



# Factors contributing to overweight among children at the age of 3 to 6 years old

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### **Summary**

The aim of our study is to discover the factors of overweight in children at the age of 3 to 6. We want to find out how parents control their children's health. The research questions we want to focus on are: What are the factors contributing to overweight in children?

The theoretical study we want to use is the caring models of Kristen M. Swanson and the five C's of Simone Roach. Our research method is qualitative research where we use content analysis to analyse researches.

The results of this study show that overweight is a pandemic problem today and a lot is being done to promote the wellbeing of children. Many factors have been found but implementation is challenging. We found out that overweight can be a major cause of many severe illnesses.

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# 1 Introduction

Overweight and obesity in childhood is a pandemic problem, which faces children living in both developed and developing countries. The World Health Organization defines overweight as an abnormal or excessive fat accumulation that presents a risk to health (WHO, 2012). Our research is considering factors that could be the major cause of this pandemic problem. Are sitting in front of the television or playing video games causes of a child doing less physical activity? Are families too busy to have time to make proper food rather than going for fast food?

It is important for families to understand how to prevent weight gain. Parents should be aware of how to promote the health of their children and to control weight gain by ensuring good eating habits, activities and exercise. We chose the age group of 3 to 6 because various medical researchers have proven the fact that high cholesterol level and heart inflammation can start as early as the age of three for overweight or obese children, and also other diseases such as increased total cholesterol and low-density lipoprotein, elevated triglycerides, high blood pressure, elevated insulin levels, abnormal heart functions, abnormal endothelial heart functions and the presence of metabolic syndrome.

It was proven that some level of high hormones in obese children played a role in developing cancer. In order to know if a child is obese or overweight we use percentiles instead of absolute measurements since children are still growing.

BMI which simply means Body Mass Index is a form of comparing the weight and the height; it indicates the body's fatness. This method is used in measuring the weight in children also. After this has been done, the BMI percentile is calculated. This is for both boys and girls. There is a chart where the child's weight and height would be placed to show where the child stands compared to children of the same age and gender. This is commonly used in child clinics and in schools.

The parent's perspective of a child's weight varies widely between different ethnicities and races. Some parents from certain cultural backgrounds consider talking about the child's weight gain to be an insult. Furthermore, the question arises with whom the parents can discuss such a delicate issue. Some researchers have also proved that children who have moved to a foreign country are more likely to become obese due to sudden change of food, financial situation and activity opportunities.

The reason why we decided to conduct this research is to find possible ways of preventing overweight and obesity in children worldwide. There is a tremendous increase in obesity in adolescence and non-communicable diseases in adulthood worldwide and this could be due to early onset of overweight and obesity in childhood.

## **2 Aim**

The aim of our study is to discover the factors of overweight in children at the age of 3 to 6 years old since various medical researchers have proven the fact that high cholesterol level and heart inflammation can start as early as the age of three for overweight or obese children. We want to find out how parents control their children's health.

In this study we are going to use theoretical and empirical information. Theoretical literature includes theory and concepts in our thesis, and empirical literature includes relevant studies in journals and books as well as articles as primary sources (Burns & Grove, 1997).

Our research question is: What are the main factors that could contribute to overweight in children?

### **2.1 Literature review**

When searching the CINAHL and EBSCO databases we limited our research by using keywords such as overweight, obesity and children. While we were searching for articles, we found a total of 3,162 articles, which cover many areas. To specify our research area we limited the search with keywords such as overweight, children 3 to 6 years, parental perception and children, which gave us 54 results.

### **3 Theoretical background**

The theoretical background we have chosen to use in our study is to describe caring as a concept. We used the theory of caring by Simone Roach and Kristen Swanson and they emphasized that overweight in children is a global problem. Roach's theory is the concept of the five C's, which are compassion, competence, confidence, conscience and commitment. Swanson's theory of caring consists of caring, knowing, being, doing, enabling and belief. These concepts are all described in the theoretical framework in further detail.

According to Judy Richard (1999), caring for the children requires specific knowledge of how children develop and how their various needs are met in different care settings. The basic needs of children are universal and they should be met regardless of the child's cultural and ethical origin, social class and family background.

Caring is defined as something natural and original. The origin of natural care is understood to be the idea of motherliness, which means cleansing and nourishing and spontaneous and unconditional love (Eriksson, 2010). As caring itself has been described by Eriksson's theory, caring by the mothers is natural and unconditional and mothers are the main foundation of the good health of their children.

#### **3.1 Theoretical framework**

In this study, we chose to use Simone Roach's caring theory since in this theory Roach explains the concept of caring as a human mode of being. Further on in her theory she explained that health care professionals are not caring for others just because it is required in their job, but because they are human beings. During her research, she came up with the question of, "What does a nurse do when he/she is caring for another?" This question later developed the five C's of caring, which are compassion (sharing in the world of the client), competence (an appropriate level of knowledge and skills), confidence (the attribute that creates the relationship of trust between patients and the care givers), conscience (a sensitive awareness of moral and ethical issues), and commitment (a steadfastness of purpose and devotion to the needs of others). These five C's are intended for the goal which a nurse must aim for when providing care to others.

Another theorist we used was Kristen M. Swanson. She was born on January 13, 1953, in Providence, Rhode Island. She graduated from the University of Rhode Island as a



registered nurse in 1975. She pursued graduate studies in the Adult Health and Illness nursing program at the University of Pennsylvania in Philadelphia. She gained a Master's degree in the year 1978 and after that worked as a clinical instructor of medical nursing at the University Of Pennsylvania School Of Nursing. She later enrolled for a Ph.D. Swanson is interested in psychosocial nursing (Alligood & Tomey, 2010).

We chose the theory of caring to study prevention and control of overweight in children aged 3-6. Swanson develops her theory of caring inductively as a result of several investigations. She defines nursing as informed caring for the well-being of others. She then defines persons as a unique being who are in the midst of becoming and whose wholeness is made manifest in thoughts, feelings and behavior (Alligood & Tomey, 2010).

