



Identification of Eating Disorders & Disordered Eating Behaviour among Children in School Healthcare: a literature review

Dryden Jennifer, Geddi Najma & Oppong Sandra

2019 Laurea



Laurea University of Applied Sciences

Identification of Eating Disorders & Disordered Eating Behaviour among Children in School Healthcare: a literature review

Dryden Jennifer, Geddi Najma,
Oppong Sandra
Nursing
Bachelor's Thesis
April, 2019

Dryden Jennifer, Geddi Najma, Oppong Sandra

Identification of Eating Disorders & Disordered Eating Behaviour among Children in School Healthcare: a literature review

Year 2019

Pages 45

ABSTRACT

The purpose of this thesis was to describe how children's eating disorders & disordered eating behaviors among children between the age of 7-10 are identified in school healthcare. The aim was to produce recent knowledge related to identification of eating disorders for school healthcare nurses & other school professionals.

The thesis was carried out as a literature review and the data was analyzed with the usage of inductive content analysis. Total of 5 articles were chosen for analysis, which were acquired from the following databases, Pubmed, Laurea Finna, ProQuest Central, Finna & EBSCOhost.

Research results highlighted the importance of identification & the prevention of eating disorders in school healthcare among children. Based on the authors findings, the symptoms of eating disorder were seen multifactorial. Assessment of the child needs to be done comprehensively. The school healthcare's checkups were significant means of identification. Co-operation with teachers, parents and other school personnel was also seen important. In most cases the identification of eating disorder or disordered eating behavior started due to teachers or parents' concerns, which led to attention of the school nurse. In some situations, nurses had raised concerns and individual observations aided the identification process, which benefited the children who didn't meet the criteria of diagnosis.

The results from this thesis can be used to develop the school nurses' professional skills and collaboration with other school professionals in identification. Future studies should focus in a more in-depth research on the identification of eating disorders in children below the age of 10 while also, improving the SCOFF questionnaire to suite younger children.

There should be enough resources to train school nurses to update their knowledge on children's eating disorders to prevent poor prognosis.

ABBREVIATIONS

ED	Eating disorder
AN	Anorexia nervosa
BN	Bulimia nervosa
BED	Binge-eating
SCOFF	Scoff- screening tool
DSM-IV-TR	Diagnostic and statistical manual of mental disorder, (fourth edition)
DEB	Disordered eating behaviour

Table of Contents

1	Introduction	6
2	Theoretical framework	6
2.1	Key concepts.....	7
2.2	School healthcare in Finland.....	7
2.3	Identification of eating disorders in the school healthcare	8
3	Children & the prevalence and causes of eating disorders	10
3.1	Eating disorders & disordered eating behaviour among children.....	11
3.2	Definitions of eating disorders.....	12
4	Purpose, Aim & Research Questions	14
5	Methodology.....	14
5.1	Research Method.....	16
5.2	Data retrieval criteria.....	17
6	Results.....	19
6.1	Assessment & screening methods	19
6.2	Symptoms of ED & development	21
6.3	Recognition of the need for help.....	21
6.4	The nurses' professional skills & multidisciplinary team	22
6.5	Challenges related to the assessment & screening methods.....	24
6.6	Challenges related to the identification.....	24
6.7	Challenges of the nurse's professional skills & multidisciplinary team	25
7	Discussion	26
7.1	Ethical considerations.....	27
7.2	Trustworthiness	28
8	Conclusion	29
8.1	Recommendations	30
9	References.....	32

1 Introduction

Lately, there has been a significant increase on the prevalence of eating disorders among children specifically. Yle news reported (2017), in 2015 there were 51 children from the ages of 6 to 13 years diagnosed with severe eating disorder in the Helsinki University Hospital. This reveals that the topic is quite current and highly important. More training should be offered to the healthcare professionals & more emphasize should be put on the identification aspect as well. It is known regardless of the diagnosis, that support provided in the early stage is more productive & cost-effective. In addition, it most commonly prevents the disorder from prolonging and becoming more severe.

Eating disorders are the most common psychiatric illness among children, which seriously threatens the body's ability of functional capacity & development. It can also slow down the psychological and social development of the individual, and frequent starvation can lead to irreversible growth impairments (Marttunen et al. 2013, 61).

The aim is to produce recent knowledge related to identification of eating disorders for school healthcare nurses & other school professionals. The purpose is to describe how children's eating disorders & disordered eating behaviours are identified in school healthcare. Theoretical frame of this bachelor's thesis is qualitative. The findings are analysed with the usage of content analysis. The authors have narrowed the focus to children from the ages of 7 to 10 that are in grade 1 to 4 in primary school.

2 Theoretical framework

Eating disorders are most common mental health- related illnesses particularly among children reaching puberty. Two main types of eating disorders are anorexia nervosa and bulimia nervosa. In addition, about 2% of the population have experienced disordered eating behaviours that have not completely met the criteria diagnosis of actual ED. (THL 2009.) In Finland and in many other countries school healthcare plays a key role in detecting and preventing eating disorders among children during compulsory education years. Children visit the school nurse annually and studies have shown that many children that are being currently treated for ED have had contact with school healthcare prior (Laukkanen et al. 2003). Early identification and treatment of eating disorders in children are tremendously important. Studies have shown that, the duration of the disorder prior to start of treatment ultimately has an effect to the prognosis. The intent is to avoid delays in treatment, which can lead to serious physical, psychological and social disadvantages that impair the individuals' health in adulthood

and ultimately reduce life expectancy (Hautala et al. 2006). The recommendations of the ministry of social affairs & health includes the importance of early detection of children's eating disorders in the school healthcare settings. (STM 2004.)

2.1 Key concepts

The key concepts chosen for this thesis are the following, children, school healthcare, eating disorders & identification.

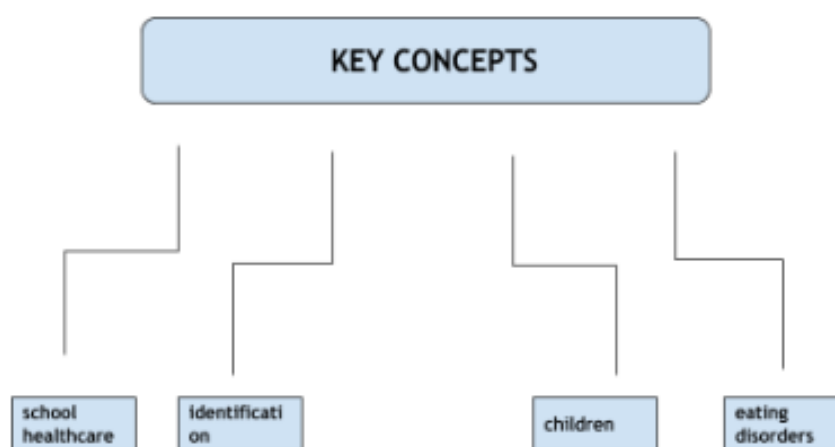


Figure 1: Key concepts

2.2 School healthcare in Finland

School healthcare in Finland is targeted to all school children and their families. This is free of charge, that originally derives from the law, which is included to the school services. It also works as a preventive primary health care measure that is provided for children during school days (THL 2018.) All primary health needs of students are covered mainly within school health care. Aspects included are clearly stated in the law, which are the following:

- Promotion of healthy and safe school environment for all, as well as necessary follow ups
- Monitoring and promoting students' growth, health and overall well-being
- Providing educational support for parents and legal guardians of the students
- Student's oral health care

- Early identification of children in need of special support or in need of further examination. In addition, if the student has an underlying diagnosed illness, care and guidance related to that will be provided during school days.
- Necessary examinations for the diagnosis of the student will be carried out or arranged by the school health care. (Terveydenhuoltolaki 1326/2010.)

The annual health check-ups identify among other things; growth and development of the child, various screenings will be done and possible abnormalities in the child's development will be identified. Due to the screenings and the health check-ups, the healthcare staff can identify children who require closer monitoring due to underlying illnesses or are at high risk. Screening aims to detect children whose development is not of age or have learning disabilities and children who do not get enough support from their family (Haaranen et al. 2015, 376-377.) School health care staff is combined of public health care nurses and general physicians. These professionals have a huge role on early identification of children's problems and in the provision of support, whether they are physical, psychological or based on other individual need. The school health care services include annual health checks, which three of them are more extensive. (THL 2014.)

The treatment approaches of eating disorders vary in Finland. The mutual caring aspect implemented is based on individuality. When there's a concern about a child's eating behaviour, the school nurse makes an assessment and consults the school doctor. The parents of the child will be involved during this process. Ultimately, if there's a concern of the child's psychiatric wellbeing, a referral to children psychiatric outpatient clinic will be made. After consultation with multi-professional groups, a treatment plan will be done. The children psychiatric outpatient clinic of HUS treats children 6-12-years old with eating disorders and disordered eating behaviours (HUS 2017).

2.3 Identification of eating disorders in the school healthcare

The professionals involved in the implementation of school health care are essential factors of early detection of students' problems and are in key position in the provision of support (Hakulinen et al. 2012). Students will visit the public health nurse at least once a year for health check-ups and more frequently if necessary. During the students 1st, 5th- and 8th year, the health check-ups will be more extensive involving both the nurse and the school doctor. In addition, during the extensive health check-ups, the whole family's wellbeing is assessed, and the parents are also invited to the appointment. Co-operation will be done with school professionals by taking their perspectives into consideration, including the teacher's assessment of the child's coping in the school (STM 2018.) Parents or the legal guardians of

the child will be informed and invited to the extensive health check-ups during parents' meetings held at school. The public health nurse will contact them privately as well. During the invitation to participate, great emphasis will be put on the importance of parents' presence and how it affects the outcome of the assessment of the student's wellbeing (Hakulinen et al. 2012). Parental participation during health check-ups is highly recommended but voluntary. In cases of omission, the public health nurse needs to find out the reasons for it. It is also known that children and their families lack of participation to the check-ups have increased need of support.

