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Abstract

Objective:The purpose of this study was to explore and describe the content and the verbal interaction in health dialogues between pupils and school nurses.

Method: Twenty-four health dialogues were recorded using a video camera and the conversations were analysed using the paediatric version of the Roter Interaction analysis system.

Results:The results showed that the age appropriate topics suggested by national recommendations were brought up in most of the health dialogues. The nurses were the ones who talked most, in terms of utterances. The pupils most frequently gave information about their lifestyle and agreed with the nurses' statements. The nurses summarized and checked that they had understood the pupils, asked closed-ended questions about lifestyle and gave information about lifestyle. Strategies aimed to make the pupil more active and participatory in the dialogues were the most widely used verbal interaction approaches by the nurses.

Conclusion:The nurses' use of verbal interaction approaches to promote pupils' activity and participation, trying to build a partnership in the dialogue, could indicate an attempt to build patient-centred health dialogues.

Clinical implications: The nurses' great use of questions and being the ones leading the dialogues in terms of utterances point at the necessity for a nurses to have an openness to the pupils own narratives and an attentiveness to what he or she wants to talk about.

Keywords: School health service, health dialogues, children, adolescent, school nurse, communication

I. Introduction

There is a need to develop an-evidence based health dialogue as a useful method of promoting children's and adolescents' health. A health dialogues including a brief health examination is offered to pupils in the fourth and seven/eight grades, as well as during the first year of upper secondary school. The School Health Service (SHS) in Sweden is free of charge and is based within the schools, and reaches almost every child and adolescent aged six to – 19 years. The overall aim of the health dialogues is to support pupils in making healthy choices and through this, help them maintain and improve their health. The health dialogues are mainly focused on health promotion, and reference both lifestyle habits and psychosocial health issues [1]. Knowledge about and insight into health and lifestyle have been reported by pupils as an outcome of health dialogues [2, 3] but adaptability to the pupil's own wishes and needs has an essential impact on the outcome of these dialogues [2, 4, 5]. A health dialogue can be performed in many different ways, but an openness to the individual's own narratives and an attentiveness to what he or she wants to talk about is crucial. Ensuring that a dialogue, and not just an information session, is created is described as a prerequisite for all caring encounters [6].

The regular health visits with the school nurse differ from the contacts children and adolescents have in other health care settings in significant ways. Firstly, the health dialogues mainly emphasize health promotion in contrast to medical encounters based on a perceived health problem. It is also the nurse who invites the child [1, 7], and not the young person him- or herself who initiate the contact. Furthermore children from the age of ten often meet the school nurse alone, in contrast to other encounters in health care in which a parent usually accompanies the child.

Earlier research on communication with children in health care contexts has often focused on the parent, child and professional in a triadic conversation. In these meetings, the child's contributions in the communication are reported as sparse [8, 9].

There is a need to elaborate on the knowledge of how promotive health dialogues are actually carried out, as existing research is sparse and is based on descriptions of the encounter. Two observation studies of encounters in public health nursing, with young people as participants, were found. However, one of the observations concerned a girl who visits the nurse frequently based on special needs [10], also in Langaard & Toverud [11] the observed sessions were based on perceived psychosocial problems. Additionally one study of recorded dialogues between school nurses and pupils suffering from overweight was found [12].

To the best of our knowledge, there is no previous research based on recordings of health-promotive dialogues in the SHS.

1.1 Aim

The purpose of this study was to explore and describe the content of and verbal interaction in health dialogues between pupils and school nurses.

Research questions:

Which different topics are brought up in the health dialogues?

What is the distribution between the different topics discussed in the health dialogues?

What is the distribution of utterances between pupils and nurses?

How is the verbal interaction carried out by pupils and nurses in the health dialogues?