According to Swanson, to experience health and well-being is to live the subjective meaning-filled experience of wholeness. She reestablishes well-being as a complex process of curing and healing that includes releasing inner pain and establishing new meanings, restoring integration and emerging into a sense of renewed wholeness. Environment for nurses is any context that influences or is influenced by the designated client (Alligood & Tomey, 2010).

One of the major concepts in Swanson's theory is caring, and she defines caring as a nurturing way of relating to value others towards whom one feels a personal sense of commitment and responsibility. The concept of knowing she defines as striving to understand the meaning of events in the life of the other, avoiding assumptions, focusing meticulously, and engaging both the one caring and the one cared for in the process of knowing (Alligood & Tomey, 2010).

The concept of being, which means being emotionally present for the other, includes being there in person, showing availability and sharing feeling without burdening the one cared for. The concept of doing means to do for others what one would do for oneself if at all possible, including anticipating needs, comforting, performing skillfully and competently and protecting the one cared for while preserving his or her dignity. The concept of enabling means facilitating the other's passage through life's transitions and unfamiliar events by focusing on the event, informing, explaining, supporting, validating feelings, generating alternatives, thinking things through, and giving feedback (Alligood & Tomey, 2010).

Maintaining belief as a concept in this theory is defined as sustaining faith in the other's capacity to get through an event or transition and face a future with meaning, believing in the other's capacity and holding him/her in high esteem, maintaining a hope-filled attitude, offering realistic optimism, helping to find meaning, and standing by the one cared for no matter what the situation (Alligood & Tomey, 2010).

## **3.2 Development of 3 – 6-year-olds**

### **3.2.1 Growth in height and weight**

The average growth for three- to four-year-olds in a year is a bit over 2 kg in weight and the height should be within the range of 96 to 105 centimeters. This age is full of energy and curiosity. The personality becomes clearer at this stage. Some children can still have what we call the negative age, whereby the child tends to be difficult in every situation and has a constant negative attitude against everything. The child might refuse to eat or just cry over nothing. Towards the end of the age four the child has most likely become creative, energetic and expressive and shows more curiosity towards the world (Hiranandani, 2006).

The rate of physical growth slows and stabilizes during the age of 3-5. The average weight for a three-year-old is 14.6 kg and height 95 cm, a four-year-old is on average 16.7 kg and height 103 cm, and a five-year-old 18.7 kg and height 110 cm. The average weight gain is about 2.3 kg per year while the yearly increase in height is approximately 6.75 to 7.5 cm. The gross and fine motor behaviour is refined and muscle coordination can be seen in several areas. Nutrition requirement for calories per kilogram of body weight continues to decrease slightly to 90 calories/kg for an average daily intake of 1800 calories. Fluid intake also decreases to 100 ml/kg daily and depends on activity level, climate and health condition. Protein requirement is 1.2 g/kg for an average daily consumption of 24 g. A moderate reduction of fats in the diet is recommended (Whaley & Wong, 1999).

At three to four years of age, children may have developed some character of eating which is more rebellious but at age five to six, children are more ready to try new foods, especially if encouraged by parents who allow children to help preparing the food and experiment with new tests. The amount of food consumed by the children varies from day to day and parents are normally worried about the quantity of food eaten by the children, but quality is more important than quantity in nutrition and parents should rather consider quality. Parents can also record the weekly food consumption of their children to help them know how well or poorly the child is eating (Whaley & Wong, 1999).

### **3.2.2 Motor skills**

According to Carter and Dearmun (1995, p. 138), the motor movement at three to six years of age is well developed to allow children at this age to control bowel and bladder. It also gives co-ordination to manage things like getting dressed and putting on shoes although buttoning and zipping can still be a challenge in this age. Hand and eye coordination helps them to draw and make marks on a paper which eventually results in writing. Activities such as hopping, skipping and jumping are practiced everyday by the children and they require a diet which provides enough energy; there is a need for these children to perform physical exercise which improves their coordination and balance.

Both gross motor and fine motor skills develop throughout childhood, since many activities require the two types of movement to occur at the same time. Gross motor skills depend on the strength of the large muscles that support and move neck, shoulders, back, arms and legs. Fine motor skills also rely on muscle strength and messages from brain but they produce more complex movements such as picking up a small object with the finger and thumb. Children between the ages of three to six are still in the process of development and they need parental care and support in order to achieve the full well-developed growth (Carter & Dearmun, 1995).

Parents should provide a nurturing environment for their children that is safe enough for play. Exercise helps to strengthen muscles as well as improve coordination and balance, and children who get enough physical activity tend to be happier and sleep better. Good nutrition and regular physical activity is essential for children to develop to their full potential. Provide children with grains, vegetables, milk, fruit, protein, oil and plenty of water, but avoid caffeine, to the improve their health and support their development (Altmann, 2007).

The physical changes that occur at this age progress rapidly. The child is able to run and jump and some are able to stay in balance for a short distance. The child is able to climb the stairs independently and might already be able to use little vehicles such as a bicycle with the help of extra wheels. The motor skills that a child can do at this age are for example holding the cup in one hand, opening a zip and big buttons. The child is able to copy simple figures such as circles if there are models available (Hiranandani, 2006).

Motor skills at the age of four are developed better in the way that the child can jump on one leg, throw a ball from above and build block towers. He is able to draw a triangle human being with a head, body and legs and is very active in cycling. The ages of four to

six years is when the child has achieved a stage of independence. The child can dress, eat, and go to the toilet independently (Hiranandani, 2006).

The motor skills of a five-year-old are very well developed. He is able to easily jump, hop and do somersaults. He can draw more specific parts of a human being, copy pictures and write alphabets better. He independently takes care of going to the toilet and dressing. About 20 percent of five-year-olds still wet their bed at night once a month, which is more common for boys. A six-year-old is able to ride a bike very well and dance according to rhythms, but might still be a bit unsure (Hiranandani, 2006).

### **3.2.3 Cognitive and social skills**

Cognitively and socially this age is the essential learning age. The child is able to play more creatively with different toys. He is able to understand his world better, can create stories, and explain things about the past and about people who are not around at the moment. He becomes interested in listening to stories from storybooks and likes to read on his own and also create stories from pictures and characters. At this age the child develops empathy for others. He plays more with other children and takes them into consideration while playing. The child is very active at this stage and would love to participate in home chores; usually he has routines and rituals he does not want to change. It is important to have routines for a child at this age; it makes the child feel safer. Eating habits should be taught in such a way that the child understands when and what to eat (Hiranandani, 2006).