Identification as early as possible, early intervention and treating it accordingly can shorten the illness and improve the prognosis. Aiming to correct the nutritional status of the child, providing informational guidance, and by therapeutic approach are the cornerstones of treatment. It is also important to start supporting family members immediately during the start of treatment (Käypä hoito 2014.)

As mentioned in the previous section, primary health care services for children during their school years is provided by the school health care. The municipality must provide school health care services to students in primary education institutions located in their area (Terveydenhuoltolaki 1326/2010). The role of primary health care is to identify eating disorders, examine the patient somatically and to treat milder disorders. Somatic examination entails, gathering patient information i.e. allergies, substance abuse, underlying conditions etc. In addition, if there's history of eating disorders in the family, the child's eating & exercise patterns will be assessed, and the growth curves are essential information for being able to formulate a care plan (Käypä hoito 2015.) The possibility of eating disorder must be actively investigated during the children's school years. SCOFF - screening tool for eating disorder is a well-suited tool used, especially in primary and secondary schools. The screening tool was developed in England in the late 1990s, with the aim to find individuals with eating disorder in primary health care. (Morgan et al. 2000).

According to the Current Care Guidelines (2014) eating disorders should be treated primarily in outpatient care. Hospitalization is only needed in the most difficult stages.

Diagnosing eating disorders especially in children is tremendously difficult, due to atypical symptoms. Only a fraction of people with eating disorders end up being treated (Rissanen 2001).

3 Children & the prevalence and causes of eating disorders

Eating disorders and disordered eating behaviour among children are many kinds, with different degree of severity and often presents itself atypical in their symptoms & manifestations. Anorexia nervosa or bulimia affects about 2% of the population. Eating disorders in children are relatively rare, but the prevalence increases upon entering adolescence (HUS 2017.) In today's world, the idea of beauty is so distorted that even children are being affected by it. The media and other social platforms projects images of unrealistic views of beauty, which leads it to the fundamental root causes of anxiety associated to eating in children (Moilanen et al. 2004; Keski-Rahkonen et al. 2001). The increase of early childhood eating disorder problems in children between 7-12 years, has been estimated to have grown from 20-40% in recent years. (Tamminen 2017; Järvenpää 2007.) The anxiety caused by fast paced changes in society of how people should look make children incapable of adapting to those changes. Body dissatisfaction and eating disorder represent a serious mental health problem for children and youth everywhere. The dissatisfaction image of themselves cause children to have unrealistic expectations of how they should look, which in turn leads to the development of eating disorder & disordered eating behaviour. (Keski- Rahkonen et al. 2001; Stice & Shaw 2002).

Eating disorder have one of the highest mortality rates of any psychiatric disorder, and can cause long term medical complications, like growth retardment, menstrual dysfunction and osteopenia (Sagone et al. 2013). Recent studies have revealed that, the body image and eating dysfunction are more frequent in girls than in boys. The hereditary or biological aspect of eating disorders has also been studied proving, that children with parents or siblings affected by the disorder are seven times more likely to develop the disorder at some point. In addition, children diagnosed with insulin-dependent diabetes mellitus, depression anxiety or other mental illnesses are at risk of developing ED. (Keski-Rahkonen 2001; Smith 2018; Moore & Bulik 2007; Bearman et al. 2006.)

According to Keski-Rahkonen et al. (2001) most of the children suffering from eating disorder have unstable regulation of serotonin, a chemical that regulates eating and feeling satisfied and therefore an increase in serotonin lead to or transmit the pursuit of perfection, obsession and food restriction. Reduction of this chemical would alleviate or reduce the symptoms but at the same time the child would feel sleepier, depressed and have mood swings as the weight decreases. Sociocultural factors like family and peer relationships are also attributed to eating disorders and disordered eating in children. It has long been recognized that peer relationships are important to the social, emotional and cognitive development in children during the transition from childhood into adolescence. A good peer relationship permeates

adaption and wellbeing of their development and psychological health (Lawler & Nixon 2011; Pederson et al.; Sullivan 1953).

3.1 Eating disorders & disordered eating behaviour among children

Eating disorders are complex mental illnesses, that cause clinical disturbances of eating behaviours and attitudes, which therefore causes severe psychological and physiological problems. It generally involves self-critical, negative thoughts and feelings about body weight, food and eating habits that disrupts normal body function and daily activities. Eating disorders are considered major diseases as they are the most prevailing modern public health problems in children, female adolescents, and young adults. (Courbasson et al. 2012) As a result, ED sufferers' family members are faced with prejudice and myths in the societies where they live in. This has stimulated researchers to do countless of researches in the last two decades with the help of political support in providing the funds for research, treatment and prevention. Between 1999-2006 research done for eating disorders in children under 12 years of age increased by 119%. Identification of the cause mechanisms helps to understand why certain people develop the disorder while others don't. With this, the researchers hope to succeed in reducing the stigma associated to mental disorder (Striegel- Moore et al. 2005; Latzer et al. n.d; Ekern 2018; Eating Disorders Hope 2014.)

The exact cause of eating disorder is still unknown, however recent studies show that they are caused by environmental, genetic or biological, physiological, and social factors e.g. culture-, peer- or social related pressure. Eating disorders have become more common in western countries over the last few decades. It is not known whether this is due to how easily different illness are detected these days or the widespread laxity. Eating disorders are most common in girls 10-15% more than boys and young women but the incidence of EDs are also increasing among boys. (Keski- Rahkonen 2010.) There are often many factors behind eating disorders, like change in life, stress or pressure. In young people, eating disorders are often associated with psychological and physical growth. Symptoms of ED among children between 7-10 are different than the adults, making the diagnosis more complicated and sometimes can be missed. Eating disorders are particularly dangerous in young children, as they can escalate quickly and cause permanent stunt growth and development. They can be difficult to diagnose as children's body weight and nutrition requirements vary due to growth spurts. ED is ranked among the 10 leading causes of disabilities in young children, while anorexia nervosa is the leading cause of death among patients with mental disorders. (Sullivan 1995; Millar et al. 2005.) No one can predict who's going to get an eating disorder, but there are some protective factors. These factors include healthy eating habits, adoptive attitude towards the

body and size, positive self-esteem and good self-esteem as well as good social support. Encouragement and support for children and young people can make self-esteem positive and can thus prevent eating disorders. Parents, schools and the media have a central role to play in this matter.

3.2 Definitions of eating disorders

Anorexia nervosa, compulsive eating & binge eating are the most common eating disorders among children. Bulimia is also reported to have increased 40% in 9 years old children in the past decades and 82% of these children's families are sometimes or often on diet, making the children feel the need to diet as well. According to researchers one out of five children diagnosed with ED have had history of early feeding problem like either being "picky or fussy with foods. In addition, most likely these children have someone in their family suffering from the disorder (Ekern 2018; Syömishäiriöliitto n.d; THL 2018.) Anorexia nervosa is an eating disorder that is characterized by weight loss or lack of appropriate weight gain to maintain an appropriate body weight for height, weight and stature in children. The Word Anorexia Nervosa means, "loss of appetite from a nervous source". However, the disorder has nothing to do with loss of appetite, since Individuals affected by the disorder want to lose weight because they see themselves as fat although they might be underweight. (Suokas & Rissanen 2007; Keski-Rahkonen et al. 2010; Käypähoito 2009.)

Anorectic children have a distorted image of themselves and feel like having lost control over their lives, controlling their eating pattern is a way to get back the control over their lives. This type of ED is more prevalent in females and often the sufferers are perfectionist and successful in school and are competitive minded. (Suokas & Rissanen 2007; Keski-Rahkonen et al. 2010; Käypähoito 2009.) In children, it may start with depression, which cause the child to change the eating habits, perhaps being fussy and picky and gradually reducing the amount of food intake. Often, the anorectic diet consists of eliminating caloric and fatty substances by substituting them with vegetables and fruits. Eating only little amount of these until they eventually starve themselves totally. Typically, anorectic child will start to isolate themselves from others as they notice their significant weight loss. Due to isolation, the thought revolves more around food, and the desire to lose weight. (Koistinen et al. 2004; Keski-Rahkonen et al. 2010.) Also, they often feel lonely and will consume fatigue by excessively working themselves out leaving little time to sleep to maximize weight consumption. Continuous malnutrition in turn causes the bones to brittle. The mental function and physical growth reduce, depression and compulsive thinking of food sets in, followed by withdrawal, anxiety and insomnia. It most commonly disturbs the menstruation hormonal balance and cycle in girls. (Mannerheimin Lastensuojeluliitto 2017; Keski-Rahkonen et al. 2010.)

BN or BED involves eating a large amount of food within a short period of time, which leads to feeling loss of control and, the sense of not being able to stop from eating. It compensates the behaviour by force vomiting, misusing laxative and diuretics, fasting and excessive exercise. This circle leads to feelings of shame, guilt and disgust until the behaviour becomes more compulsive and uncontrollable overtime. BN sufferers usually don't talk about their problems, because they feel ashamed of the situation and regard it as their own secret. (Luoto 2005, 12-13.) The loss of control leads to obsession, constant thoughts about eating or not eating, weight loss, dieting and body image revolves around the individuals' mind. People suffering from BN can have weight fluctuating, they might be slightly underweight or remain in the normal weight range. (National Eating Disorders Collaboration 2012; Keski-Rahkonen et al. 2010, 17.)

When it comes to the prognosis of ED, according to Current Care Guidelines (2015), 50-70% of AN patient recover fully somatically. However, 20-30% still have symptoms, while 10-20% of the illness becomes chronic. In BED, the statistics show that around 45-55% recover fully. Disordered eating behaviour is difficult to detect and has similar symptoms as of diagnostic eating disorders i.e. AN & BN. These symptoms are food restriction, binge eating, purging, anxiety about foods, inflexible meal times or low self-esteem on body weight. (Psychology Today 2014.) The symptoms of disordered eating behaviour are less common and less severe but must be taken seriously though, its symptoms may appear to be less severe. A person with DEB could later develop eating disorder, if not taken seriously. Most people with DEB are diagnosed with eating disorder not otherwise specified because they do not meet the criteria of AN and BN. (Academy of Nutrition and Dietetics 2018.)