2. Methods

2.1 Design

A descriptive explorative design with a quantitative approach was chosen for exploring the health dialogues between pupils and school nurses. The health dialogues recorded in this study were ordinary real-life health dialogues between pupils and school nurses according to the national recommendations. The school nurses participating in the study used a health and lifestyle tool, previously described [13] as a starting point for the dialogues. The tool is based on the national guidelines [1] and includes topics of physical activity/ inactivity, diet, sleep, tobacco use, alcohol use, school situation, relationships, sexuality, puberty, conclusion regarding habits and perceived health.

2.2 Study sample

Twenty-four health dialogues were recorded, eight from each age group incorporating 12 girls and 12 boys. The sampling strategy was from the beginning to record one encounter from each nurse. As it was somewhat difficult to find nurses who were willing to participate in the study one nurse participated in three recordings, five in two recordings and 11 in one recording each. The nurses' experiences as school nurses ranged from one to 15 years (median 7 years) and all except one had a specialist training in paediatric nursing, school health nursing or as primary health nurses.

2.3 Data Collection

The health dialogues were recorded with a video camera and one researcher was present sitting behind the camera. When the nurse and child moved in the room, e.g. to measure the child's height, the researcher followed their movements with the camera.

2.3 Data analyses

The conversations were analysed using the paediatric version of the Roter Interaction analysis system (RIAS). Following to the RIAS manual [14] the coding was performed directly from the videotapes using the RIAS computer-entry software. Roter Interaction analysis system is

one of the most widely used methods to quantitatively explore verbal interactions within different health care settings [15-17]. A complete list of RIAS versions used in different health care settings and countries is available at http://www.riasworks.com/resources_a.html [18]. In the paediatric version of RIAS, each utterance in the conversation is coded into one of 49 different categories using a detailed category system. One utterance contains one thought and can vary from a single word to a lengthy sentence. Fifteen of the categories contain socio-emotional exchanges, 33 task-focused exchanges, and the last category is for unintelligible utterances. Some of the categories are exclusive to either professionals or patients, for instance the counselling category only concerns the professionals. A more detailed description of the categories and coding rules can be found in the RIAS coding manual [14].

In order to facilitate the analysis of the interaction in the health dialogues, the 49 RIAS categories were aggregated in to five groups based on the functions of the categories as described by Roter & Larsson [19] and Roter & Larsson [15]. The aggregated groups with examples from health dialogues in the SHS are described in Table 1. Three of the groups are based on task behaviours – *data gathering*, *giving information* (pupils' utterances only) and *education and counselling* (nurses' utterances only). The two other groups are based on the use of socio-emotional behaviours: *building a relationship*, containing the development of rapport and an awareness of emotions, and *activating and partnering* aimed to facilitate a helpful partnership in the dialogue.

Insert Table 1

The different topics discussed in the health dialogues were sorted by means of content, based on the recommended topics in the guidelines for SHS [1], and additional content according to the physical examination and guiding of procedure were also sorted. The frequencies of the

utterances in different categories and the content were analysed using SPSS software version 18, and the Chi-square test was used to analyse group differences.

2.4 Reliability

All recordings were analysed by the first author, who also carried out the recordings. Before the analysis started, the researcher was trained in RIAS by Roter and Larsson using training tapes and the RIAS coding manual. During the analysis process, an ongoing discussion took place with another researcher who also was trained in using RIAS. Parts of the recordings were looked through together and discussed to reach consensus according to recommendations from Larsson (personal communication April 2011).

2.5 Ethical approval

Ethical approval was obtained from the Research Ethics Committee at Linköping University, Sweden (dnr 36 – 08). Written consent was obtained from the children, adolescents and nurses prior to recording. According to the varying ages of the participants, different information letters were prepared for each group. Parents' written consent was also obtained for the two younger age groups according to the Swedish guidelines for research involving children and adolescents [20].

3 Results

The recordings ranged from 22 minutes to one hour and 17 minutes (median 43 minutes), and incorporated a total of 22,300 utterances. Of these utterances, 27% appeared in the health dialogues between nurses and pupils in fourth grade, 34% from seventh/eighth grade and 39%

from first year upper secondary school. An overview of each of the recordings is presented in Table 2.