Socially, at the age of four, the child has developed in the way that he shares his toys more with others and is able to communicate better. Cognitively the child is able to differentiate between fantasy and reality. He is able to say his first and last name, count ten objects or more, can play in a group, and ask questions such as why and how. Verbal communication develops from two or three word sentences to five, six or more word sentences (Hiranandani, 2006).

However, a five-year-old is able to go through deeper conversations with a friend or adult and does not have difficulties in expressing himself. A five-year-old is able to identify letters of the alphabet better, which helps in developing the reading skill. A six-year-old can already have abstract thinking and he tends to think more wisely. The child learns to read and write better. This age might sometimes be challenging, because the child learns very quickly and needs a lot of encouragement from parents and other caretakers (Hiranandani, 2006).

### **3.2.4 Emotions**

Fear is a common thing at this stage. The child might have nightmares or is afraid of being in the dark alone. Since the child's imagination can be very wild at this stage, it is important to know how to handle such sensitive issues. It is very normal for a child to fear being in the dark or in the bath, and this requires patience for many parents to be able to assure the child that he is safe.

A four-year-old is usually imaginative, energetic, sometimes over-excited and might ask many questions. He might still show signs from the toddler stage, including random anger and stubbornness (Hiranandani, 2006).

A six-year-old understands better that other people might not have the same feelings as he does. This might sometimes make him feel aggressive and quiet. Having rules for a child is vital and he might not agree to any changes to be made (Hiranandani, 2006).

Children of these ages of three to six have emotions that they can be able to control and some children have become calmer while others may still struggle with their strong emotions. Anger and aggression is common in children, but what is important for parents is to keep calm no matter how the hard situation could be. Parent should offer comfort by hugging a child if tantrums occur but if the parents know that the child is hard to contain, they should try to ignore the behaviour. Parents should be aware of how to identify the factor that could lead to anger in their children, make an effort to understand the child, praise the child when he behaves well and remember that children are individual and that different approaches suit different children (Altmann, 2007).

### **3.3 The concept of overweight**

Overweight and obesity in childhood is a global problem that is steadily affecting both poor and developed countries. WHO reported that in the year 2010, the number of overweight children globally under the age of five is estimated to be over 42 million, of which 35 million are in developing countries and 8 million are in developed countries. Overweight and obesity increase the co-existence of other diseases and continues obesity in adolescence and adulthood. Overweight means having extra weight beyond your BMI while obesity means having too much body fat. In childhood, the body composition shows age-related differences and Body Mass Index cut-off points change with the age of four. Children who are obese are more likely to develop several chronic diseases such as diabetes, hypertension, hyperlipidaemia, asthma, and sleep apnoea (WHO, 2012).

The cause of overweight is an energy imbalance between calories consumed and calories used. Some people tend to consume energy-dense foods, which are high in fat, salt and sugar but low in minerals, vitamins and micronutrients, not considering physical activities. Children in undeveloped and middle-developed countries are more vulnerable to inadequate prenatal, infant and young child nutrition and they are exposed to high-fat, high-sugar, high-salt, energy-dense, micronutrient-poor foods (WHO, 2012).

Overweight is preventable through supportive environments and communities, which are fundamental in giving people choices by making available a healthier choice of foods and regular physical activities. Limiting the intake of high-fat food, increasing the consumption of fruits and vegetables, legumes, whole grains and nuts, and engaging in regular physical activities achieves energy balance and healthy weight for an individual (WHO, 2012).

William (2007) explained that paediatric obesity is defined by the relationship between the weight and the height of a child which is considered normal. The World Health Organization stated that overweight and obese children have a higher chance of early death and disability in adulthood due to development of non-communicable diseases. The risk slightly depends on the age of the onset and duration of obesity and these children could suffer either short-term or long-term consequences of health problems.

Janson & Danielsson (2003) explain that overweight is commonly confused with obesity. Being overweight is not a sickness, being overweight is uncomfortable but not necessarily dangerous. Being overweight can lead to being obese, which has a different meaning altogether. There are many factors that lead to overweight. If the overweight of a child continues to the age of six, according to the weight curve, health professionals or parents should get involved and take action. Obesity is considered a sickness and should be taken seriously. These are two clearly different concepts. It should be considered that standards in countries vary, that what could be considered as overweight in Europe could be considered as normal weight in America.

It can be difficult to say who is overweight; children have different body images and are of different heights at certain ages. What parents need to understand better is to give a child a healthy meal and the chance to do physical exercise as well. Most agree that a chubby six-months-old baby is a healthy baby. Children that are breastfed have a weight gain of three times more during the first six months. This shows us that the baby is healthy and eating well. One tenth of two-year-old children are not necessarily overweight in adulthood.

However, 70% of four-year-olds that are highly overweight turn out to be obese when they reach the age of ten (Janson & Danielsson, 2003).

Clinical recommendations are that children with a BMI greater than or equal to the 85th percentile who are experiencing complications of obesity and children with a BMI greater than or equal to the 95th percentile, regardless of the presence or absence of complications, are taken for checkups and treatment. Helping parents recognize overweight in their children and understand the possible underlying problems while planning the treatment and prevention of overweight with them is always a problem (Hodges, 2003).

As we discussed earlier about the percentiles that are used for children and teens, the table below shows in which categories the child is placed according to the measurement results.

Weight status category	Percentile range
Underweight	Less than 5 <sup>th</sup> percentile
Healthy weight	5 <sup>th</sup> percentile to less than the 85 <sup>th</sup> percentile
Overweight	85 <sup>th</sup> to less than the 95 <sup>th</sup> percentile
Obese	Equal to or greater than the 95 <sup>th</sup> percentile

Table 1: Percentiles used for children and teens (WHO, 2012).