AN, BN, BED & ED not otherwise specified are the four main diagnoses of eating disorder. According to the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM- IV), eating disorders that are firstly diagnosed in infancy, early childhood or adolescence are grouped as feeding and eating disorders under avoidant or restrictive food intake disorder. (Psych Central 2013; American Psychiatric Association 2013.) Having disordered eating behaviour has a negative impact on person's ability to concentrate i.e. school or work, restricts one's social life from activities that involves food and affects their coping skills (Psychology Today 2014). The lack of understanding the severity of disordered eating behaviour has a greater risk on the individual's health such as bone loss, obesity, electrolyte and fluid imbalance, increased anxiety, low heart rate and blood pressure (Academy of Nutrition and Dietetics 2018). Disordered eating behaviour can be treated with the support of psychotherapy to help the individual understand the relationship with their body and the psychological issues that contributes to the disorder. A nutritionist will offer counselling and a non-diet food and exercise interventions. Early treatment on disordered eating behaviours will help prevent it from progressing to eating disorder (Academy of Nutrition and Dietetics 2018; Psychology Today 2014.)

4 Purpose, Aim & Research Questions

The purpose is to describe how children's eating disorders & disordered eating behaviours are identified in school healthcare. The aim is to produce recent knowledge related to identification of eating disorders for school healthcare nurses & other school professionals. The aim corresponds to both research questions stated down below.

Research questions:

1. How do school nurses identify students who are at risk of developing eating disorders?
2. What are the challenges school nurses face, that are related to the identification of eating disorders?

5 Methodology

The thesis was carried out as a literature review, according to the initial request from the working life representative. Literature review is regarded as an effective tool for deepening information on issues that has been studied prior. Literature review as a method also forms a theoretical background which, aims to show how the matter has been previously studied. It is highly important to establish and keep in mind the set aims and purpose of the study, when writing a literature review (Coughlan et al. 2013, 2-3).

The principle of literature review is to search for existing literature in the specific area of nursing and integrate its main results. According to Oliver (2012, 22-23) the existence of earlier research is a prerequisite for the proper implementation of literature review and, it also enables one to perceive the current situation of research data available. Based on different researches that have been conducted in this special area of nursing, we can determine how much research has already been done and where it is lacking. According to Aveyard (2007) literature review is the comprehensive study and analysis of literature related to a specific topic. It also aims to synthesize the existing literature of the topic and therefore, produces recent information for the readers that can be found from one individual paper. This is highly beneficial for many, especially for the healthcare professionals, that don't have time to go to multiple sources for information retrieval. As for our aim being, to produce recent knowledge of the studied area, this research method is the most appropriate for it. One of the first steps to take in this process, is to identify research question of the studied phenomenon, which we have above and search answers for them.

The authors analysed the findings by using qualitative content analysis to gather answers regarding the research question formed previously. Content analysis is generally used in research method in qualitative data, to analyse different materials and to summarize them. It has three main aspects, which are data collection, understanding the data and deciding which branch to use. It's a way to organize and describe the phenomenon being studied. Therefore, it aims to build models that represent the studied phenomenon in a condensed form. The analysis results are described in categories and concepts related to the phenomenon being studied (Tuomi & Sarajärvi 2002). Qualitative content analysis can be divided into two branches, which are deductive & inductive. (Elo & Kyngäs 2008.) The aim of the data analysis is to obtain answers to the research questions and produce knowledge about the studied phenomenon based on the data. The authors used the inductive approach, which means concepts derived from the data. The main goal of this is to generate new knowledge related to this nursing phenomenon. There's not enough previous knowledge about the phenomenon or then the knowledge is fragmented, therefore inductive approach is suggested (Lauri & Kyngäs 2005). Deductive approach in the other hand is used, when the structure of the analysis implemented is based on previous knowledge and the aim of the study is theory testing or re-testing the existing data in a different context (Kyngäs & Vanhanen 1999). However, both inductive & deductive approaches have similar preparation phases, which are preparation, organizing & reporting.

The authors goal was to analyse the articles by following a systematic & objective approach. The analysis process had three major stages, that are reduction of material, clustering (=grouping) of material & abstraction of material (Tuomi & Sarajärvi 2002). During the first stage the aim was to read through all the material and then reduce the parts, that didn't answer to the research questions (Tuomi & Sarajärvi 2018, 108-112). The set research questions worked as the "red string", that guided the authors during this period. Only the relevant information that answered to the research questions were focused on. Concretely this was implemented by the authors using two different markers, one for each research question. By going through the material, the authors transferred the corresponding manifestations to an empty document in written form. After this initial phase of coding, the next stage was to cluster the material by searching for similarities or differences between them. After the authors had familiarized themselves with the articles, they were able to formulate sub-, upper & main categories of the main findings of the research. During this stage, the authors went through the articles multiple times to make sure that anything relevant wasn't overlooked. The subcategories were formulated in a way that the authors searched similarities between the manifestations found from the articles. From the subcategories, the authors generated main categories. According to Elo & Kyngäs (2008) the purpose of inductive content analysis is to combine concepts and get answers to the research questions of the study.

5.1 Research Method

A qualitative data approach was used with the intent to provide deeper insight into the identification of ED among children in school health care. Therefore, by diving deep into the problem, most current research information found on the subject were retrieved and analysed. This leaves room to develop new ideas or hypothesis, while providing the needed knowledge to help the school healthcare professionals with early identification of eating disorders in children. The data was retrieved according to the criteria established in (Table 1). The databases used were the ones students have access to, which were mainly PubMed, Laurea Finna, ProQuest Central, FINNA & EBSCOhost. These databases are highly certified and well-known search engines for evidence-based journals, academic research articles & books. The data collection phase started by searching relevant articles, that answered to the research questions. In (Table 1), the main search words used are the following:

DATABASE	SEARCH WORDS	DATA RETRIEVAL (=Acc. to our data retrieval criteria)	SEARCH RESULTS	CHOSEN BASED ON TITLE	CHOSEN BASED ON ABSTRACT	CHOSEN BASED ON FULL-TEXT	ACCEPTED
FINNA	"Eating disorders" OR bulimia OR anorexia OR "binge eating" AND child* OR "school healthcare" OR school*	Master's thesis, progradu, scholar journal.	16	10	6	4	3
MEDIC	"eating disorders" OR bulimia OR anorexia OR "binge eating" AND child* OR	Master's thesis, progradu (email)	24	9	5	1	1

	"school health care" OR school*						
CINAHL	"Eating disorders" OR bulimia OR anorexia OR disordered eating behavior AND school health nurse AND children	Academic Journals	10	4	2	1	1
PRO-QUEST	"Eating disorders" OR bulimia Or anorexia OR disordered eating behavior AND school health nurse AND children	Academic journals, dissertations	28	8	1	0	0
							TOTAL (n=5)

Table 1: Article research database

5.2 Data retrieval criteria

The data collection happened according to the inclusion & exclusion criteria established in advance. All the potential articles needed for analysing had to meet the established criteria. After the initial phase of information retrieval, the findings were reviewed critically based on the title to see, whether the content was suitable for the study. The unqualified articles were disregarded. The title of articles that matched the set research aim & questions and the abstract were then reviewed. It's important to keep in mind the set research aim & questions during data retrieval, because that will influence the outcome of the study (Elo & Kyngäs 2008). Finally, when the articles passed the limitation criteria they were read thoroughly and

assessed carefully by the authors. This didn't yet confirm that the article will be chosen. The research questions acted as the "red string" guiding the authors through the data collection process and in the end only articles that met the research questions were chosen.

The authors ended up choosing 5 articles for analysis that answered to the set research questions. From (Table 2), data matrix illustrates the origin of the articles, background information, what methodology was used and the main results of the studies. After acquiring the material for this thesis, the inclusion criteria were to focus on the scientific research articles with full text to retrieve in depth information and report with accuracy, while giving the proper honour to the original researchers. In addition, non-scientific articles & bachelor's thesis were excluded to avoid reporting wrong and non-documented evidenced based information, duplication of material or plagiarism. The focus was to retrieve the most recent knowledge related to that specific age group. This led to the inclusion of articles & books dealing with the duties of school health care nurses in Finland as well from the international perspective. The authors decided upon using reading materials published within the timeframe of 2010-2018. It helped the authors to get the most recent and accurate information on children's eating disorders, whereby excluding all those published before the year 2010. The choice of articles was exclusively focused on those relevant to the research question and topic, therefore focusing only to those discussing children under 11 years old. Hence, excluding the ones that were not relevant to the research topic that discussed about adolescents and adults. Below is a table (Fig. 3) that displays what was included and excluded:

<u>INCLUSION CRITERIA</u>	<u>EXCLUSION CRITERIA</u>
- Scientific research articles with full text	- Non-scientific articles, Bachelor's thesis
- Articles published between 2010-2018	- Articles published before 2010
- Articles discussing children under 11-years-old	-Articles discussing adolescence and adult
- Qualitative data	- Quantitative data
- Duties of school healthcare nurses in Finland and international	- Duplicated literature
- Articles, that are relevant to the research question and topic	- Articles, that are not relevant to the research question and topic

Figure 3: Inclusion & exclusion criteria

6 Results

Detailed results of the study are presented in the order of the research questions.

The first research question set for this study is the following: *How do school nurses identify students who are at risk of developing eating disorders?*

We have identified 4 upper categories that answer to the research question.