Insert Table 2

3.1 Topics of discussion

The results show that the age-appropriate topics suggested in the national guidelines were brought up during all the visits, with the exception of sexuality, which was not discussed in two of the dialogues with pupils in secondary school. Almost 50% of the total number of utterances were within the topics concerning physical lifestyle habits. Among these habits, diet was the most frequently discussed separate topic in all three age groups. An overview of the frequency of topics during the health dialogues is presented in Table 3.

Insert Table3

3.2 Distribution of utterances between pupils and nurses

In the health dialogues, the pupils contributed fewer utterances (41%) than the nurses did (59%). The pupils' share of the utterances ranged from 28% to 56%, and in only one case did the pupil contribute more utterances than the nurse. When the utterances concerning the physical examination and guiding of procedure were excluded, the pupils' contribution increased to 43%. When looking at the three age groups together, the pupils were most talkative in terms of utterances when talking about relationships (48%), school situation (46%) and sleep (46%). The variation of the pupils' share in terms of utterances is displayed by topic and age in Table 3.

The oldest pupils contributed more utterances in the conversations than the two younger groups did ($p < 0.001$). However, the group with the youngest children contributed more

utterances compared with the group of children from seventh and eighth grade ($p < 0.01$). The age groups' varying input in the health dialogues is displayed in Table 3.

In 15 of the 24 recorded dialogues, the pupils contributed more than 40% of the utterances. In these 15 dialogues, ten of the participants were girls and five were boys. Altogether, the girls contributed 43% of the utterances compared with the boys' 39% ($p < 0.001$).

3.3 Utterance categories used by pupils and nurses in the health dialogues

The four most frequent utterance categories used by the pupils were “*giving information about lifestyle*” (53%), “*agreeing*”, (22%), “*giving information about medical conditions*” (6%) and “*giving psychosocial information*” (4%). The nurses used a broader range of utterances in the conversation. The most frequently used were “*checking*” (14%), “*asking closes-ended questions about lifestyle*” (14%), “*giving orientation, instructions*” (13%), “*giving information about lifestyle*” (12%), “*agreeing*” (7%), “*back-channelling*” (7%) and “*approving*” (6)%.

The utterance category *checking* was used by the nurses not only to clarify the ongoing discussion but also when referring to information given earlier, for instance an earlier visit or a questionnaire the pupil had answered in advance.

The nurses were the ones who most frequently asked questions. Regarding the use of questions according to lifestyle, medical conditions, psychosocial information, therapeutic regime and age development the nurses asked 2,638 questions, compared to the pupils, who asked 48 questions altogether. The nurses used 2,189 closed-ended questions and 449 open-ended questions in the conversations.

When looking at the combined categories, the majority of utterances by the pupils involved *giving information*, both answering the nurse's questions and providing their own descriptions

of their situation. The rest of the pupils' utterances were mostly in the area of *building a relationship*. The distribution in the different age groups is displayed in Figure 1.

Insert Figure 1.

The nurses' most widely used verbal interaction approach was *activating and partnering*, followed by *gathering data, education and counselling* and *building a relationship*, distributed relatively equally. The distributions in the different age groups are displayed in Figure 2.

Insert Figure 2.

4. Discussion and Conclusion

4.1. Discussion

Pupils have described the importance of having enough time for the health dialogue [4]. However, the guidelines offer no recommendations regarding the time required to perform a constructive health dialogue [1]. School nurses in Sweden have reported that they allot about 20 minutes or more for two-thirds of the health dialogues [21]. In this study, all dialogues lasted for longer than 20 minutes (md 43 min). The difference might be due to the pupils participating in the study being talkative or the nurses acting differently than they would if a researcher had not been present. However, the great variation in the dialogues' duration can be interpreted as a result of attentiveness to the individuals' needs and wishes, a desire expressed by pupils in Golsäter et al [2].

