

Concepts to Consider

Distribution Pattern with Person, Place, Time

Using descriptive epidemiology the problem can be summarized using person place and time. While all persons are at risk for health complications related to inadequate activity, the focus is on adolescents and pre-adolescents. Studies show that there is a significant increase in illnesses and diseases which could be prevented or managed using physical activity. Targeting the age-group where the activity ceases will prevent the onset of a sedentary lifestyle while prolonging good health habits. Inadequate activity affects females more so than males, perhaps this is related to the stigma of participating in sports and being athletic for males. Inadequate activity affects all races and all income levels. Studies show all places are affected by inadequate activity. While there are indications that the south may be effected more than the north, all geographical regions have an increase in childhood obesity, therefore, no region should be overlooked while educating about the need for activity. There is less physical activity during winter months than during warmer climate (Yasunaga, Togo, Watanabe, Park, Park, Shephard, & Aoyagi, 2008). Suggestions of activities that can be performed during winter months should be made, as well as summer months.

Natural History

Becoming less active is similar to many disease processes: there is an onset of symptoms, and if not treated promptly, it worsens and leads to many other health problems. Acquiring a sedentary lifestyle does not have one path of transmission like other health issues. Typically, a young child will be very active. Once s/he begins school the time for ‘play’ is limited to gym, recesses, and after homework is completed. In high school, gym and recess are eliminated, but sports are available. The focus becomes more academic and work related, and eating becomes

rushed and usually less healthy. A significant amount of teens report inadequate activity levels. With college, it is harder to become involved in sports, and there is little encouragement to become active. There seems to be a stigma that sports are for the younger population, which may discourage adults from participating in recreational activities. This, along with self-consciousness and decrease accesses to activities, eliminates many adults from participating in an active program. The problem resolves with the increase in opportunity to perform activities, and a increase in self-responsibility to take action. The aggregate population studied is the school age population. At this age, activity usually begins to decrease will continue to decrease throughout their lifespan. Using this population, the inadequate activity will be prevented, rather than treated. In order to prevent the decrease in activity, enabling factors must be assessed.

Determinants and Influences

Decreased activity is determined mainly by lifestyle and social surroundings. While it is an individual choice to participate in activities, access to the opportunity is a strong determinant of commitment to physical activity. As age increases and the opportunity for activity decreases, many people shift their focus of activity and playtime to more sedentary behaviors (Butcher et al., 2008). Additionally, surrounding environment has a direct correlation on activity status of the population. One study concluded that winter months had a significant decrease in activity level than other seasons (Yasunaga et al., 2008). Similarly, a parent's goals and priorities are often transferred to their children. If parents do not recognize physical activity as an important part of everyday life, their children may be less likely to engage in regular activity. Making physical activity a priority for families will have a positive impact on the family as a whole (Villaire, 2008). A decrease in physical activity will decrease self-esteem and motivation, which in turn

will decrease the likelihood of physical activity. The cycle continues and poor habits are developed, and a sedentary lifestyle begins.

Web of Causation

The web of causation can be used to describe the multiple factors that influence the sedentary lifestyle, and the consequences that occur with failure to attain adequate activity (See appendix). Attaining adequate activity is determined by many factors, additionally, many consequences of inadequate activity present additional barriers. This begins a cycle which is difficult to overcome.

Health People 2010

Healthy People 2010 recognize obesity as a problem that needs to be addressed. Objective number 19-3 is to 'reduce the proportion of children and adolescents who are overweight or obese'. Objective 7-11 supports prevention by having a goal to increase culturally appropriate health promotion and disease prevention programs in health departments (United States department of health and human services, 2001). However, the statements of the need for change are only the beginning to a revelation. The trends of America are showing that even with the knowledge of the problems that occur with a sedentary lifestyle, change is not guaranteed.