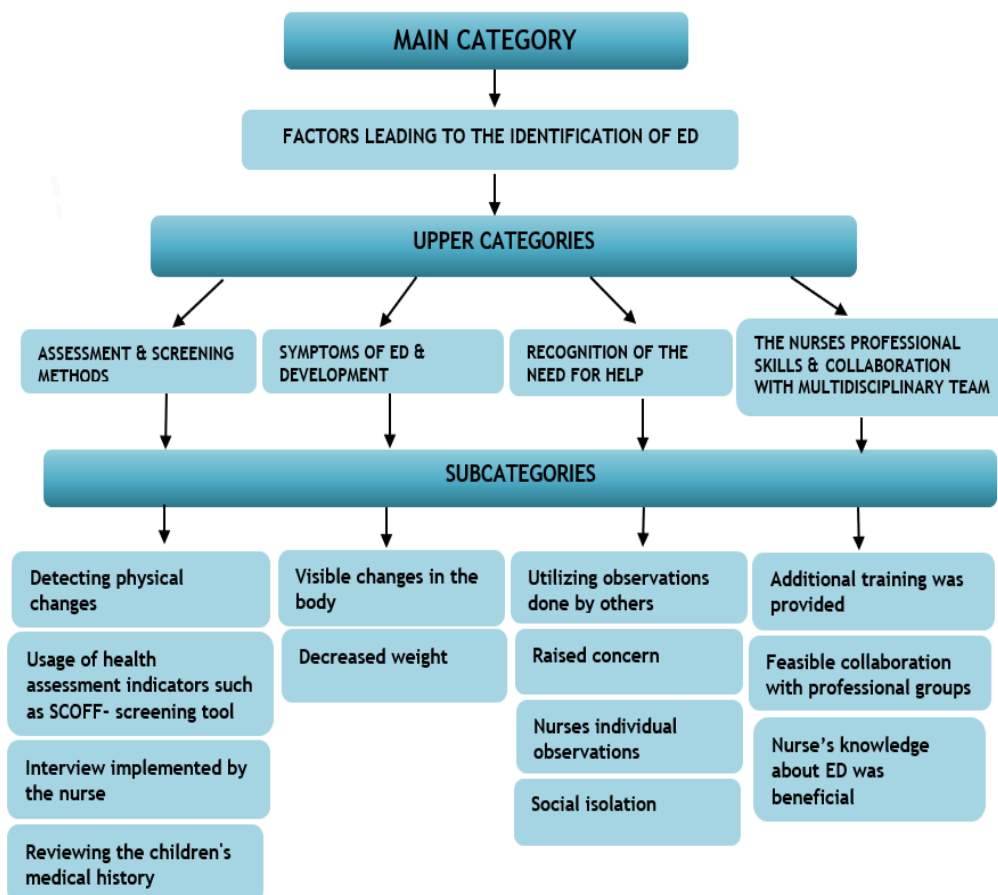


Figure 4: How do school nurses identify students who are at risk of developing eating disorders?

6.1 Assessment & screening methods

Eating disorders in children has rapidly increased over the years, which could lead to life-threatening medical risks or hospitalization, if left untreated. (Käypähoito 2014.) Early recognition of eating disorder in children is vital as it prevents treatment delays and improves prognosis. (Käypähoito 2015.) When a concern was raised about a child's health in the school settings the school nurse was the first to be contacted. Public school nurses were able to

identify eating disorders during student's regular health check-ups and interaction with the student. When there was a doubt for a possible existing ED during the assessment period, the student was monitored closely for 1-2 weeks.

The SCOFF screening tool (Fig 5), worked as an aid to assess the risk factors of eating disorder in children, when concerns were raised. Other assessment indicators such as surveys were used in the extensive health check-ups. Asking problems related to weight were also used to identify eating disorders in children. The third section of the SCOFF questionnaire was not entirely applicable with children who were still growing because of change in growth. Nonetheless, SCOFF questionnaire is a reliable and valid screening instrument used to assess eating disorders. (Suokas 2015.)

"SCOFF screening form was commonly used during health checkups and sometimes done orally when needed."

<i>School & health care SCOFF questionnaire for eating disorder</i>
<i>1) Do you make yourself sick because you feel uncomfortably full?</i>
<i>2) Do you worry you have lost control over how much you eat?</i>
<i>3) Have you recently lost more than 6 kgs' in the last three months?</i>
<i>4) Do you believe yourself to be fat when others say you are too thin?</i>
<i>5) Would you say that food dominates your life?</i>

(Figure 5: SCOFF-Questionnaire, Käypähoitosuositus 2017)

During the screening, school nurses assessed physical changes by measuring the student's weight, height and took their baseline measurements. The nurse should continuously assess for any growth impairment and compare them against appropriate growth charts. Changes related to those are easier to identify visually, because nutritional insufficiency can be seen as a drop in either height or weight percentiles rather than actual weight loss. (Kynsilehto et al. 2018.) Students were asked about their eating patterns and how they felt about their body image. The nurses also made use of the students' medical history for previous eating related problems. Acquiring a collateral history from the parents could be helpful for identifying any abnormal eating behavior of the child (Suokas 2015).

It's important for the nurse to build a trust & confidential relationship with the child, without feeling judged about their eating behavior. This will encourage the child to be more comfortable in discussing their symptoms with the nurse (Kynsilehto et al. 2018; Funari 2013). Nurses should not only focus on the normal ways of identification but also, deviate to assessing the student's nutrition insufficiency drop in height or weight percentiles (Rosen 2010).

6.2 Symptoms of ED & development

The earlier eating disorder is detected the better chances for the child to recover. That being so, it's very important to know the warning signs. The warning signs may not be easy to identify as it varies individually. Despite the differences with the symptoms, EDs share roots that depends on several factors like environment, genetics, life experiences and medical history. Emotional, physical and behavioral signs of eating disorders were drastic weight loss, overweight, avoidance of certain food types, changes in food preferences, binge eating, social withdrawal, isolation from friends, throwing food away secretly, continuous denial of hunger and frequent changes in weight. In addition, the child may suffer from dizziness, fatigue and dry skin & mouth. (Kynsilehto et al. 2018; Ylikotila 2015)

The disturbance of hormonal activity in girls was considered as one of the major signs of ED. Having concerns about body shape and the changing appearance was due to puberty. School nurses paid attention to the signs and symptoms during the screenings. Discussing about nutrition and physical activity helps nurses to identify the symptoms of eating disorders (Kynsilehto et al. 2018). Weight loss were the most obvious sign to notice during health check-ups. A decrease mood and isolation from friends were signs the school teachers identified. The teachers brought up the current issues, such as some students refusing to eat anything or even trying to throw their food away. The sudden behavior changes of the child, their unwillingness to eat, hide and hoard food detected possibility of eating disorder (Funari 2013).

6.3 Recognition of the need for help

Early identification and intervention of eating disorders & disordered eating behaviour are the basis of prevention. This leads to the authors significant findings, which is "raised concern". (Kynsilehto et al. 2018.) The nurses that had working life experiences emphasized on the importance of trusting individual clinical assessment done during the health checkups. This was regarded as a major asset, that could possibly lead to identification.

“The nurses felt, that having “raised concerns” about the child helped to identify ED.”

“Due to having “raised concerns” about the child, the nurse had the responsibility to assess the child’s physical, social & mental health.” (Kynsilehto et al. 2018.)

While the school nurses are the ones to identify possibility of eating disorders within the children in addition, parents, friends, teachers and other school professionals could be of great help with identifying ED (Kynsilehto et al. 2018). When the parents noticed changes in their children's eating behavior, they contacted the school nurse about their concern. In some situations, the friends of the child notified their teacher and expressed their concerns. This made the teachers and nurses very observant on such students. Through the teachers own observations during school exercises or lunch time they contacted the school nurse about abnormalities in the child’s eating habits or appearance.

Ylikotila (2015) emphasized on the fact that a child, with an eating disorder would create excuses to avoid eating by spreading the food along the edges of the dish. The child may even start isolating themselves from their schoolmates and stop participating in social activities (Ylikotila 2015). Due to parents, teachers and friends reaching out to report about the child’s eating behavior made it easier for the school nurses to identify eating disorders. Engaging the child in a conversation about their home and school life or any problems they may be facing was equally important. The goal is to establish good & trusting environment for the child, which influences the quality of the treatment (Ylikotila 2015).

6.4 The nurses’ professional skills & multidisciplinary team

Usually, school nurses are the primary entry for students with eating problems and are responsible for initiating a base for identifying eating disorders. The school nurse was responsible for providing a therapeutic relationship with the child. While interacting with the child, the nurse must show empathy, trust, respect and most importantly care & interest. If possible, the nurse must check the child’s medical history and ask questions related to their eating problems. Having a good understanding of psychological & behavioral symptoms in younger children will help the nurse during assessment phase. (Kynsilehto et al. 2018.) This was a way of possessing professional nursing skills to accurately identify ED in children, as the symptoms is presented differently in everyone. Some nurses felt they have enough knowledge of identifying eating disorders in children based on their work experience in the field while, others felt they needed more evidence-based training on eating disorders.

“Knowledge of ED was self-taught”

“Work experience and additional training on ED for the school nurses helped with identification” (Kynsilehto et al. 2018).

The need for multidisciplinary team collaboration on eating disorders is very vital. Concerns were raised during the interviews with the school nurses about the importance of involving the school physician, psychiatrist, teachers and nutritionist. A clear role of each multidisciplinary team and a joint meeting would ensure an easy and safe care for the children. Funari (2013) claimed that a broader support was arranged with the multidisciplinary team for children who needed more follow-ups, when they fell in the eating disorders risk. Nurses and multidisciplinary team members needed to have good communication skills that will create a safe environment for the child & the parent. The school nurses also collaborated with the school teachers and the kitchen staff to monitor the eating behavior of the students.

Second research question is the following, *what are the challenges school nurses face related to the identification of eating disorders?*

Similarly, to the first research question, we have identified 3 upper categories that answer to the research question.

