

Adolescent-Centered Pain Management in School When Adolescents Have Chronic Pain - A Qualitative Study

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Abstract

Chronic pain is common among Swedish adolescents, and stress is an independent factor in the onset and persistence of chronic pain. When Swedish school nurses conduct their health dialogs they have a unique opportunity to find adolescents with chronic pain. The aim of this study was to explore school nurses' and adolescents' experiences of factors that influence adolescent-centered pain management in school health care, when adolescents have chronic pain. The study context is schools in Sweden where primary health care is available through school nurses. A total of 15 school nurses and 15 adolescents participated in individual interviews, which were transcribed and analyzed by qualitative conventional content analysis. Bronfenbrenner's bioecological model was used to explain how these factors are directed at the individual or society. The results demonstrated eight different categories of factors that influenced the pain management. The categories focused mainly on the adolescents' micro- and mesosystems; few strategies were conducted on an exo- and macrosystem level. On the micro- and mesosystem levels, it was necessary to build trust to be able to influence the adolescents' behavior in the pain management. Pharmacological strategies were paracetamol and non-steroidal anti-inflammatory drugs; non-pharmacological strategies were physical activities and stress-reducing activities. Research and practice involving a more holistic perspective, studying the possibilities of both change at the organizational level and individual support for adolescents, are essential.

Keywords: adolescents, pain, school nursing practice

1. Introduction

Chronic pain is common among Swedish adolescents, and stress is an independent factor in the onset and persistence of chronic pain (Hjern, Alfvén, & Östberg, 2008). The study context is schools in Sweden where primary health care is available through school nurses. The work of school nurses is often inspired by person-centered care (PCC), which is based on the individuals' own narratives, and highlights that each adolescent is treated respectfully regardless of her/his resources (Leplege et al., 2007). The implementation of PCC for adolescents may differ from the use of PCC in adults. In this study, we used the World Health Organization's definition of adolescence, that is, from age 10 to 19 (WHO, 2014). The period of adolescence involves great physical, mental, and emotional changes (Michaud, Berg-Kelly, Macfarlane, & Benaroyo, 2010). Adolescents are on their way to becoming adults, but they are still developing their abilities to manage their everyday lives as grown-ups. Accordingly, when adolescents have the ability to decide their activities themselves, it is called taking the adolescent's perspective. Other decisions that need to be guided by an adult are called having an adolescent perspective. The two perspectives are qualitatively and theoretically different and are better seen as different ends on a continuum, solely from an adult's view of the adolescents to solely the perspective of the adolescents themselves (Nilsson et al., 2015). The move to adolescent-centered care is consistent with governmental policies and national reports in Sweden (Coyne, Hallström, & Söderbäck, 2016). This study is based on an adolescent-centered perspective, which emerges from these two dimensions, that is, having an adolescent perspective and taking the adolescent's perspective.

A model is used for the purpose of explaining pain management in accordance with an adolescent-centered perspective, that is, Bronfenbrenner's bioecological model (Bronfenbrenner, 1979). Bronfenbrenner's bioecological model is useful for describing not only the environment but also the interactions between the

adolescents and their surroundings. Bronfenbrenner's bioecological model is based on micro-, meso-, exo-, and macrosystems, more precisely, from the individual (microsystem) to the cultural norms of society (macrosystem; Nelson & Keith, 1990). Micro- and mesosystems exist in the adolescents' everyday lives and, thereby, affect their meetings with family, school, and peers. Exo- and macrosystems do not exist in the adolescents' everyday relations, but still affect them and their life situations, for example laws and strategies at community level (Bronfenbrenner, 1979). Bronfenbrenner's bioecological model implies that the adolescent is most influenced from the outside to the inside, that is, from the major culture through the exosystem and mesosystem to the microsystem, which is the developing person (Nelson & Keith, 1990). In addition, Bronfenbrenner's bioecological model focuses on both the person and the environment, and it specifies the mechanisms that may influence health (Grzywacz & Fuqua, 2000). The model can explain and describe the processes and interactions between the person and his/her context that influence functioning. These factors can present risks or opportunities at every level of the ecology model (van Niekerk & Tönsing, 2015). The rationale for this study is that all systems are necessary to maintain the functioning of adolescents with chronic pain. In this study, an individual level was added involving mainly strategies that focused on the individual adolescent.