It is vital to understand that the percentile chart is not only used to know if a child is overweight, but also if he is underweight or of healthy weight. The percentile chart is used by health professionals in children's clinics and schools. Children who are over the 95<sup>th</sup> percentile for Body Mass Index between the ages of 2-5 are five times more likely to be obese by the age of twelve, compared to children who are of the same age group but never exceeded the 85<sup>th</sup> BMI percentile (Nader et al., 2006 as cited in Boles, Scharf & Stark, 2010).

## **4 Methodology**

Methodology is a high-quality method used in investigations to obtain, arrange and analyse high-quality data. Studies that use methodology address the development and assessment of research tools or methods (Polit & Beck, 2012).

### **4.1 Qualitative research**

Qualitative research is a way of exploring the depth, richness and complexity inherent in phenomena. The qualitative approaches are holistic and have the belief that there is no single reality, reality is based on perception and what we know has meaning only within a given situation or context. This reasoning process used in qualitative research involves perceptually putting pieces together to make wholes (Burns & Grove, 1997).

In this research we used a qualitative research method. Qualitative studies use an emergent design that evolves as researchers make ongoing decisions reflecting what has already been learned. Qualitative data collection is divided into three categories, and the first one is an in-depth interview, where the researcher does face-to-face and group interviews. The data can be collected in different ways such as through stenography, audio recording, video recording or written notes (Polit & Beck, 2012).

Direct observation is another way of collecting data using the qualitative method, whereby the observer does not interview the respondent but observes which may include photographs that illustrate some aspects of the phenomenon. The written document is another means of data collection and this includes newspapers, magazines, books, websites, memos, transcripts of conversations, and annual reports (Polit & Beck, 2012).

The method has advantages such as being flexible, capable of adjusting to new information during the course of data collection, and tends to be holistic, striving for an understanding of the whole. The disadvantages of qualitative research are that it requires the researcher to be intensely involved which may lead to spending too much time with it, more than planned by researcher before the study began, and it requires the researcher to become the research instrument. We are going to use the written document as a way of collecting data by reading articles, journals and literature in order to obtain the precise result corresponding to the aim of our thesis study (Polit & Beck, 2012).



We chose the articles which supported our topic and read recent research to be able to get the most recent results, from the years 2002 to 2012. All in all we used 9 articles including journals, 12 books of which most of them were from the Tritonia library, and 4 webpages.

## **4.2 Content analysis**

After collection of the data, there is a need for data analysis and that is to organize, provide structure to, and elicit meaning from the data. In our study we chose to use qualitative content analysis since our information came from an already researched area. Content analysis is the analysis of narrative data to identify prominent themes and patterns among the themes. Qualitative content analysis involves breaking down data into smaller units, coding and naming the units according to the content they present and grouping coded materials based on shared concepts (Polit & Beck, 2012).

## **4.3 Data collection**

In our study we searched for the information through accessing the webpage of Novia University of Applied Sciences which lead us to the Nelli-portal database, to be able to access the EBSCO and CINAHL databases to get articles and journals that could give us sufficient information.

When choosing the articles which were supporting our topic we selected recent researches to be able to get the most recent results, from the years 2002 to 2012. All in all we used 9 articles including journals. We concentrated on articles that talked mainly about overweight in children and we tried to specify the age group.

## **5 Results**

Through the process of reading and analyzing all the articles, journals and books, which are shown in the appendices and references to provide valid and recent information, we were able to achieve the aim of our study and answer our research questions. We accomplished this through noting some of the recurrent words in different articles, journals and books, then regrouped them to understand a specific concept and to be able to give our readers the most recent research findings regarding causes of and ways of preventing overweight, to help in maintaining children's health.

### **5.1 Factors contributing to overweight in children**

The results show that the following are the factors that contribute to overweight in children:

- Mother's work affecting diet and weight gain
- Parents' and health care professionals' perception of overweight
- Diet and physical exercise
- Financial and socioeconomic effect
- Parental stress and cultural perception

#### **5.1.1 Mother's work affecting diet and weight gain**

A research was done in the year 2002 by the National Bureau of Economic Research Inc. They wanted to investigate whether overweight in a child could be caused by the mother working. One of their questions was whether the children were more or less likely to be overweight if their mothers worked. They observed that if genetics was the only cause of overweight, it would be difficult to imagine the dramatic and rapid changes that could take place in overweight children, as genetics is unlikely to have changed so significantly over 30 years since it plays a vital role. The weight of children under the age of six of married working women doubled from 30% to 62% from 1970 to 1990 (Anderson, Butcher & Levine, 2002).

Their results concluded that a child was more likely to be overweight if his/her mother worked more intensively (more hours per week) over the child's life. The results were that children of white women, women with higher education and high income level were more likely to be overweight. Children that were unsupervised normally stayed at home, watching television, playing computer or video games and tended to make poor nutritional choices when preparing meals. Another interesting result was that children who were

breastfed were less likely to be overweight than those who were not. In this research it was stated that overweight is more likely to respond to external cues such as emotional stress, fear, anxiety, sadness, time of the day, anger or even sight of food (Anderson, Butcher & Levine, 2002).

### **5.1.2 Parents' and health care professionals' perception of overweight**

Several studies have found out that overweight patients are exposed to negative stereotypes and attitudes held by health care professionals. Health care professionals and the client have communication barriers when it comes to revealing to the parent the child's overweight and health care professionals attempt to avoid the discussion of overweight in order to save the relationship with the parents. It is even more difficult for the nurses to bring up the topic of overweight in a child if the parents themselves are overweight (Isma et al., 2012).

The perception of overweight has an effect on the parent's behavior and nurse's behavior. Perception can be influenced and more importantly changed, therefore the prevention of childhood overweight and obesity requires urgent attention. In one article parents expected an average look for their children. They stated that the child should look average like other children and be of the right size and height; in other words, health seemed to be less important to these parents than the appearance (Isma et al., 2012).

Chadwick, Sacher and Swain (2008) confirmed that to inform a parent that their child is overweight seems to be difficult as compared to breaking the news to the parents that their child is underweight, even though both overweight and underweight are associated with poor health and low quality of life from childhood to adulthood. This is due to health care providers being reluctant to address this issue of overweight in children.