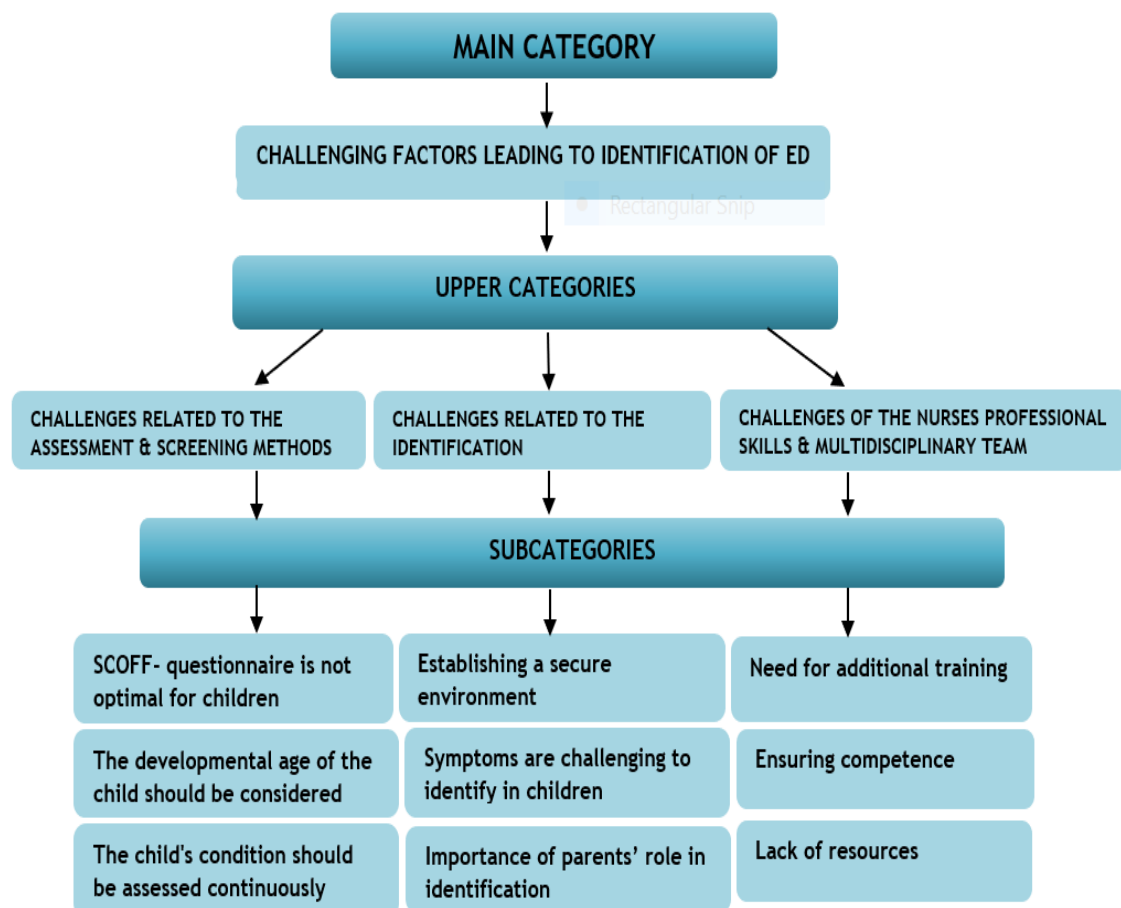


Figure 6: What are the challenges school nurses face related to the identification of eating disorders?

6.5 Challenges related to the assessment & screening methods

Early identification is important and fundamental to reducing the complications of ED in children related to bone growth and organs formation and development (Suokas 2015). The working methods of the school health nurse varied from health examinations, health screening to identifying the changes of weight, height & other primary physical measures and reviewed them with standardized growth charts. The SCOFF questionnaire was not entirely applicable to the target age group of the study, due to the third question (Fig 5), not being suitable for children (Suokas 2015). However, having theoretical knowledge alone and providing information to the children about their health wasn't enough. Thus, the school nurses need to possess the skills necessary for early identification. (Suokas 2015; Ylikotila 2015).

School nurses and other healthcare professionals thought that the children with ED symptoms were more likely to have comorbid psychological symptoms like depression, obsessive-compulsive disorder or other anxiety disorders and less likely to have binge or purge behaviors and therefore made it difficult to attribute the symptoms exclusively to ED and not psychological. (Rosen 2010.)

Other challenges lie in the fact, that not all children met the diagnostic & statistical manual of mental disorders fifth edition (DSM-IV-TR) criteria, that facilitates clinicians' diagnosis for AN and BN. This was because they did not articulate body image dissatisfaction, nor their inadequate nutrition was manifested by growth failure than weight loss. In absence of this criteria health care professionals with less skills in their profession found it challenging to make diagnoses and therefore, failed to identify the problem. As stated by Rosen (2010), although laboratory findings may be normal even in a prolonged state of starvation, lack of competency in identifying ED during the initial assessment and evaluation makes it difficult to make early diagnosis of the disorder in children. Most laboratory results are normal even in patients with ED and normal lab results doesn't exclude serious illness or medical instabilities thus lack of proper laboratory assessment makes it hard to identify & diagnose the disorder. (Rosen 2010.)

6.6 Challenges related to the identification

Identification usually happened during health checkups, in which the nurse, teachers, parents and friends detected physical changes of ED, that raised concern. One of the prevalent symptoms in identifying ED was weight loss, however children didn't always have weight loss as evident as it would be in a normal case, so this made the identification challenging. Nurses also expressed how hard it is to identify the symptoms in children. The challenge laid in being able to determine whether a child has an eating problem, or they are just being a normal fussy

child. Since most of the children suffering from symptoms of ED have also comorbid psychological problems and might be on prescribed medication, that might cause side effects. This can impair their appetite in turn and make it challenging to confirm their diagnosis. (Rosen 2010.)

School nurses felt it was extremely complicated to identify eating disorders in children despite the warning signs versus other mental health disorders. The main challenge was with the identification of eating disorder, early intervention and creating an active care relationship. Due to this, the delay between the onset of symptoms to the diagnosis were long. The nurse should always assess the possibility of an eating disorder, if the child suffers from continuous somatic symptoms, such as abdomen pain or other unexplained symptoms. In this case, the nurse should guide the discussion towards the child's eating- and exercise habits & assess the mental and overall wellbeing. (Kynsilehto et al. 2018.)

"The school nurses felt, that bringing up the issue of ED among children was seen challenging, due to the illness being multidimensional." (Kynsilehto et al. 2018.)

As this is a sensitive but highly important topic, which its probability is constantly rising. Referring to its sensitivity, the nurses felt that one of the most challenging factors while discussing about eating disorders, was to establish a secure environment. An environment where the child would feel comfortable and safe to share their feelings. For some of the children, having their parents with them during the discussions helped. In addition, the nurses highlighted the importance of bringing up the topic among every child. This would act as a preventive measure, that would create awareness, which would ease the discussion & possible issues related to it in the future. (Rosen 2010.)

6.7 Challenges of the nurse's professional skills & multidisciplinary team

Most of the time, children did not necessarily talk about ED, but the nurses skillfully brought up the subject (Funari 2013). The child would deny or downplay the symptoms, while other times weight issues were also seen difficult to discuss about. Nurses felt, that bringing up the issue of ED among children was seen challenging, due to the illness being multidimensional.

"...somehow getting a sense of confidence in the conversation that the child would understand, that I am here for you and you can tell me in peace..."
(Kynsilehto et al. 2018).

The nurses also expressed their concern in the lack of resources in terms of additional training and the adequacy of reception visits, which played a huge role in the treatment of ED.

Nurses saw that their lack of knowledge on the matter was due to not receiving enough training and knowledge during their studies, which would have supported their practice. Therefore, they felt the need for more evidence-based training on ED, aiding & support methods. Even short training courses provided by pediatricians and ED associations were regarded as good and important. (Kynsilehto et al. 2018.)

Teachers for special needs children recognized, that it is common for special needs children to have challenges in trying new food, which leads to poorly eating and might be considered as an eating problem. In view to this problem, school nurses are quite unsure on whether schools should teach about eating disorders even though they nurse themselves have talked to the children about it. (Ylikotila 2015.)

Nurses and teachers felt that some parents are aware of their children's eating problems but were ignorant or in denial of the severity of the problem. The multidisciplinary team also sense that the genesis of the ED is the pressure from the children's home and, the problem was being undermined and hidden. In cases like this the challenge is to create good and confidential relationship with the child, as many are reluctant to cooperate and reveal their real problems and symptoms. These symptoms are further investigated to find out the real cause. (Rosen 2010.)

Once Identification of the disorder is made, early intervention is important to prevent deterioration of the situation. However, cooperation protocols were often considered far too insufficient. The services of a nutritionist and other support-services were not always available. (Rosen 2010; Kynsilehto et. al 2018.)

7 Discussion

The purpose of the study was to describe how children's eating disorders and disordered eating behavior is identified in the school healthcare. The study was implemented as a literature review by analyzing 5 different scientific articles, that was retrieved from different databases. The aim being to produce recent knowledge related to identification of eating disorders for school nurses & for other school professionals. It proceeded through by finding answers to the research questions which were; *"How do school nurses identify students who are at risk of developing eating disorders?"* and *"What are the challenges related to the identification of eating disorders?"*.

School nurses are in key position to identify eating disorders during student's health check-ups. When a concern is raised about the child's health at home or in the school settings, the

nurse is responsible of the initial assessment. Although, the child may not meet the criteria of eating disorders during the assessment, the nurse's own intuition will aid to further assess the child. According to Rovithis et al. (2005) intuition can be regarded as collaboration of knowledge & involvement, which is influenced by the nurses' character, the surroundings and the willingness to use intuition. Having the establishment of intuition will aid in identifying the nurses' individual competence that consists of work experience, knowledge, ethics, additional training and emotions.

During the screening the school nurse assesses physical changes by measuring the students' weight, height, takes the baseline measurements and vitals. A continuous assessment should be done for any growth impairment and compare them against appropriate growth charts. The SCOFF screening tool worked as an aid, which was used to assess the risk factors of eating disorder in children, when concerns were raised. The school nurses paid attention to the signs and symptoms during the screening. The nurses were able to identify the symptoms of eating disorder during discussion about nutrition and physical activity. The study reinforced the importance of the need for multidisciplinary team collaboration on eating disorders, especially the involvement of school professionals.

Other findings included, the SCOFF questionnaire not being entirely applicable to the target group of the study, due to the third question not being suitable for children (Suokas 2015). However, having theoretical knowledge alone and providing information to the children about their health isn't enough. Thus, the school nurses need to possess the skills necessary for early identification. Even though, laboratory findings may be normal in a prolonged state of starvation, lack of competency in identifying ED during the initial assessment and evaluation makes it difficult to make early diagnosis of the disorder in children. Some other major challenges revolved around lack of resources for the school healthcare, which was seen by the limited visitation hours and the nurses not receiving enough training. In addition, the services of a nutritionist and other support-services were not always available, therefore cooperation protocols were considered far too insufficient.