Magnitude and Comparisons

In 2004, nineteen percent of Americans ages 6-11 were overweight (Morbidity and mortality weekly report, 2007). This is an increase from eleven percent in 1994, and is continuing to rise (Morbidity et al., 2007). While there are no conclusive statistics for the city of Walled Lake, or Oakland County, obesity has been recognized as an epidemic the county is working to prevent and treat cases of obesity. Of those surveyed, over 21% had a body mass index greater than 30, and 45% reported that they were trying to lose weight (Oakland et al.,

2002). The amount of physical activity can contribute to a person's body mass index. In 1996, 26.9% in the United States report getting no leisure time or physical activity in the past month, compared with the 22.9% of Michigan. There were no statistics for Oakland County. In 2002, 33.8% of Oakland County reported getting no leisure time in the past month. (Oakland et al., 2002). There are no comparisons to Michigan or the United States for the year 2002, the significance of the data suggests the need to address this issue.

Resources Available

Oakland County Health Department has made resources available for their population. The website includes information on the topic, preventions, and treatments. There is a list of activities to suggest to children, activities to do with children, and activities that can be done in the cold weather. Additionally the 'Count Your Steps' program will restart in the community. People who participate will wear pedometers and be rewarded for taking the most steps in one month. In 2005, 4.4 billion steps were taken by third and fourth graders (Patterson, 2006). With the success of community involvement, the decision was made to continue this program to support the goals of increased health in childhood.

Intervention Objectives

Intervention Description and Rational

An intervention was developed to be used as a prevention tool for diseases that are caused from inadequate activity. Because of the age group of the intervention group, the focus was to increase activity, not to prevent obesity, being overweight, or diabetes. Exercise was always referred to as 'activity' to decrease association with sounding mandatory and helping to imply opportunity. The children were encouraged to be active for fun and to feel good. To demonstrate how fun activity can be, a competition was organized. An assessment determined

the knowledge of the importance of activity, the importance of a warm up, and cool down, and how to tell if a person is playing to hard/not hard enough. Finally, an explanation was delivered about the competition. Since there are four 5th grade classes, each competed against each other. For every 15 minutes of activity (plus the warm up and cool down) the children recorded a tally on their own daily log. At the beginning of each school day, they tally's were added up. At the end of 6 days (from Friday to Thursday), the class that was the most active received a prize. The prize rewarded were free activities around the community. The prizes were donated by family owned bowling alley's and mini-golf facilities that were willing to support the good cause. Additionally, this prize helped the business, promoted their facility, and helped the community from an economical standpoint. This intervention was appropriate for this age group; it motivated individuals to become active, and allowed for self-achievement, which also increased self-esteem. It did not mandate anything to be done, but rather encouraged proper behavior. Additionally, it allowed children to work at their pace and engage in activities they enjoy.

Measurable Objectives

Our short term goals would be to see adequate activity levels among these 5th grade classes. With thirty students in the class, exercising for 60 minutes a day for six days, we would expect to see at least 720 tally marks by the end of the competition. With this achievement, our goals for adequate activity will be attained. Additionally, during the knowledge assessment, children should be able to answer all questions regarding activity at the end of the discussion.

Long terms goals include seeing an overall increase of physical activity, better attention in school, and an increase in mood. While these will not be able to be assessed in this study, compliance with the activity recommendations would result in all long term goals being met. If we were to measure these long-term objectives, we would assess the grades overtime and expect

to see an increase. Additionally, there would be less need to report people to the office, and less need to remind children to be quite during class time.

Plan for Implementation and Evaluation

Plan and Timeline

The amount of activity was measured based on tally marks. Each tally mark represents fifteen minutes of activity. On Thursday, the amount of activity of all four classes were evaluated and analyzed. There were expectations of many tally marks, which indicated a lot of activity. With the recommendations of sixty minutes per day of activity, tally marks will determine if these objectives were met. With thirty students in the class, exercising for 60 minutes a day for six days, we would expect to see at least 720 tallies. With this achievement, our goals for adequate activity will be attained. Although the activity will likely decrease after the competition is done, there will be ongoing benefits from the competitions. After a week of activity, the children will notice some of the benefits. These include sleeping better at night, able to pay attention in school, and feeling better (Patterson, 2006). There was an expectation for an increase in general mood during the post-assessment with the children. The children were encouraged to perform activities with friends, which will start trends for the children, allow them to make it a regular activity, and provide support and encouragement for their activities.