Overweight in children is increasing while pressure makes commenting on weight a taboo subject. Health care professionals who anticipate a negative reaction to the subject of overweight in children may choose to prioritize the need to maintain supportive relationships over the need to directly address the weight. Parents whose children are overweight have difficulties in identifying their children's weight status as compared to parents whose children have normal weight. The media uses the term 'extreme weight' for obese children and this could give parents a distorted perception of what constitutes overweight (Chadwick, Sacher & Swain, 2008).

Since overweight is a sensitive topic to discuss with parents, there is an approach to initiating the subject with parents since some parents may assume that the health care professional is being judgmental when discussing their weight. Therefore it is very important for health care professionals to adopt a non-judgmental attitude, give the parent opportunity to express their perception of their children's weight, and monitor the language they use, as well as listen carefully to the language used by the parents to express a weight problem. For example, the terms fat, obese and overweight should only be used if you are sure that the parent is comfortable with them (Chadwick, Sacher & Swain, 2008).

### **5.1.3 Diet and physical exercise**

In one research, nurses emphasized mainly diet as the crucial part in healthier weight and a healthier child. In collaboration with dieticians, parents were given more counseling on healthier dieting by the dieticians themselves. Nurses confirmed that childhood overweight, being a complex problem, is difficult to overcome due to lifestyle habits such as poor diet and lack of exercise among parents which can be transferred to the children. They also concluded that full-time working parents are often stressed and lack the time to prepare proper meals, which often results in them buying fast food for the family. Some parents also use the television as a babysitter when they lack the time to go play with children outside after work (Isma et al., 2012).

Children that were bottle-fed were more likely to be overweight than children who were breast-fed. Children who are born with more weight than the recommended are at a higher risk of being overweight. When children are born, they have relatively more fat and this is considered normal. This fat decreases relatively as the infant grows older and this can last for several years. But if the BMI at the age of three starts to increase, it is referred to as early adiposity rebound and the child is likely to become overweight. At around five years of age, children have the lowest amount of fat in their body. Some medications can also be a cause of weight gain in children, common medications such as anticonvulsants, certain antidepressants and steroids. Steroids decrease inflammation in many disorders such as asthma, but one side effect is to stimulate the appetite center in the brain. Increased appetite in a child's life can lead to overeating, which later causes overweight (William, 2007).

According to Hodges (2003), parents understand that overweight in their children is also one of the factors which could affect nutrition and lifestyle changes for the children. Eating behaviours of children are developed by many factors, such as exposure to and

accessibility of food, modeling of eating behaviour, providing children with food that leads to positive or negative physiological consequences and the feeding practices utilized. Parents control the amount of food given to their child or use food as a reward which can lead to negative results.

A recent study showed that mothers believe that a heavy infant is a healthy infant and that it shows good parental and successful feeding. These are the misconceptions and unhealthy beliefs by parents that should be taken into consideration by health care providers while discussing child weight gain prevention with the parents. Children's physical activities are also influenced by parents, parent should be able to provide a safe environment that nurture physical activities and parent should create challenging physical activities in order to increase their children ability of development. Children at the ages of 4 to 7 whose parents were physically active were nearly six times as active compared to the children of the same age whose parents were not physically active (Hodges, E., 2003).

#### **5.1.4 Financial and socioeconomic effect**

Parents' poor financial situation and low level of education was found to be one of the factors that can affect the child's weight. A poor financial situation affects their choices of diet and activities for their children and children under these circumstances are normally overweight. Parents with low income will choose to buy cheaper food products with poor nourishment content and their children are less likely to participate in extra-curriculum activities. Parents with low education level may have poorer economy knowledge and may not understand how to serve their children a healthy meal or why health is important (Isma et al., 2012).

Low socioeconomic status can contribute to lack of sufficient money to buy healthier foods which are often more expensive, food such as lean meat, fish, fresh fruits and vegetables, and parents choose instead to buy junk food which is cheaper. Obese parents can lead their child to become overweight too and the risk is 12 times greater than for non-obese parents. Genetics can be involved but, most importantly, lifestyle issues regarding nutrition and physical activity play a big part in controlling weight. Parents are role models for their children, and if a parent has a bad eating habit their children are likely to follow the behaviour. Many studies have shown that the rate of pediatric overweight is greater in children whose parents have a low level of education. Such parents do not understand the possible risks and complications of childhood overweight (William, 2007).

### **5.1.5 Parental stress and cultural perception**

Factors such as genetics, environment, and socioeconomic position can lead to overweight, and excessive weight gain in childhood can constitute a risk of obesity in adulthood. Children whose parents are obese are more likely to be overweight, and psychological stress could contribute to weight gain in children as well as parents' stress. Stress can cause underweight or overweight. Other factors such as physical activities in childhood set lifelong patterns of behaviour and can influence the children's BMI (Stenhammer, Olsson, Bahmanyar, Hulting, Wettergren & Edlund, 2010).

Psychosocial stress is associated with parenting, as parenting itself can be a stressful event, and this kind of stress among parents has direct consequences for their children, such as that the children themselves could be stressed. Parental stress also influences parenting behaviour. Parents' attachment style is a measure of personality relevant to interaction within intimate relationships. It has consequences for the child's development in that non-secure attachment in mothers has been associated with children being overweight. Children who spend more time per week watching television are more likely to be overweight as compared to children who spend less time per week watching television (Stenhammer, Olsson, Bahmanyar, Hulting, Wettergren & Edlund, 2010).

In the following study, it was also found that there are cultural differences in what is considered as being the best weight. The researchers noticed that in many cultures, overweight is considered as a sign of health and wealth. Children are considered by their parents to be stronger and sweeter if they have more weight. Foreign mothers were very worried that their children were not eating enough and they kept on offering food and did not allow them to feel hungry. Mostly these children were offered snacks such as crisps, crackers and sweets (Isma et al, 2012).

## **6 Diet and physical exercise**

Overweight and obesity as well as related non-communicable diseases are totally preventable. Since prevention is the easiest way to stop childhood obesity, the aim of recent research is mainly to bring the problem under control rather than affecting a cure. The way to fight childhood obesity is through achieving an energy balance that can be maintained throughout one's life span (WHO, 2012).