7.1 Ethical considerations

Ethical issues consideration is essential in a research. Choosing a valid topic that conforms to the ethical laws and regulation and its consistency is an important factor in research. Trustworthiness is an alternative way for researchers to convince their readers and themselves to notice their findings (Lincoln & Guba 1985). In a research, the role of the researchers should be clearly defined with ethically plausible methods. Ethics also consisted of consultation be-

tween colleagues, research counselor and being open to criticism. It also means being responsible of the time management and respecting the set times while at the same time assessing the risks and benefits of the target groups. But most especially adding useful knowledge to nursing science. (Vehviläinen- Julkunen 1997, 32-33.) In this thesis the authors focused on a sensitive and delicate topic which is progressively relevant today. ED generally raises inevitable emotions, which makes the topic sensitive especially for small children. That being so, children find it challenging to talk about their struggle and fear being wrongfully judged. This may lead to delay in access to treatment and impairs treatment prognosis. Every child should be encountered individually from a holistic perspective.

Ethical guidelines recommended by the Finnish Adversary Board on research Integrity, was followed to increase the validity and reliability of the study. The ethical considerations and trustworthiness of this thesis is preceded by good ethical conduct, which includes precision, avoiding plagiarism, fabrication of data results and maintain honesty throughout the entire process (TENK 2012). The chosen material has been carefully analyzed and evaluated to produce accurate, honest & reliable results by avoiding biases.

Respect of the researchers have been ensured accordingly, when using information from the various articles and books. During the data collection and analysis stages, the authors shared responsibilities and discussed the data of each article in the group. The authors aimed to utilize the obtained material as accurately as possible and without omitting any essential information. From the data matrix, 3 out of the 5 articles analyzed were in Finnish. The authors are fluent in Finnish, so there weren't any issues of language barrier. Hence, the authors can assure, that the results of the study have been reported carefully & without embellishment. Other factor, that increases the validity & trustworthiness of the study is, that the research methods are well described in advance.

7.2 Trustworthiness

Trustworthiness is an alternative way for researchers to convince their readers and themselves to notice their findings. In research trustworthiness is usually marked as limitations (Lincoln & Guba 1985). The validity of this thesis is assessed by following the criteria of trustworthiness suggested by Lincoln & Guba (1985), which are credibility, dependability, reflexivity and transferability. Credibility describes the truthiness of the data by analysing different perspectives of the same phenomenon; dependability validates the data collected as consistent; reflexivity requires focusing on participant's view instead of the researchers'; and

transferability describes the generalizability of the findings of the study in other for other researchers to use in a similar setting. (Nowell et al. 2017). These categories have been considered throughout the entire process of this thesis.

Since this thesis was carried out in a group of three it increases the validity of the study through trust & honesty and decreases level of biases. During the data analysis stages, the authors shared responsibilities and discussed the data of each article among themselves. Every step of the study was done together for it to be systematic. The guidance and support of the tutors from the planning phase to the writing of the thesis have been considered.

The limitations of the study are those attributed to outline the impact of the interpretation from the findings of the research. They are the limitations on generalizability, implementations for practice, or utilization of the findings. Therefore, it's the way in which the results are chosen to design the study, the method used to establish internal & external validity or the result of unanticipated challenges that emerges during the study. (American Journal of Health Education 2004, 66-67.)

This thesis is an important part of the authors professional development. The authors personal objectives were to familiarize with the identification of children's eating disorder & the challenges involved. One of the limitations was the age group of the research target, narrowing it to be between the ages of 7-10. The sample size to work on is very small therefore, generalizing the findings might be limited. However, the results are in line with the previous studies that have been examined, and the authors were able to fulfill the goal set to achieve. Though the chosen articles had consistent results based on the target age group and research questions, there was lack of evidence-based research on school aged children's eating disorders. This presented challenges for the authors regarding inclusion and exclusion criteria and data results. As the authors are inexperienced in conducting research, the approach to the identification, critique and combining different literature may not have been as comprehensive as an experienced researcher. (Aveyard 2014, 144.)

8 Conclusion

Previous researches have demonstrated how common eating disorders occur in adolescents and adults and its associated health complications, if not diagnosed early. Younger children, specifically below 10 years of age, also suffer from eating disorders like anorexia nervosa, bulimia nervosa, binge eating or disordered eating behavior. This has unfortunately not received the deserved attention it needs, to create enough awareness for the children, their families,

school healthcare, and other professionals in the school settings. Very few evidence-based researches have been done on this issue.

This study was to discover how school nurses identify eating disorders and disordered eating behaviors among children between the ages of 7-10 and challenges the school healthcare face when identifying ED. Children do not necessarily talk about their eating problems with anyone mostly because they're either unaware of the severity of it or then, they just don't feel comfortable talking to anyone about it. Early identification and intervention of eating disorders & disordered eating behavior are the basis of prevention. The authors meaningful finding was the nurse's individual intuition when assessing the child, which was "raised concern". The nurses that had working experience emphasized on the importance of trusting individual clinical assessment done during the health checkups. This is considered a major asset that could possibly lead to identification.

This study revealed that the symptoms of eating disorders varies from person to person and cannot be diagnosed by just the physical looks of the child. The efficacy of the SCOFF questionnaire may not be entirely reliable as a screening tool because, the third question of the questionnaire is not applicable for children below 10 years. The services of a nutritionist and other supporters were not always readily available. The effect on lack of resources initiated to provide a continuous education for the school nurses was revealed in the study. This suggests that diagnosable ED and its related disordered eating behavior has a huge influence on the challenges of school healthcare system.

8.1 Recommendations

There's room for improvement regarding the assessment, and the nursing professional skills needed to detect ED & disordered eating behavior in children. An additional training for school nurses should be reinforced by providing more financial support to the school healthcare. The school staff, parents and the children must also receive education on eating disorders & disordered eating behaviours.

Nurses should be able to have enough time and include the basis of holistic care, when interviewing children. The school nurses should be encouraged and utilize their nursing skills to aid school aged children, who are experiencing symptoms of eating disorders & disordered eating behaviors. School nurses should develop good communication skills with the multidisciplinary team members to help detect & manage the disorder and send referrals for continuous treatment. According to Kynsilehto et al. (2018) detecting ED in school aged children is challenging, therefore more emphasis should be put on preventive measures.

Future studies should focus on a more in-depth research on the identification of ED in children below the age of 10 while also, improving the SCOFF questionnaire to suite younger children. There should be enough resources to train school nurses to update their knowledge on children's ED to prevent poor prognosis. The study was conducted by collecting data results from five research articles. Due to few studies done on children's eating disorders, the authors couldn't find enough information and statistics related to the research questions. Though the results of the thesis can be utilized in nursing settings, whether in school healthcare or in primary care, the feasibility of the findings cannot be generalized.

9 References

- Anna Keski-Rahkonen. 2004. Accessed 18.11.2018
<https://helda.helsinki.fi/bitstream/handle/10138/20318/genetica.pdf?sequence=1&isAllowed=y>
- American psychiatric association. DSM-5 and Diagnoses for Children. 2013.
Accessed 2.12.2018
https://www.psychiatry.org/.../Practice/DSM/APA_DSM-5-Diagnoses-for-Children.pdf
- American Academy of Pediatrics. 2019. Identification and management of Eating Disorders in Children and Adolescence. Accessed 24.2.2019
<http://pediatrics.aappublications.org/content/pediatrics/126/6/1240.full.pdf>
- Academy of nutrition and dietetics. 2018. What is disordered eating?
Accessed 1.9.2018
<https://www.eatright.org/health/diseases-and-conditions/eating-disorders/what-is-disordered-eating>.
- Aveyard Helen. 2014. Doing a Literature Review in Health and Social Care: A Practical Guide.
Accessed 2.11.2018
- Academy of Nutrition & Dietetics. 2018. Understanding eating disorders. Accessed 2.11.2018
<https://www.eatright.org/health/diseases-and-conditions/eating-disorders/understanding-eating-disorders>
- Bearman. No date. The skinny on body dissatisfaction. Accessed 20.2.2018
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1540456/>
- Bulik, C.M., Sullivan, P.F., Fear, J.L. & Pickering, A. 2002. Outcome of anorexia nervosa: Eating attitudes, personality and parental bonding. *International Journal of Eating Disorders*, 28(2), 139-147. Accessed 2.11.2018
- Charpentier, P. & Marttunen, M. 2001. Syömishäiriö vai ei? *Duodecim*. Accessed 28.1.2019
<https://www.duodecimlehti.fi/lehti/2001/8/duo92220>
- Coughlan, Cronin, Ryan. 2013. Doing a literature review in Nursing. Pages 2-3. Accessed 20.11.2018
https://www.academia.edu/6421131/Undertaking_a_literature_review_a_step-by-step_approach
- David, S. Rosen. 2010. Volume 126/ Issue 6. Accessed 15.11.2018
<http://pediatrics.aappublications.org/content/126/6/1240.full>
- British Psychological Society. 2014. Eating Disorders: Core Interventions in the Treatment and Management of Anorexia Nervosa, Bulimia Nervosa and Related Eating Disorders. Accessed 21.2.2018
<https://www.ncbi.nlm.nih.gov/books/NBK49330/>

Eating Disorder Hope. 2014. Adolescents and Eating Disorder Risk: What Does Research Show? Accessed 16.11.2018

<https://www.eatingdisorderhope.com/blog/adolescents-and-eating-disorder-risk-what-does-research-show>

Eating Disorder Hope. 2014. Eating disorders In children 12 and under.