Chronic pain is usually defined as any pain that lasts more than three months (Harstall & Ospina, 2003). Life stress is an independent factor in the onset and persistence of chronic pain (Generaal et al., 2016). Stress among adolescents can be mediated by several factors, such as high academic pressure, and is associated with lower physical and psychological well-being (Lemma et al., 2015). Stressors in school are associated with a higher frequency of persistent and recurrent pain in adolescents (Hjern et al., 2008). Negative emotional states in adolescents with headaches are associated with increased risk of persistent headache (Huguet et al., 2016). Headaches are common among Swedish 13-year-olds, that is, 23 percent of the girls and 12 percent of the boys reported that they had a headache more than once a week. Among 15-year-olds, 29 percent of the girls and 13 percent of the boys reported that they had a headache more than once a week. Stomach pain is also common among Swedish 13-year-olds, that is, 18 percent of the girls and 7 percent of the boys reported that they had stomach pain more than once a week. Among 15-year-olds, 22 percent of the girls and 9 percent of the boys reported that they had stomach pain more than once a week (Folkhälsomyndigheten, 2014).

Chronic pain in adolescents is a major cause of morbidity in society. Anxiety in adolescents with chronic pain has been shown to be negatively related to school attendance, avoidance, concentration, and getting on with schoolwork (Khan et al., 2015). The associated costs have been sparsely described, but most available data suggest that they may mirror the enormous costs associated with pain in adults. It is important to note that existing data on adolescents only involve adolescents who have visited a multidisciplinary tertiary care pain clinic (Groenewald & Palermo, 2015). There is a need to describe the situation of adolescents in other contexts, such as school health care.

Research has demonstrated that the quality of school nurses' practice is influenced by their ability to recognize the individual needs of each school, as well as having access to organizational mechanisms that provide support for their practice. Nurses must also possess sufficient knowledge and skills in order to provide person-centered care and strategies related to adolescent stress (Guzys, Kenny, & Bish, 2013).

School nurses in Sweden need to follow Swedish law, that is, Skollag (2010:800). According to this law, school nurses should work mainly preventively and with health promotion when they address the adolescent's needs (Socialstyrelsen, 2014). When Swedish school nurses conduct their health dialogs with all the adolescents in the school, they also have a unique opportunity to find adolescents with chronic pain. In the health dialog, the school nurse can show openness to the adolescents' own narratives and listen to their problems (Golsäter, Lingfors, Sidenvall, & Enskär, 2012). School nurses in Sweden also use a questionnaire that has been evaluated in research (Golsäter, Enskär, Lingfors, & Sidenvall, 2009). This questionnaire makes it easier to collect information from adolescents and aims to improve the quality of the health dialogs and catch the adolescents' issues. The questionnaire includes questions about pain. It is not mandatory but offered to all school children in Sweden (Golsäter et al., 2009; Golsäter et al., 2012).

The aim of this study was to investigate school nurses' and adolescents' experiences of factors that influence adolescent-centered pain management in school health care, when adolescents have chronic pain.

School nurses need to have a holistic approach when they meet adolescents with chronic pain (Forgeron & Stinson, 2014). A holistic approach includes improvisation and implementation of projects to create change for the individual adolescents as well as within their communities (Hanley & Fenton, 2013). The research question in this study is whether the school nurses' pain management strategies have a holistic approach.

2. Methods

2.1 Study Design

Qualitative studies that describe the management of adolescents' chronic pain in Swedish schools are sparse in the literature (Brobeck, Marklund, Haraldsson, & Berntsson, 2007). Accordingly, a qualitative design was chosen because the researchers' aim was to look for depth and understanding. The main purpose of a qualitative design is to see the world as it is seen by the respondents, without risking highlighting issues that are experienced as irrelevant by the respondents (Patton, 2001). Consequently, this study was qualitative descriptive in design.

2.2 Participants

2.2.1 School Nurses

School nurses in the western and northern parts of Sweden participated in a qualitative interview. The participants were recruited by an invitation letter. They contacted the researcher and were included consecutively until a variety of backgrounds and types of schools was achieved. There was variance in the school nurses' ages and academic levels, that is, diplomas, bachelor's degrees and master's degrees. There was also a variance of private schools and community schools. Some schools were in the city and others in rural areas, that is, a geographical variation between municipalities. Finally, there was a variance of secondary schools (for students aged 12-16) and high schools (for students aged 16-19). The school nurses represented 13 different schools (Table 1). The interviews were conducted from January to November 2015. Fifteen school nurses participated in the study, which used criterion sampling (Patton, 2001).