Children need a balanced, healthy diet in order to maintain physical growth and development. There are factors that can affect children's diet such as a child's personal likes and dislikes. Children may have certain dislikes of specific foods, for example a child who does not like green vegetables and prefer burgers and chips. Therefore, it is the responsibility of the caregiver to make sure that the child sometimes eats fruits and vegetables, which has essential minerals and vitamins (Richard, J, 1999).

The food model is created to give a view of a healthy diet. This helps us to understand how to eat healthily, most importantly children. The food model consists of half a plate of salad, one fourth potatoes, rice or pasta and the other one fourth of meat, fish or chicken with low salt and fat. A regular meal rhythm is very important for a child. Children tend to eat often, but in smaller amounts than adults. It is good if the day consists of breakfast, lunch, dinner, and evening meal, and also of snacks in between meals, mostly twice (Suomen sydänliitto r.y., 2012).

A child below school age is recommended to have active exercise for at least two hours. Usually children below the age of three have self-motivated movements such as everyday activities, games and care situations. Older children should have more exercises such as running, biking, climbing or playing sport games. It is good for older children to have a sport they like that they attend a few times in a week. By doing all these exercises children develop healthily and improve their wellbeing (Suomen sydänliitto r.y., 2012).

Family income and financial status can also affect a child's diet, as well as peer pressure and advertising pressure. Physical activities promote children's development. As soon as a child can walk, physical skills should be encouraged at every opportunity. The environment where children are playing, learning and living should be safe. Children should be taught how to manage personal hygiene and toileting, and they should be

allowed to have a reasonable amount of sleep and rest in order to promote their growth and development (Richard, J., 1999).

Some children are neophobic, which means they resist trying new food, and this can be healthy food such as fruit and vegetables. So teaching parents how to present the rejected food may be important in order to control weight gain in children. Persistent tantrums at the age of three because of food have been discovered to be a cause of obesity at the age of five. Therefore, targeting and managing strategies of tantrums around food may be important skills for the parents of the children (Boles, Scharf & Stark, 2010).



## **7 Ethical consideration**

The conduct of research requires both expertise and diligence, and also honesty and integrity. The ethical actions essential in research are: protecting the right of human subjects, balancing benefits and risks in a study, obtaining informed consent and submitting a research proposal for institutional review (Burn & Grove, 1997).

Ethics directs actions as being either right or wrong. The code of ethics serves as a model of personal conduct. Normally in a health care setting, an ethical dilemma occurs when a person's values and laws conflict. There are several ethical principles recommended by the International Council of Nurses, which are supposed to guide nurses in their daily practice to ensure the ethical rights of the clients.

In qualitative research, the researcher should follow the ethical principle such as beneficence, meaning doing good to the clients, and non-maleficence, meaning doing no harm to the clients. Veracity, meaning the researcher should be honest and avoid deceiving or misleading a client, is a principle that can cause conflict when the truth may harm the study by interfering with the research results. Clients may sometimes feel anxiety, discomfort and confusion during an interview. The client is allowed to withdraw from the research study in such cases (Fry, S.T., & Johnstone, M-J., 2009, pp. 23-26).

In our study, we do not need participants, and therefore there is no informed consent needed. We are using secondary data collection through reading the literature and using the results of researches that have already been done in order to analyse and find out what methods have been effective in controlling children's weight and preventing obesity.

We are going to consider ethical research misconduct, in other words the research integrity, which protects public trust. Misconduct is described as fabrication. This means making up data or study results. Falsification includes manipulation of research materials, equipment, and process, changing or omitting data. Plagiarism means using someone's idea, results or words without giving due credit to the owner of the work; this includes information obtained through the confidential review of research proposals.

Furthermore, we are going to make sure we use the right words to explain the same thing the author has expressed and to write the exact research results and keywords as researchers use them. This can cause a dilemma of how we understand and translate the words with the authors/ researchers.

## 8 Interpretation and understanding

Through reading the literature about overweight in childhood we deepened our understanding of how overweight in childhood can affect the children's life and, more importantly, their adulthood. Being overweight does not necessarily mean a child is sick but it is an early onset of obesity and various diseases.

Overweight can start as early as when the child is born, in that children who are born with higher weight than recommended are most likely to become overweight. Therefore, parents should in such a case take into consideration that they need to monitor the child's weight. Children who are bottle-fed are more likely to have overweight as compared to children who are breast-fed (William, 2007). It is important that parents introduce bottle-feeding to the children only at the necessary age and try to breast-feed children until the appropriate age.

Children at the age of 3 to 6 can be challenging to take care of and all we need to understand how we can make their weight as healthy as possible. Genetics can be a cause for overweight in children but nutrition and physical activity play in big part (Isma et al., 2012). Mothers should be able to provide healthy food to their children, and this can be done by understanding what is the healthy weight of your child, what kind of food you offer to the child, and what kind of activities your child is involved in.

Parents should be able to set a good example to their children by avoiding offering snacks to the children, and instead offer fruits and vegetables. If your child does not like healthy foods such as fruit and vegetables, encourage your child and eat these healthy foods yourself to create support, and give praise to the young ones when they overcome their fear of these healthy foods and eat them (Boles, Scharf & Stark, 2010). Monitor your child's daily activities and avoid allowing children to watch television for a longer time than necessary. Provide a nurturing environment where children can play, and as parents take a part in the children's activity to encourage them (Hodges, E., 2003). This can set a good example and encourage these children.

Another factor that cause overweight can be hard-working mothers who do not have enough time to make proper meals for their family but instead buy fast food for their family as a substitute (Anderson, Butcher & Levine, 2002). Mothers should be able to balance work and the health of their own family. Working life and taking care of young

children can be a stressful situation to mothers; therefore, finding a way to balance between work and health can give us a solution to the problem of overweight in children.

From country to country, in different races and ethnicities, people view weight in different ways. In Western countries it is possible that parents partly understand the problem of overweight in children and how dangerous it is. In developing countries parents and society may view overweight as a sign of wealth, good parenting and even of health (Isma et al., 2012). Perception of this global problem may differ but the effect is the same in children's health. Through health promotion, talking to parents about this topic without withholding, we can promote these children's health.