Accessed 16.10.2018

<https://www.eatingdisorderhope.com/treatment-for-eating-disorders/family-role/eatingdisorders-in-children-12-and-under>

Rovithis M., Stavropoulou A., Katsigaraki N., Sotiropoulos M., Sfigkaki D., Linardakis M. & Rikos N. 2015. Evaluation of Intuition Levels in Nursing Staff. Accessed 20.3.2019

<http://www.hsj.gr/medicine/evaluation-of-intuition-levels-in-nursing-staff.php?aid=6531>

Elo, S. & Kyngäs, H. 2008. The qualitative content analysis process. Accessed 14.12.2018

<https://www.ncbi.nlm.nih.gov/pubmed/18352969>

Finlex. 2010. Terveysdenhuoltolaki 1326. Accessed 19.11.2018

<https://www.finlex.fi/fi/laki/ajantasa/2010/20101326>

Haarala, P., Honkanen, H., Mellin, O. & Tervaskanto-Mäentausta, T. 2015. Terveystenhoitajan osaaminen, 25-28. Accessed 19.9.2018

HUS, Syömishäiriöiden lasten avohoidosta lupaavia tuloksia. 2017.

Accessed 1.12.2018

<https://www.hus.fi/hus-tietoa/ uutishuone/Sivut/Syömishäiriöisten-lasten-avohoidosta-lupaavia-tuloksia.aspx>

Hautala, L., Liuksila, P-R., Räihä, H. & Saarijärvi, S. 2006. Nuoren häiriintyneen syömis- käyttäytymisen riskitekijät. Accessed 4.12.2018

<https://www.terveyskirjasto.fi/xmedia/duo/duo95964.pdf>

Jaana Suokas. 2015. Syömishäiriöiden varhainen tunnistaminen perusterveydenhuollossa. Accessed 3.1.2019

Jacquelyn Ekern. 2018. What is an eating disorder? Accessed 20.11.2018

<https://www.eatingdisorderhope.com/information/eating-disorder>

John F. Morgan, Fiona Reid, J. Hubert Lacey. 2000. The SCOFF questionnaire

<http://www.kaypahoito.fi/web/kh/suositukset/suositus?id=hoi50101#s1>

Käypä hoito. 2015. Syömishäiriöt. Accessed 13.3.2019

<http://www.kaypahoito.fi/web/kh/suositukset/suositus?id=kht00002>

Laimio, A. & Karnell, S. 2010. Vertaistoiminta - kokemuksellista vuorovaikutusta. Teoksessa Laatikainen, T. (Toim.) Vertaistoiminta kannattaa. Asumispalvelusäätiö ASPA. Www-dokumentti. Accessed 12.2.2019

http://intra.aspa.fi/files/2817/Vertaistoiminta_kannattaa.pdf

Lastenmielenterveystalo. No date. Syömishäiriö. Accessed 3.1.2019

<https://www.mielenterveystalo.fi/lapset/ammattilaisille/hairiot/syomishairiot/Pages/syomishairiot.aspx>

Laukkanen, E. Pylkänen, K. Hartikainen, B. Luotoniemi, M. 2003. A new priority in psychiatry: focused services for adolescents. Nord J Psychiatry. Syömishäiriöt. Accessed 17.1.2019

Lauri S. & Kyngäs H. 2005. Developing Nursing Theories (Finnish: Hoitotieteen Teorian Kehittäminen). Accessed 2.3.2019

Lawler, M. & Nixon, E. 2011. Body dissatisfaction Among Adolescent Boys and Girls, The Effect of Body Mass Peer Appearance Culture and Internalization of Appearance ideals. Assessed 18.10.2018

https://www.researchgate.net/publication/40895949_Body_Dissatisfaction_Among_Adolescent_Boys_and_Girls_The_Effects_of_Body_Mass_Peer_Appearance_Culture_and_Internalization_of_Appearance_Ideals

Leslie, K. & Stuart, B. 2018. Clinical handbook of complex and atypical eating disorders. Accessed 20.11.2018

Lorelli S. Nowell, Jill M. Norris, Deborah E. White, and Nancy J. Moules. 2017. Thematic Analysis: Striving to Meet the Trustworthiness Criteria. Accessed 2.11.2018

https://www.researchgate.net/publication/320188032_Thematic_Analysis_Striving_to_Meet_the_Trustworthiness_Criteria

Luoto E., Salmi T., Laine O. 2005. Kun lapsella on syömishäiriö, p 12-13. Accessed 20.3.2019

Lincoln, YS. & Guba, EG. 1985. Naturalistic inquiry. Accessed 19.11.2018

<https://books.google.fi/books>

Margaret Funari. 2013. Detecting symptoms, early intervention, and preventative education. Accessed 3.2.2019

Markkula center of applied ethics. 2010. What is ethics? Accessed 14.12.2018
<https://www.scu.edu/ethics/ethics-resources/ethical-decision-making/what-is-ethics/>

Mannerheimin Lastenliitto. 2017. Syömishäiriöt. Accessed 4.12.2018
<https://www.mll.fi/vanhemmille/tukea-perheen-huoliin-ja-kriiseihin/nuorella-on-mielenterveyden-hairioita/syomishairiot/>

Moilanen, I., Räsänen, E., Tamminen, T., Almqvist, F., Piha, J. & Komulainen, K. 2004. Lasten- ja nuorisopsykiatria. 3, uudistettu painos. Helsinki: Kustannus Oy Duodecim. Accessed 14.11.2018

National Institute of Environmental Health Sciences. 2015. What is ethics in Research and Why is it important? Accessed 14.9.2018
<https://www.niehs.nih.gov/research/resources/bioethics/whatis/index.cfm>

Succeeding with your literature review

Oliver Paul. 2012, 22-23.: a handbook for students. Accessed 15.11.2018

Psych Central, DSM-5 Changes: Feeding & Eating Disorders, 2013. Accessed 20.12.2018
<https://pro.psychcentral.com/dsm-5-changes-feeding-eating-disorders/>

Psychology today. Disorders eating or eating disorder: What's the difference? Accessed 15.10.2018
<https://www.psychologytoday.com/us/blog/contemporary-psychoanalysis-in-action/201402/disordered-eating-or-eating-disorder-what-s-the>

Psycom. 2018. Eating Disorders in Children 12 and Under: Learn the Warning Signs. No date. Accessed 16.11.2018
<https://www.psycom.net/eating-disorders-in-children>

Pietilä A-M., Hakulinen T., Hirvonen E., Koponen P., Salminen E-M. & Sirola K. 2002. Terveiden edistäminen - uusiutuvat työmenetelmät. Juva: WS Bookwell Oy. Accessed 11.12.2018

Pederson et al. Sociocultural pressure as a mediator of eating disorder symptoms in non-clinical Australian sample. Assessed 18.11.2018
<https://www.tandfonline.com/doi/full/10.1080/23311908.2018.1523347>

Rachel Bryant-Waugh, DPhil Laura Markham, BSc (Hons) Richard E. Kreipe, B. Timothy Walsh. Feeding and Eating Disorders in Childhood, 2010. Accessed 6.11.2018
<https://onlinelibrary.wiley.com/doi/pdf/10.1002/eat.20795>

Rosen, D. S. 2010, 126, 1240-1253. Clinical report-Identification and management of eating disorders in children and adolescents. Accessed 9.11.2018
<http://pediatrics.aappublications.org/content/126/6/1240.full.html>

Rissanen, A. 2001; 117: 859-60. Syömishäiriöt - kulttuurimme kasvava ongelma? Assessed 22.11.2018

Sagone, E. De Caroli, M, E. 2013. Anti-fat or Anti-thin Attitudes Towards Peers? Assessed 18.10.2018
https://ac.els-cdn.com/S1877042813032771/1-s2.0-S1877042813032771-main.pdf?_tid=39051311-1d14-4b70-a117-5cfa26d81ea3&acdnat=1543266789_f55dfbbf-deb201f03521b574a0a0fd0e

Suokas, J. & Rissanen, A. 2017. Laihuushäiriö - anorexia nervosa. Psykiatria. Lääkärikirja Duodecim. Accessed 16.11.2018
[//www.oppiportti.fi/op/pkr01301/do](http://www.oppiportti.fi/op/pkr01301/do)

STM. 2018. Kouluterveydenhuolto. Accessed 9.11.2018
<https://stm.fi/kouluterveydenhoito>

Syömishäiriöliitto. No date. Tietoa syömishäiriöstä. Accessed 27.11.2018
<https://syomishairioliitto.fi/tietoa-syomishairioista>

Striegel-Moore & Bulik, 2007 Risk Factors for Eating Disorders. Accessed 17.10.2018
https://www.researchgate.net/publication/6359966_Risk_Factors_for_Eating_Disorders

Sullivan. 1953. An interpersonal Approach to Attachment and Change. Accessed 18.10.2018
<https://psycnet.apa.org/record/2009-02347-015>

Stice E. 2002. Risk and maintenance factors for eating pathology: A meta-analytic review. 128, 825-848. Assessed 17.11.2018

Stice, E. & Agras, W.S. 1998. Predicting onset and cessation of bulimic behaviours during adolescence: A longitudinal grouping analysis, behaviour therapy, p 257-276.