Table 1. Demographic data on school nurses

Gender (numbers)	
Women	15
Men	0
Age (years)	
Age range	42-63
Education (numbers)	
Senior community nurse	6
Pediatric nurse	6
School nurse	2
Other education	1
Working experience (years)	
Working as a school nurse	2-28
Working as a nurse	13-45
Type of school (numbers)	
High school (age 16-19)	5
Grades 6-9 (age 12-16)	10
Type of geographic area	
Rural area	7
City	8

2.2.2 Adolescents

Adolescents in five schools in the western and northern parts of Sweden participated in a qualitative interview. The inclusion criterion was that they had reported chronic pain to the school nurse, and they were recruited by an invitation letter. The adolescents contacted the researcher and were included consecutively. The interviews were conducted from January to November 2015. Adolescents who answered that they had had chronic pain during the last three months according to the definition of the International Association for the Study of Pain, that is, "Did you have pain episodes during the last three months that led to repeated visits to the school nurse?" (Harstall & Ospina, 2003), were invited to participate in the study. It was the adolescents' own experience of chronic pain that was the inclusion criterion. However, it became retrospectively clear that several of the adolescents had a diagnosis, such

as irritable bowel syndrome or fibromyalgia. Fifteen adolescents participated in the study (Table 2), which used criterion sampling (Patton, 2001). They filled in a questionnaire that evaluated the localization, frequency, and duration of the pain (Table 3).

Table 2. Demographic data on adolescents

Gender (numbers)		
	Girls	13
	Boys	2
Age (years)		
	Age range	14-19
Education (numbers)		
High school (age 16-19)		
	Nature	1
	Humanistic/Society	9
	Art/Music program	4
Grades 8-9 (age 14-16)		
		1
Type of geographic area (numbers)		
	Rural area	1
	Big city	14
Type of accommodation (numbers)		
	House	5
	Row house	2
	Apartment	8
Family (numbers)		
Parents		
	Living with two parents	7
	Switching between two parents	2
	Living with one parent	6
Siblings		
	No siblings	3
	One sibling	9
	Two siblings	1
	Three siblings	2

Table 3. Description of the adolescents' pain

		n
Most dominant pain localization	Head	7
	Stomach	4
	Neck	1
	Shoulders	1
	Whole body	1
	Wrist	1
Second most dominant pain localization	Head	4
	Neck	4
	Back	3
	Stomach	2
	Jaw	1
	No second pain	1
Frequency of most dominant pain	Continuous pain	5
	Several times per day	1
	Once per day	2
	Several times per week	4
	Several times per month	1
	Once per month	2
Duration of most dominant pain	Continuous pain	3
	Several days each time	3
	Several hours each time	7
	Approximately one hour each time	1
	Several minutes each time	1
Intensity of most dominant pain (1-10)	4-6	7
	7-10	8

2.3 Data Collection

Achieving the school nurse's and the adolescent's perspectives

The interviews were semi-structured with predetermined subjects and open questions that enabled narrative answers. The topics concerned resources and strategies that were available when the school nurse met the adolescent, such as in health dialogs and unscheduled visits. The guide was developed by the researchers and piloted in the first interviews with a school nurse and an adolescent. The data from these interviews were included in the results. The language in the interviews was adapted to the participants' age and maturity. The interviews were recorded using a digital voice recorder. The participants were individually interviewed by one of the two authors, that is, Stefan Nilsson or Per-Åke Rosvall.

All of the interviews in the city were conducted at the adolescents' school (n=14) and at the school nurses' workplace (n=8). The interviews with the school nurses in rural areas were sometimes conducted by telephone (n=3), and one interview was with an adolescent. The interviews lasted for approximately 0.5 to 1 hour.

2.4. Data Analysis

The interviews were processed by a qualitative conventional content analysis process (Hsieh & Shannon, 2005) inspired by Graneheim and Lundman, that is, the text was first divided into meaning units that were condensed. The condensed meaning units were then abstracted and grouped into codes (Graneheim & Lundman, 2004). All the codes were then grouped again into subcategories. These subcategories were abstracted in the next step of the

analysis into categories (Hsieh & Shannon, 2005). The first author completed this procedure supported by the other two. Thereafter, all three authors discussed the categories until consensus was obtained. The results were compared with the original data at each level of abstraction to guarantee that trustworthiness was achieved (Morse, 2015). In the final stage of the analysis process, each category was interpreted according to the systems in Bronfenbrenner's bioecological model (Bronfenbrenner, 1979). The first author sorted each category, and the second and third authors then revised the result according to the model. To achieve credibility, the authors compared and discussed this step of the analysis until consensus was reached (Morse, 2015).