4.1.1 Topics discussed in the health dialogues

The age-appropriate topics suggested in the guidelines (1) were brought up in almost every health dialogue in this study. This can be interpreted as the nurses following the guidelines and ensuring that suggested topics were brought up for discussion. The lifestyle habits most

frequently discussed in all age groups were dietary habits as well as physical activity and inactivity. Children and adolescents in Sweden are in general healthy but overweight and obesity presents a major health problem [22] and only about 10 % of Swedes meet the recommendations for dietary habits [23], which could indicate a need for a great deal of communication on this topic. Adequate knowledge is prerequisites for counseling about dietary habits, and Magnusson, Hulthen, & Kjellgren [12] have argued that school nurses need more knowledge to be able to meet the need of individual pupils regarding dietary counselling in meetings with children suffering from overweight. A look at different health questionnaires in the Swedish SHS, including the health and lifestyle tool used by the nurses in this study, shows that issues of diet constituted the single most frequently requested category of health information, which to some extent could influence the direction of the health dialogues [24]. The pupils' psychosocial health was discussed, but not as much as the physical lifestyle habits. These results are in concordance with Borup [3], where pupils reported discussing psychosocial topics less frequently than more physical health promotion issues. Mental health and psychosomatic symptoms are areas that have been reported to be increasing [22], and school nurses have also reported this health problem as frequently occurring among pupils [25]. It is somehow surprising that these issues are not discussed more frequently; however, both school situation and relationships were the topics in which the pupils were most active in terms of utterances. A more in-depth analysis of the dialogues is needed to determine the extent to which the needs of the individual pupil are met or whether the dialogues are ruled by the nurse's agenda.

4.1.2 Leading of the health dialogues

In looking at the distribution of utterances between pupils and nurses it is obvious that the nurses led the dialogues in this aspect. School nurses' dominance in conversations with pupils has also been reported in discussions of overweight and obesity with pupils both with and

without parents present [12]. In encounters in Child health Care (CHC) professionals' verbal dominance has been described [26] as it has in other health care encounters with children and adolescents [27, 28]. As Bergstrand [29] describes, when it is the professional who initiates the encounter there is a risk that he or she will lead the discussion based on his or her agenda. Similar to SHS, in CHC Baggens [26] found encounters to be led by the nurses based on their agenda. The results of our study, together with those of the studies above, can be seen as a verification of the pupil's limited possibility to influence the dialogue. However, pupils have described that meaningful discussions about health and lifestyle arose when nurse asked questions and the pupil could answer and move the discussion forward based on his or her own perceived needs [2]. School nurses also described questions from the nurse as a way to start successful dialogues based on the nurse's agenda, allowing the pupils to later take over based on their own needs [30]. According to the guidelines, the nurse is obligated to initiate discussions according to health problems he or she considers to be a risk [1]. Pupils have also argued for the nurse's obligation to bring up health risks that emerge during health dialogues, but at the same time they express a need for the nurse to be attentive to their willingness to discuss the subject further[2]. During the conversations in this study, many questions were asked by the nurses and thus a great amount of the pupils' contribution to the dialogues consisted of giving information about their lifestyle by answering the questions. Nurses' propensity to lead the communication with questions is in line with results from other studies with health care professionals, such as medical doctors [31]. However, it is a challenge for the nurse to bring up topics according to the guidelines and at the same time let the pupil decide what to talk about. In light of the results above the great number of questions from the nurses can be seen as a useful way to initiate the different topics, but the nurse's attentiveness to how the pupil wants to carry the conversation further seems to be crucial. One way to extend the

pupils' possibilities to influence the dialogue and turn the focus to their own wishes might be to use a greater number of open-ended questions like in motivating interviewing [32].