THL. 2013. Opas:25, page 61. Marttunen. Nuorten mielenterveyshäiriöt - Opas nuorten parissa työskenteleville aikuisille. Accessed 2.10.2018

THL. 2009. Mielenterveys ja päihdeongelmien varhainen tunnistaminen. Accessed 14.11.2018
<https://thl.fi/documents/10531/104889/Opas%202009%205.pdf>

THL. 2018. Opiskeluhoito. Accessed 20.10.2018
<https://thl.fi/fi/web/lapset-nuoret-ja-perheet/peruspalvelut/opiskeluhoito>

TENK. 2012. Responsible conduct of research and procedures for handling allegations of misconduct in Finland. Accessed 23.12.2018
https://www.tenk.fi/sites/tenk.fi/files/HTK_ohje_2012.pdf

Tuomi, J. & Sarajärvi, A. 2002. Laadullinen tutkimus ja sisällönanalyysi. Accessed 12.12.2018
https://www.adlibris.com/fi/kirja/laadullinen-tutkimus-ja-sisallanalyysi-9789513199531?ab_fifi_newproductpage=true&utm_expid=.62rFsjhQT-apGhKkMckBWA.1&utm_referrer=https%3A%2F%2Fwww.google.com%2F

Vehviläinen-Julkunen. 1997, 26-34. Hoitotieteellisen tutkimuksen etiikka. Teoksessa M. Pannonen & K. Vehviläinen-Julkunen Hoitotieteen tutkimusmetodiikka. Accessed 13.10. 2018

Käypähoitosuositus. 2017. Työkaluja syömishäiriön tunnistamiseen. Accessed 23.12.2018
<http://www.kaypahoito.fi/web/kh/potilaalle/suositus?id=nix02552&suositusid=hoi50101>

Tamminen et al. 2000. Syömättömät ja ylensyövät lapset.
<https://www.mv.helsinki.fi/home/palojoki/OPETUS/Syventava%20rav%20kasv/,lasten%20syomishairiot%20SLL442000.pdf>

Tamminen T. Häiriöiden luokittelusta. Kirjassa: Räsänen E, Moilanen I, Tamminen T, Almqvist F, toim. Lasten- ja nuorisopsykiatria. 1. painos. Helsinki: Kustannus Oy Duodecim 1996; 97-101. Accessed 8.12.2018

Ylikotila Anna. 2015. Luokanopettajien, erityisopettajien sekä kouluterveydenhoitajien käsitteitä alakouluikäisten lasten syömishäiriöistä. Accessed 21.12.2018
<http://jultika.oulu.fi/files/nbnfioulu-201601151049.pdf>

Yle. 2017. Alakouluikäisten lasten vakavat syömishäiriöt ovat harvinaisia- nirsoilusta ei useimmiten kannata huolestua. Accessed 13.9.2018
<https://yle.fi/uutiset/3-9619521>

Appendix 1: Data Matrix

NAME OF THE ARTICLE	AUTHOR, YEAR, COUNTRY	PURPOSE OF THE STUDY	PARTICIPANTS (n=)	DATA COLLECTION METHOD	DATA ANALYSIS METHOD	MAIN RESULTS
Terveydenhoitajien kokemuksia syömishäiriöiden varhaisesta puuttumisesta ja hoidosta koulu- ja opiskeluterveydenhuollossa	Kynsi-lehto Titta, Kääriäinen Maria, Ruotsalainen Heidi, 2018, Finland	To describe public health nurses' experiences of the early intervention and care of eating disorders in school health services. The study brings new knowledge about early intervention in eating disorders in school and student health services.	13.	Thematic interview	Content analysis	The public health nurses described the early intervention of eating disorders as health checkups, where changes of growth was monitored, the SCOFF eating disorder screening questionnaire and other questionnaires were used and nutrition and physical activity were discussed. Eating disorders was found to be multidimensional and challenging. The knowledge provided by the study can be utilised in the work of school health nurses, education and in decision-making in health care.
Detecting Symptoms, Early Intervention, and Preventative Education	Margaret Funari, 2013, USA					

Luokanopettajien, erityisopettajien sekä kouluterveydenhoitajien käsityksiä alakouluikäisten lasten syömishäiriöistä	Anna Ylikotila, 2015, Finland	To find out what kind of experiences and views primary teachers, special education teachers and school nurses have about primary school-aged children's eating disorders and eating problems.	33.	A qualitative study using a phenomenographic approach.	Responses to an inquiry, data-driven content analysis.	<p>According to the participants there are lots of problems relating to eating in primary schools. The problems are manifested in a variety of symptoms.</p> <p>Based on this study, it is impossible to tell whether a particular case is about an eating disorder, eating problem or pickiness typical of children. The results do confirm previous theories of increased eating problems among children.</p>
Syömishäiriöiden varhainen tunnistaminen perusterveydenhuollossa	Jaana Suokas, 2015, Finland	To describe the importance of recognizing and diagnosing eating disorders early in primary care.	-	Review	-	Early detection and management may contribute to better outcomes. SCOFF-questionnaire is not suitable for children who are still growing.
Clinical Report Identification and Management of Eating Disorders in Children and Adolescents	Rosen DS, 2010, USA.	Clinical report	-	-	Review	It's highly important for pediatricians to be familiar with early detection & suitable management of these disorders. Growth in the prevalence of anorexia nervosa and bulimia nervosa & other disordered eating behaviour make

						the identification critically important.
--	--	--	--	--	--	--

Table 2: Data matrix

Appendix 2: Categorization

How do school nurses identify students who are at risk of developing eating disorders?

<u>MANIFESTATION</u> (Tiivistetyt ilmaisut)	<u>SUBCATEGORY</u> (Alaluokat)	<u>UPPER CATEGORY</u> (Yläluokka)	<u>MAIN CATEGORY</u> (Pääloukka)
<p>-Changes of the child's growth were identified during health checkups, with the usage of assessment indicators.</p> <p>-SCOFF screening form was commonly used during health checkups and sometimes done orally when needed.</p> <p>-By looking to the child's behavior and noticing sudden changes, such as unwillingness to eat or slow eating, hiding and hoarding food, obsession with weight loss and social withdrawal may be critical to identifying an eating disorder.</p> <p>-Nurses take the baseline, weight, height, blood pressure and other primary physical measures and review them with the student's history.</p> <p>-Obtaining collateral history from the parent may help identify abnormal eating attitudes or behaviours.</p> <p>-Noticing changes in the appearance of the child.</p>	<p>-Detecting physical changes.</p> <p>-Usage of health assessment indicators such as SCOFF-screening tool.</p> <p>-Interview implemented by the nurse.</p> <p>-Reviewing the children's medical history</p>	ASSESSMENT & SCREENING METHODS	FACTORS LEADING TO THE IDENTIFICATION OF ED

<p>-Identifying symptoms like dry skin, lips, weight gain, underweight, weight loss and fatigue.</p> <p>-Some children had abdomen problems and other vague symptoms.</p> <p>-Children controlled their nutrition to avoid weight gain.</p> <p>-Identifying atypical symptoms like mood decline, vomiting, compulsive movement and obsessive compulsive behaviour associated with eating habits.</p>	<p>-Visible changes in the body.</p> <p>-Decreased weight.</p>	<p>SYMPTOMS OF ED & DEVELOPMENT</p>	
<p>-Parents and friends findings facilitated the identification.</p> <p>-It's important for the nurse to engage the child in discussion related to their home and school life.</p> <p>-Nurses own individual observations during the health checkups were important.</p> <p>-The nurses felt, that having "raised concerns" about the child, helped to identify ED.</p> <p>-Due to having "raised concerns", the nurse has the responsibility to assess the child's physical, social & mental health.</p> <p>-Children may start isolating themselves from their school mates.</p> <p>-Observations received from the teachers facilitated the identification.</p> <p>-The nurse had the possibility to consult a nutritionist in cases of arise concern.</p>	<p>-Utilizing observations done by others.</p> <p>-Raised concern.</p> <p>-Nurses individual observations.</p> <p>-Social isolation.</p>	<p>RECOGNITION OF THE NEED FOR HELP</p>	

<p>-Parents were contacted with the permission of the child to get them involved in the process.</p>			
<p>-Work experience and additional education on ED for the school nurses helped with identification of ED.</p> <p>-Knowledge of ED was self-taught.</p> <p>-School nurses' collaboration with the, school psychologist, nutritionist, school curator or a psychiatric nurse provided broader support, if needed.</p>	<p>-Additional training was provided.</p> <p>-Collaboration with professional groups was feasible.</p> <p>-The nurses knowledge about ED was beneficial.</p>	<p>THE NURSES PROFESSIONAL SKILLS & COLLABORATION WITH MULTIDISCIPLINARY TEAM</p>	

Table 3: How do school nurses identify students who are at risk of developing eating disorders?

What are the challenges school nurses face related to the identification of eating disorders?

<u>MANIFESTATION</u> (Tiivistetyt ilmaisut)	<u>SUBCATEGORY</u> (Alaluokat)	<u>UPPER CATEGORY</u> (Yläluokka)	<u>MAIN CATEGORY</u> (Pääluokka)
<p>-SCOFF- questionnaire wasn't always suitable for children, therefore nurses needed to go through it orally or rely on their own observations.</p> <p>-Weight, height & BMI should be measured regularly and compared against appropriate growth charts for noticeable changes.</p> <p>-Determination of nutritional insufficiency is challenging to identify visually.</p>	<p>-SCOFF- questionnaire is not optimal for children.</p> <p>-The developmental age of the child should be considered.</p> <p>-The child's condition should be assessed continuously.</p>	<p>CHALLENGES RELATED TO ASSESSMENT & SCREENING METHODS</p>	<p>CHALLENGING FACTORS LEADING TO IDENTIFICATION OF ED</p>
<p>-The children didn't always have weight loss, which made the identifying and diagnosis challenging.</p> <p>-The school nurses felt there was lack of confidence in the children, when the issue of ED was brought up.</p> <p>-It's hard to identify whether the child has an eating problem or they're being a normal fussy child.</p> <p>-Laboratory findings may be normal even in a prolonged state of starvation.</p> <p>-Symptoms might appear as atypical abdomen pain or due to other unclear general somatic symptoms.</p> <p>-Children often try to hide their illness or downplay it.</p> <p>-Parent's may at times be unaware or in denial.</p>	<p>-Establishing a secure environment.</p> <p>-Symptoms are challenging to identify in children.</p> <p>-Importance of parents role in identification.</p>	<p>CHALLENGES RELATED TO THE IDENTIFICATION</p>	

<p>-Children may not always fully meet all the criteria needed for the diagnosis.</p>			
<p>-The nurses felt, that they needed more evidence-based training on ED, aiding & support methods. -Lack of resources in reception visits. -Cooperation protocols were considered far too insufficient. -The services of a nutritionist and other support-services were not always available.</p>	<p>-Need for additional training. -Ensuring competence. -Lack of resources.</p>	<p>CHALLENGES OF THE NURSE'S PROFESSIONAL SKILLS & COLLABORATION WITH MULTIDISCIPLINARY TEAM</p>	

Table 4: What are the challenges school nurses face related to the identification of eating disorders?