2.5 Ethical considerations

Written and verbal information was provided to all the participants who gave their verbal and written consent. Adolescents under 15 years of age were also given verbal and written consent from their parents. The voluntary nature of the study was highlighted. The study was approved by the Regional Ethical Review Board (Reg. no.: 894-14).

3. Results

The results are based on an adolescent-centered perspective in which the nurses' and the adolescents' perspectives are necessary to obtain an understanding of factors that influence the school nurses' pain management. The results are presented in a specific order, that is, first the nurses' perspective is described by categories and then that of the adolescents. Finally, the results are described from a holistic perspective in which Bronfenbrenner's bioecological model is used to explain how these factors are directed at the individual or society.

3.1 The Adolescent Perspectives Based on the School Nurses' Perceptions of Factors That Influence Pain Management

The school nurses reported three categories of factors that were important. These categories highlight strategies that the school nurse used to manage adolescents' chronic pain.

Creating trust in conversations

The school nurse and the adolescent had to have trust in each other; otherwise it was impossible to gain an adolescent perspective. The adolescent will not try the actions that the school nurse has to offer without trust.

"I now prioritize the health dialogs ... try to capture these students and bring them back to me. Otherwise you lose their trust directly. You have to take the adolescent's story in the health dialog seriously." (School nurse (6) at a school for grades 6-9 in a rural area)

"Yes, it's very important that young people feel trust. They must know that you are, and they feel if you are, present in the conversation, I think." (A school nurse (2) at a high school in the city)

Giving analgesics to reduce pain

A factor that influenced the treatment was the ambivalent attitudes to drugs. The school nurses tried to avoid giving the adolescent drugs and, instead, often asked about lack of sleep and meal routines. However, the school nurses offered analgesics (that is, paracetamol or non-steroidal anti-inflammatory drugs) for the purpose of treating headache due to high academic stress.

"Most of the time we hand out pills if they have a headache." (A school nurse (1) at a high school in a rural area)

"I usually give ibuprofen or paracetamol, because it is better to keep children in school. They should not go home to bed." (A school nurse (7) at a high school in the city)

Offering strategies for social and school activities to reduce exclusion and stigmatization

School absenteeism was a factor that negatively influenced the adolescents' stress and chronic pain, and the school nurses wanted to include the adolescents in school activities to normalize the situation. Sometimes, the chronic pain was experienced with stigmatization by the adolescents themselves and by the people around them.

"It is very much about the stress and that they don't really feel well at school." (School nurse (5) at a school for grades 6-9 in a rural area)

"Because we notice that those with high absenteeism often have problems at school, and they will be recognized...as outsiders." (A school nurse (4) at a high school in the city)

An important factor that affected chronic pain was high academic stress, and the school nurses helped the adolescents to prioritize and plan the school activities. This strategy reduced the adolescents' stress and chronic pain, because they felt that they could manage school.

“They come to me because they are so stressed by the tests they have to take.” (School nurse (3) at a school for grades 6-9 in a rural area)

“But then it often comes down to learning difficulties. Maybe this is why they don’t feel good, and sometimes it is a matter of their brains learning in a different way.” (A school nurse (6) at a high school in the city)

3.2 The Adolescent’s Perspectives Based on the Adolescents’ Perceptions of Factors that Influence Pain Management

The adolescents described five categories of factors that the school nurse had used to reduce chronic pain.

Having a conversation that is built on trust

An important factor in the pain management was that the school nurse listened to the adolescent’s story. The school nurse should not have a direct solution to the problem. The adolescents did not appreciate being forced to speak with another professional just because their problems were labelled as ‘psychological’.

“But then I felt it was wrong to turn to the social worker because I don’t have such close contact with her, and I continue talking with the school nurse.” (Adolescent (2), 16 years, at a high school, Humanistic/Society program, in the city)

“Well, it was every time that I talked with her. I felt very safe with her.” (Adolescent (10), 18 years, at a high school, Art/Music program, in the city)

Offering strategies to increase physical activity

Physical activities can be an important factor in decreasing pain, and one way to guide the adolescents to physical activities was to give them access to a gym and to develop individual training programs.

“I got a membership to a private gym... so I do those exercises when I’m at the gym.” (Adolescent (7), 14 years, at a school for grades 6-9 in the city)

“It is thanks to X that I go to Friskis och Sveltis [a Swedish gym], and it’s thanks to her that I have got an E in the subject of Sports, that is, I passed. So she has had a huge impact...” (Adolescent (11), 19 years, at a high school, Art/Music program, in the city)

Offering strategies to reduce stress

Stress-reducing interventions, such as music, can be an important factor in reducing pain, and the possibility for the adolescents to get access to a resting room sometimes meant that they did not leave school, and after a while they could instead go back to the classroom.