In developed countries, women are well educated, with good understanding of overweight and health in general, and they have good jobs, which means a good income and the ability to buy healthy, expensive food (Isma et al., 2012), whereas in developing countries women lack sufficient education and hence have less understanding of health and the overweight problem, and they have perhaps no job and not enough money to buy healthy food for their family but turn to cheap junk food, which leads to overweight.

Roach's theory of caring consists of the five C's of caring, which are compassion, competence, confidence, conscience and commitment. If you link this to our study you will realize that this theory is very helpful. It could be understood that parents might have compassion in the sense that they could put themselves in the mind of the children to understand what they might be going through (Alligood & Tomey, 2010).

Parents might need competence to have a certain state of knowledge and skills to provide adequate care and support to their children, for example, how a child should eat more healthily or how a child should exercise. Parents should have help from professionals to have better knowledge of a healthy lifestyle. Parents should be able to encourage children to eat more healthily and provide chances for physical exercises as well. This means that parents should establish confidence between them and the children. Parents have to be committed to be able to support the needs of their children (Alligood & Tomey, 2010).

Parents should be able to balance between their work and the health of the children, in order to be able to support their needs. Parents often use other means of spending time with their children, for example letting them watch television or play video games for longer so that they are able to get more time for themselves. It requires a lot of commitment from them to supervise and have time for their children (Alligood & Tomey, 2010).

Swanson's theory of caring gives nurses the real insight into caring for the clients and into how important it is to be in the world lived by the clients. It also promotes caring for the individual as a whole while protecting their dignity and respect. In this theory, therefore, we come to understand that caring is central to nursing and through caring the client can gain well-being (Alligood & Tomey, 2010).

Swanson's theory consists of concepts such as caring, knowing, being, doing, enabling and belief. Linking these concepts to caring for children, caring is a concept that should show the feeling given to another by implying commitment and responsibility. Parents should know that children are vulnerable and therefore need someone to look up to and feel safe with. Parents should monitor their child's physical activities through providing a nurturing environment and involving themselves in the child's daily activities (Alligood & Tomey, 2010).

Knowing, another concept, describes in this context that parents should be able to listen to the child and not make assumptions, and be able to engage the child in his or her care plan. The concept of being shows that parents should be able to be emotionally present for their children by offering support and encouragement and sharing feelings (Alligood & Tomey, 2010).

The concept of doing in this context could bring up the thought that parents should understand that children need a healthy lifestyle just the same way as adults need it. They should be able to consider that their needs should be met, and be able to offer comfort and protect the child's dignity. The concept of enabling is understood as the support needed from the parents when the child is transforming physically and psychologically (Alligood & Tomey, 2010).

Belief as a concept in this study means that parents should be able to have faith in themselves through this event of transition and to be able to face a future with meaning, believing in their children by holding the child in high self-esteem (Alligood & Tomey, 2010).

## 9 Critical review

In this study we have learned the term overweight and associated causes of overweight in-depth through reviewing already existing literature. The purpose of this study was to gather information, analyse and verify the reliability.

We used a qualitative research method, which involved collecting data by already researched literature, reading through, analyzing and coding in order to be able to achieve our results. In our study we used secondary information which was scientifically published and reliable. This means that we interpreted the work of other people and our understanding might differ from that of the authors, but we tried to interpret it based on our understanding without changing the information.

The strong part of this study was that it was easy to find information on this topic since it has been thoroughly researched in different ways and is still an ongoing research. There was a lot of information. We were able to collect many similar factors stated by different authors. The results were strong because the results of each research were the same. Through the factors we found, parents could use this study as a good starting point of caring for children and promoting their health.

The weak part of this study was that it was challenging to narrow down information that was retrieved, since there seemed to be a lot of information generally about children who are overweight and obese. It was more work to narrow it down to a specific age range regarding overweight precisely. It would have been much better if we had done research ourselves, in which we had actually changed the research method by interviewing parents and getting primary information. However, we chose to do it in a different way, because this could be a sensitive topic to many parents and the topic would have been narrowed down to only Finland and a particular cultural view.

In this study we learnt that it was worth doing, since overweight as a topic has been undermined by the majority but at the same time it is a global problem which seems to be affecting many. The information was useful to us as nursing students since we will come across this sort of patients in our future working life.

Now that we have gathered enough information, we will be able to help in giving vital knowledge to that in need and provide the support that is required. Therefore, this sort of research is important for those working in the health care field and even for parents, to open their minds towards promoting health in general.

## 10 Discussion

Our aim in this study was to analyse what has been researched so far about overweight in children. We wanted to know what methods parents have used to control their child's overweight and promote the health of their child.

After going through many researches we found out that this topic is a sensitive and well researched topic. This seems to be a growing problem to which solutions have been found but not implemented well.

We resolved factors that contribute to overweight. These include genetics, mothers in working life, diet and physical exercise, the perception of health care professionals and parents, financial problems and parental stress. Although there can be many factors, not a single factor has been shown to be the only cause of overweight.

Parents are responsible for their children's health, and therefore parental behavior and parental perception of children's health can be a great influence on children's weight. Talking about overweight in children can be a difficult topic to handle, and several studies have discussed parental perception of their children.

Isma et al. (2012) found that nurses tend to avoid discussion of overweight with the parent in order to save the relationship with the parent, and this research showed that parents expect an average look for their children; they want them to have an average look, like other children. In other words, health seems to be less important to these parents compared to appearance. Parents should therefore be motivated to talk about their children's weight without shame; they should be empowered to handle the topic on a personal level. Nurses should be encouraged to try to explain the benefit of understanding overweight in children, since if the topic is not discussed the children do not get the appropriate care they deserve and in the future can have health problems due to overweight.

Previous research showed that some mothers believed that a heavy infant is a healthy infant and that it suggests good parenting skills. Children at the age of four to seven with parents who were physically active were nearly six times more physically active, compared to the children of same age whose parents were not. This supports the fact that parents' perception of the children can be unhealthy in that they prefer general looks rather than health, and also that parents' behavior is inherited by their children in the way that if you

have healthy living habits your children will also most likely have healthy living habits throughout their life.