To the best of our knowledge there is no description of an optimal distribution between individual and professional in encounters like these health dialogues. Based on a patient-centred approach [33] what is crucial in the dialogues is that they be based on the individual's own needs and wishes [2, 3, 5], and the distribution in terms of utterances might not be the most important part. To be able to study the pupils' satisfaction with the health dialogues further analysis of the recordings is needed. Further analysis of the health dialogues might also explore the pupil's participation in the dialogue in terms of more activity as it proceeds.

The girls contributed more utterances than the boys did, which is in line with a study that reported adult women's activity in discussions as greater than men's in medical consultations [34]. However, the school nurses were without exception female, so the difference could also be seen from the perspective of discussion between participants of the same sex, even if 65% of boys between 11 and 17 years reported having no preference regarding the gender of their health care provider [35].

4.1.3 Interaction patterns in the health dialogues

The nurse's great use of *checking* as a communication strategy in the dialogues could be interpreted as a way of ensuring that there were no misunderstandings. However, it can also be seen as a way to make the pupil feel more like an active and equal partner in the dialogues, in line with the patient-centred approach [33]. Concerning discussing obesity with children, Magnusson [12] describes nurses' referring to a pre-answered questionnaire as a way to activate the pupil and through this let the pupil feel like the discussion is based on his or her agenda. A nurse who listens to and activates the pupil in the decision of what to discuss is reported to have an important effect on the outcome of health dialogues with pupils [2, 4, 5].

Looking at the combined categories, the distribution of the pupils' utterances was 65% giving information and the rest was mainly in the area of building a relationship. The nurses in this study used strategies that facilitate building a relationship as well as activate the pupils and make them to feel like a partner in the dialogue. These results indicate a patient-centred approach [33], and creating a frame for a dialogue based on the person's situation is described as a prerequisite for all caring encounters [6]. The results from this study has contributed new knowledge about how verbal interaction is carried out in encounters where children and adolescents meet health care professionals without an attending parent as well as perspectives of how health dialogues in the context of SHS is carried out based on recordings of ordinary real-life health dialogues.

Limitations

During the data gathering it was somewhat difficult to find nurses who were willing to participate. Reasons for being unwilling to participate were lack of time and feeling uncomfortable about being recorded. Insecurity about how the recording could affect the pupils' benefit from the health dialogue, as well as a discussion about the right to expose a child to being video recorded, was raised. This is in line with Alderson's [36] description of difficulties in research with children based on adults acting as gatekeepers seeing them as vulnerable and in need of protection. This may have affected the sample, as the nurses who participated in the study instead might be of the opinion that children are competent and capable of making decisions, and thus also treated the children as more competent during the health dialogues. Being video recorded might have affected both the pupils and the nurses, leading to a different performance. However, when watching parts of the recordings afterwards, both the pupils and the nurses described the presence of the researcher and camera as having affected the encounter only negligibly, as also confirmed in earlier studies [28, 37, 38]. The health dialogues took place within the same county in Sweden, and the nurses

worked with similar health and lifestyle tools, which may have affected the results. However, the great variation in the duration of the dialogues indicates that the tools were used mainly as a starting point.

The RIAS has been widely used with both adults and children, but not in encounters in the SHS. Forty-two of the 49 RIAS utterance categories were used in this study, which can be interpreted as implying that RIAS is appropriate to use in this setting. The size of the sample in this study can be seen as a methodological limitation, but in the great number of utterances that emerged in the recordings it can be seen as a starting point for further studies aiming to explore health dialogues in the SHS.

Using RIAS allowed an overview of the verbal interaction during the health dialogues based on socio-emotional and task-focused exchanges. More in-depth knowledge about the verbal interaction would have been attained if a qualitative method had been chosen. However, as earlier research on health dialogues is lacking, RIAS presented the possibility to start developing knowledge about the interaction in these encounters. Combining qualitative and quantitative methods might be a useful way to further capture interaction in health care, as stated by Roter & Larsson [15], and the video recordings from this study will be further examined by qualitative methods as well.