“I usually listen to music. Music helps me a lot with everything, so it is the only thing I would say.” (Adolescent (6), 16 years, at a high school, Humanistic/Society program, in the city)

“I walk in here when I feel that ... it starts to hurt and then you can go in here and just lie down and take it easy and try to unplug it.” (Adolescent (8), 18 years, at a high school, Art/Music program, in the city)

Getting help with school structure and models of learning

High academic stress influenced pain, and the school nurses sometimes helped the adolescents to modify their school schedules and guided them to acquire structures for their learning. These strategies often improved the adolescents’ chances of coping with school.

“I know that the reason I’m stressed out is school, so then the school nurse helps me become less stressed.” (Adolescent (1), 18 years, at a high school, Humanistic/Society program, in the city)

“X helped me a lot ... you don’t need to do all the school work now, you can do some work at summer school, and she recommended me for summer school.” (Adolescent (11), 19 years, at a high school, Art/Music program, in the city)

Referring the responsibility to other professionals

An important factor in obtaining beneficial pain management was multi-professional treatment. These professionals could be physiotherapists, psychologists, or physicians who were specialists in pain management.

“Perhaps give the phone number, and then suggest a physiotherapist ... and that she makes an appointment or gives me the phone number and then I do it.” (Adolescent (4), 16 years, at a high school, Humanistic/Society program, in the city)

“She has helped me more than anyone else has been able to do. She got me a time to see the doctor. She has helped me to see the physical therapist; she has helped me with everything.” (Adolescent (9), 17 years, at a high school, Art/Music program, in the city)

3.3 Adolescent-Centered Perspectives

Bronfenbrenner’s bioecological model is used to explain how the factors of pain management are directed at the individual or society. A total of 30 participants reported eight categories of factors that were important to get an adolescent-centered perspective on the pain management of the adolescents’ chronic pain in school health care. Two categories were the same in the analysis of the school nurses’ and the adolescents’ interviews and are represented in this presentation as one category.

The factors were mainly described as conducted at a micro-/mesosystem level according to Bronfenbrenner’s bioecological model, which described the results from the individual (microsystem) to the society (macrosystem). Only a few of the activities focused on the exo-/macrosystem level, that is, organizations and laws. Accordingly, there was more focus on adapting the adolescent to the school than adapting the school to the adolescent. Few strategies seemed to focus on changing the organization of the school or changing the laws (Table 4).

Table 4. Factors that influence an adolescent-centered perspective according to the bioecological model of Bronfenbrenner

Individual/body	Giving analgesics to reduce pain Offering strategies to increase physical activity Offering strategies to reduce stress Getting help with school structure and models of learning
Micro-/mesosystems	Creating trust in conversations/Having a conversation that is built on trust Offering strategies for social and school activities to reduce exclusion and stigmatization
Exo-/macrosystems	Referring the responsibility to other professionals

4. Discussion

In this study, the focus was on an adolescent-centered perspective, and Bronfenbrenner’s bioecological model was used to evaluate whether the strategies focused on the individual level or society. This also shows, to some degree, whether the cause of the chronic pain is laid on the person or society. A main result was that the activities of pain management focused on the adolescents’ micro- and mesosystems, and few strategies were conducted on an exo- and macrosystem level.

On the micro- and mesosystem levels, building trust was necessary to be able to influence the adolescents’ behavior in the pain management. Similar trust issues have also been shown in other studies that have investigated the role of school nurses in Swedish schools. Trust was a main issue when school nurses met children with mental illness (Dina & Pajalic, 2014), as well as in health promotion for adolescent girls (M. Larsson, Björk, Ekebergh, & Sundler, 2014). It is important to listen to the adolescent’s story and not neglect her/him. It is also worth noting that idiopathic pain symptoms, and mostly abdominal pain, are associated with a risk of both self-harm and suicide attempts (Koenig et al., 2015). An Australian National Survey of Mental Health and Wellbeing showed that suicidality increased two to three times when people had chronic pain. Sixty-five percent of people who attempted suicide in the past 12 months had a history of chronic pain (Campbell, Darke, Bruno, & Degenhardt, 2015). One participant thought it was the trust of the school nurse that stopped her/him from pursuing harmful activities.