Levels of Prevention

This implementation is a primary intervention because it is working on prevention and education of health problems such as obesity, diabetes, and poor emotional health (Stanhope et al., 2000). For those children who are already faced with the struggles of these health problems, it is a tertiary intervention because it focused on delaying the progression of the disease (Stanhope et al., 2008). To implement this program, there is little to no monetary cost. The

program will take 6 days to complete. Children are able to put as much or as little time into the program, depending on their motivation and time capabilities.

Resources and Cost

No money is required for this program. Approvals were needed by the organizations tat donated prizes. Without their approval, the main motivation (the prize) would not exist. At this age, having a materialistic prize to work for is beneficial, therefore the approval was a vital part of the program. The personnel involved are the teachers. The teacher's cooperation to keep tallies on the board allowed for record keeping for the class during the week. The original plan was not accepted due to policies from the health department. To support the goal of making things as convenient as possible for students a checklist was designed. On the days activities were performed, a checkmark would be placed next to the listed activity. Since this checklist list did not have the heath department logo on it, it could not be handed out. This presented a problem because not only would it make our project less convenient for students, but it also meant there were not any handouts for the class. As a substitute, hand outs were printed and used as an example for children to see. Examples of activities and guidelines for the activities were organized and placed on the chalkboard. Information presented included warming up, beginning the activity, and cooling down. However, by allowing the children do document their own activities, they will gain more independence. Additionally, giving a list of the possibilities would have made them feel limited on the activities they could do if many of their everyday activities were not listed.

Evaluation

Method of Evaluation

During the presentation a verbal evaluation was conducted. Students were asked the importance of activity, and the benefits of warming up/cooling down. The students were engaged in all aspects of the presentation and were very knowledgeable about the subject. An open discussion occurred about the importance of activity, and the key points were reiterated by the leaders of the study. After the explanations, children were assessed by asking important points of activity. All questions were answered correctly.

Meeting Objectives

Many of the objectives were met: students were able to list activities, the time that should be spent on the activity, safety precautions during activity, and warning signs of when to slow down. By the end they were motivated to engage in the competition and daily activity.

During the follow up visit, the winning team was awarded their prize. The short term goal of achieving 720 tallies was not attained. Although the willing team did not reach the expected goal, there are many factors which could have contributed to that. The students were instructed not to tally points for gym class or recess. This was to motivate activity outside of the time provided for specific activity. Adults are less likely to engage in regular physical activity when it is removed from their mandatory schedule. By not allowing children to count time where physical activity is required, it will encourage self-discipline and responsibility. Allowing the school activities to be tallied would make this goal more achievable.

Strengths/Weakness

This intervention had many positive contributions to its effectiveness; it provided motivation for activity, while explaining the benefits of activity. Additionally, it did not force students to do anything, but gave them the choice and inspiration. The information being

delivered by nursing students also gave the information more accreditation because of the direct connection with health care.

The weakness of this activity is the possibility that the activity level will return to its baseline after the competition is over, making this a temporary solution. However, it is likely after the week the students will feel the benefits of activity, and enjoy engaging in activities with their friends, which will motivate them to continue with activity. Additionally, the education presented about activity is not temporary; therefore they are able to make an informed decision about activity. If they chose not to have regular activity, they will know the risks that are involved with their decision.

Next Time

If this intervention were to be redone, there would be significant benefits to having a handout that could be distributed to each individual student. Having a personal reference as a reminder would increase the likelihood of engaging in activities. However, since this was not possible, a fact sheet was given to each individual class as a reference. Having more attainable short-term goals or allowing for tallies to be added from school would be beneficial as well. Additionally, providing more time for the intervention would allow for a thorough pre-assessment, post-assessment, and research to be done on factors impeding activity in our aggregate population.

While studying this aggregate, the importance of early intervention became very apparent. It is important to assess factors contributing to the specific population, rather than the population as a whole. Providing this individualized care for the aggregate population will allow for attainable results. The study performed, along with the implementation of an intervention, demonstrated the benefits of an individualized plan for the population.

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