Isma et al. (2012) explained that children whose parents are obese are more likely to be obese as well, that physical activities in childhood set continued living patterns and can influence BMI. William (2007, p. 5) also supported this idea that children whose parents are obese are more likely to become overweight and the risk is twelve times greater than for children of non-obese parents. Genetics can be involved in overweight in children but lifestyle patterns regarding nutrition and physical activities are important when controlling weight.

In order to attain good health, one must develop a lifestyle which can be lived for lifetime and this could be achieved basically through healthy eating habits and regular physical activity as the essential tools to a healthy weight for every human being. Parents should be able to provide their children with healthy eating habits and ensure that the children get enough physical activities.

Healthy homemade food is very important. Parents should be able to create time to make food for children at home and avoid offering fast food, avoid giving food as reward to the children and encourage them to eat healthily by explaining the benefit of healthy eating habits, and also practice healthy eating habits themselves in order to be a role model to the children. Hodges (2003) suggested that eating behavior of children is developed by factors such as exposure to food, accessibility to food, modeling of eating habits, amount of food given to the children, and parents who use food as a reward which can lead to negative results.

Overweight in children can also be caused by the fact that parents do not have enough time to care for their children. Several researches concluded that a child is more likely to be overweight if the mother worked more intensively, more hours per week, over the child's life. Full-time working parents are often stressed and lack the time to prepare healthy meals which results in buying fast food for the family (Isma et al., 2012). These fast foods are normally unhealthy and contribute a lot to weight gain.

Nutrition and physical activity are the foundation to healthier weight. When a child is breast-fed, it is less likely to be overweight compared to children who are bottle-fed. At the same time some research suggested that children who are born with much weight could be



overweight later in their life. Children who spend more time watching television and do not engage in any kind of exercise easily become overweight.

Physical activities are very important. Provide your child with a nurturing environment so they are able to do physical activity. The parent can also involve him/herself in doing exercise with their children, as well as creating challenging physical activity for the child. In the research done by Isma et al. (2012), it was found that some parents also use television as a babysitter when they lack the time to go play with the children after work. This will gradually lead to weight gain in the children and most likely could result in obesity in adulthood.

Hodge (2003) said that children are physical activities are influence by parent thorough providing environment that nurture physical activities and also modeling physical activities. The research, which was done by the National Bureau of Economic Research Inc., explained that children who are unsupervised normally stay at home, watch television, sit by the computer or play video games, and are more likely to be overweight.

## **10.1 Conclusion**

This research was done to investigate factors that contribute to overweight in children between the ages of 3 to 6. The study gave a clear picture of what parents could do to reduce this pandemic problem. Parents need to understand the factors that contribute to overweight when caring for their children and should be able to have the capability to avoid such an outbreak in future.

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## Appendices

Author and year	Title	Place of study	The aim of study
Isma, E. G., Brahagen, A-C., Ahlstrom, G., Östman, M. & Dykes, A-K. (2012).	Swedish child health care nurses' conceptions of overweight in children	Department of Health care Sciences, Faculty of Health and Society, Malmö University, Sweden	The aim of the study was to elucidate the conceptions of childhood overweight, including obesity among nurses working in Child Health care
Stenhammer, C., Olsson, GM., Bahmanyar, S., Hulting, A-L., Wettergren, B., Edlund, B. Montgomery, SM. (2010)	Family stress and BMI in young children	Uppsala, Sweden	To investigate family stress and parental attachment style as associated with BMI in young children, and identify possible explanations
Hodges, E. A. (2003, Jan-Feb)	A Primer on Early Childhood Obesity and Parental Influence	Oregon Health and Science University, Portland, OR.	Brief synopsis of parental influence in the etiology of early childhood obesity beginning with parameters of obesity and how it is operationalized through measurement
Dr. Chadwick P., Sacher P. Chadwick, Sacher & Swain, 2008	Talking to families about overweight children	United Kingdom	As primary care trust increasingly takes the step of giving parents direct feedback of their child's weight, school nurses and other health professionals need to talk openly, but sensitively, about children's weight
Anderson, P.M., Butcher K.F. & Levine P.B. (2002).	Maternal Employment and Overweight	Massachusetts Avenue, Cambridge	To determine whether a causal relationship exists between maternal employment and childhood overweight.

	Children.		
Boles, R. E., Scharf C., Stark. L. J. (2010)	Developing a Treatment Program for Obesity in Preschool – Age Children	Department of Pediatrics, University of Colorado	The purpose is to develop and pilot-test a family-based behavioural intervention that utilizes both clinic and home visits to modify the diet and physical activity patterns of obese preschool children.
Davis, M, La Shun Y, Davis, Sheila P. Moll, George (2011)	Parental Depression, Family Function and Obesity Among African American Children	Department of Psychology, Jackson State University	The current study investigated the relationship between parental factors, family functioning, and childhood obesity among African American children.
Ibrahim, A.I., Hawamdeh, Z. M., Smadi, J.T. &Ammari B.A. (2007)	Prevalence of Overweight and Obesity in Urban and Semi-Urban Jordanian Children aged 3-6.	Department of Physical Therapy, Faculty of Rehabilitation Sciences, University of Jordan	To show the prevalence of overweight and obesity among the Jordanian urban and semi-urban children; to compare their body mass index (BMI) with the international standards of BMI.
Reilly, JJ. (2010)	Assessment of Obesity in children and adolescence: Synthesis of recent systematic review and clinical guidelines	Division of Developmental Medicine, Yorkhill Hospitals, University of Glasgow Medical Faculty, Glasgow, UK	Present review is to provide a synthesis of recent systematic reviews and evidence-based clinical guidelines on the use of methods for the diagnosis of childhood and adolescent obesity, in order to inform decisions regarding which methods should be used, and under which circumstances.
Stevens, CJ.	Obesity	Core Nursing;	The purpose of this study was to

(2010)	prevention intervention for Middle school- age children of ethnic minorities.	Nursing; Peer Reviewed; USA	describe the current literature on interventions to reduce obesity in middle school-age children of ethnic minority.
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