The adolescents in this study reported that they had achieved positive results by participating in physical activities. These physical activities were often arranged together with the school nurse who drew up an individual training schedule. The school nurse could also give the adolescents access to the gym, which could otherwise be an obstacle to them. Physical activities have been reported to lessen pain symptoms, which highlights the importance of encouraging this type of activity (Sollerhed, Andersson, & Ejlertsson, 2013). After an intervention with an exercise-based treatment, the adolescents increased their school attendance, and 62 percent reported no school absences (Holm, Ljungman, Åsenlöf, Linton, & Söderlund, 2016).

Stress-reducing interventions can be an important factor in relieving adolescents’ chronic pain. Stress-reducing interventions, such as yoga, are beneficial for adolescents with irritable bowel syndrome (Evans et al., 2014).

Mindfulness skills, including yoga, sitting meditation, body scans, loving-kindness meditation, and walking meditation, also demonstrated clinically significant improvement in symptoms for adolescents (Zernicke et al., 2013).

In this study, access to a relaxation room was essential for adolescents to be able to stay at school for the whole school day. Another study showed that children with greater physical disability reported fewer missed school days than children with headache or abdominal pain (Logan et al., 2013), which most adolescents in this study had. The economic costs of chronic pain also need to be taken into consideration. In Canada, the incremental cost of adolescents, 12-17 years, with chronic pain was \$ 956 (Hogan, Taddio, Katz, Shah, & Krahn, 2016).

The adolescents reported the importance of relaxation techniques. High academic stress was one factor that influenced the frequency of headaches. Chronic pain has also been a common condition in Chinese adolescents and was closely related to self-reported academic pressure (Zhang et al., 2015). Relaxation training has been shown to reduce the frequency of headaches in adolescents (B. Larsson, Carlsson, Fichtel, & Melin, 2005).

High academic stress was one of the main issues in this study, and in earlier research this has been associated with the demands of the surroundings (Wiklund, Malmgren-Olsson, Öhman, Bergström, & Fjellman-Wiklund, 2012). Other research has also confirmed that, for example, functional abdominal pain in adolescents can have an impact on various school activities, for instance, gym classes and after-school activities, such as afternoon group classes (Assa, Ish-Tov, Rinawi, & Shamir, 2015). The school nurses wanted to normalize the situation, and the school work can be improved when the intervention focuses on a return to functioning (Claar, Kaczynski, Minster, McDonald-Nolan, & LeBel, 2013).

Few of the factors of pain management were targeted at the exo- and macrosystem level. None of the activities in the pain management focused on changing the laws and the system of organizations in society, which had an impact on adolescents' persistent and recurrent pain. It would be beneficial to encourage the full participation of local communities in the health development process, with policymakers who act to promote a more resourceful approach to tackling health inequities (Morgan & Ziglio, 2007). These findings were expected on the basis that most of the school nurses' philosophies were inspired by PCC (Black, McConkey, Roberts, & Ferguson, 2010). PCC can be a beneficial solution for adolescents in the short term, but does not always solve the problems of laws and the organization at an institutional level. Sometimes, this leads to the school nurses trying to treat the symptoms, when the causes may be at the exo-/macrosystem level.

The results are limited to the context in which the data were collected, and it was therefore difficult to generalize differences between age and gender. Only female school nurses were interviewed; however, there are very few male school nurses. Despite this, it would have been an advantage to interview a male school nurse. There were also only two male adolescents in this study. Even if there are more girls than boys with persistent and recurrent pain, it would have been an advantage to have more boys in this study. Another limitation was that the school nurses came from 13 schools while the adolescents only came from five schools. Accordingly, the study should be repeated in other contexts to verify our results and to further develop the knowledge about this phenomenon.

5. Conclusion

The strategies for pain management mainly focused on the phenomena at the micro-/mesosystem level. The school nurses' conversations with the adolescents were beneficial, and these discussions were necessary for the individual adolescent to cope with the situation. It was important to listen to the individual adolescent's story. Few strategies focused on the exo-/macrosystem level. The participants seldom reported that they collaborated with the principal or teachers to reduce stress created within the school, that is, cooperation on the students' workload, examination stress, or bullying in relation to health.

Much of what seemed to affect pain was on a social and general school level, but few efforts were made to change this. Research and practice involving a more holistic perspective, studying the possibilities of both change at the organizational level and individual support for adolescents, are therefore seen as essential. For example, the school activities could be organized and adapted to the adolescents' needs to help them manage school without headaches or stomach aches.

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