4.2. Conclusion

To the best of our knowledge, this is the first time any explorative study with a systematic research tool like RIAS has been applied to studying health dialogues between pupils and school nurses. The results show that the age-appropriate topics suggested in national recommendations were brought up in most of the health dialogues. In terms of utterances the nurses were the ones who talked the most, while the pupils most frequently gave information about their lifestyle and agreed with the nurses' statements. The nurses summarized and checked that they had understood the pupils, asked closed-ended questions about lifestyle, and

gave instructions about the health dialogue and about lifestyle. Strategies aimed at making the pupil more active and participatory in the dialogues constituted the most widely used verbal interaction approach by the nurses. The nurses were also keen to ensure that they understood what the pupils were telling them. The great use of interaction approaches to promote pupils' activity and participation, trying to build a partnership in the dialogue, could indicate an attempt to build patient-centred health dialogues.

4.3. Clinical Implications

The results indicate that school nurses strives to encourage pupils' to become active participants in the dialogues and to ensure that they understand what the pupils are telling them. However the nurses great use of question's and being the ones who rule the dialogues in terms of utterances point at the necessity for nurses to have an openness for the pupils own narratives and attentiveness to what he or she wants to talk about. Additional research to deepen the understanding of the interaction in health dialogues is needed for further development of health dialogues as a useful method to promote pupils' health.

I confirm that all personal identifiers have been removed or disguised so the persons described are not identifiable and cannot be identified through the details of the story.

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Table 1. Utterance categories with examples from School Health Services

Examples of utterances from School Health Service	Utterance category	Aggregated category
How do you think it is during the breaks? (n) Do you do any exercise during your leisure time? (n) Is there someone in your life you're especially fond of? (n) But your teeth, how often do you brush them? (n) How about your headache? (n) What do you think about (your living habits/your lifestyle)? (n) What do you mean by that? (p)	Questions about lifestyle, medical conditions, therapeutic regimen	Data gathering (n, p)
I play football four times a week (p) No, no serious relationship like that (p)	Giving information about lifestyle, medical conditions, therapeutic regimen, age development	Giving information (p)
It's really good to exercise (n) It [your back] is a bit twisted (n) It's those kinds of things that change when you get older (n) It's good to get out in the winter and get some daylight (n) Your voice gets a bit rough and such (n) Start exercising once a week (n) It's important that you eat something in the evening. (n) Keep in mind that it's both expensive and unhealthy to drink too much "Oboy" [instant chocolate milk drink] (n)	Giving information about lifestyle, medical conditions, therapeutic regimen, age development Counselling regarding lifestyle, psychosocial and medical conditions, therapeutic regimen, age development	Education and counselling (n)
I've been selected for the local team (p) I like that music too (n) Okay great (n) That was clever of you (n) Mother and I had had a big fight, and I was angry (p)	Social talk Positive talk (agreement, laughing, approval) Emotional talk (concern, empathy, reassurance)	Building a relationship (n, p)
You don't feel I'm nagging too? (n) Do you know what that is? (n) It's the football that matters (n) Mm (n) And you've mostly drunk water? (n) May I give you a tip? Is there anything we've forgotten to talk about? (n) But what about (love then) (n) I ask everyone that (n) Now we'll measure how tall you are (n)	Participatory facilitators (asking for opinion, asking for understanding, checking, back-channelling) Procedural talk (orientation and transition)	Activating and partnering (n, p)

Nurse = n Pupil = p

Table 2. Overview of the recordings

Grade	Gender	Total number of utterances	Utterances by pupil/nurse	Utterances by pupil/nurse %	Time (min)
4	Boy	590	216/374	37/63	22
4	Boy	507	141/366	28/72	22
4	Girl	980	446/534	46/54	47
4	Girl	781	241/540	31/69	41
4	Girl	939	469/470	50/50	45
4	Boy	638	197/441	31/69	35
4	Girl	687	290/397	42/58	32
4	Boy	990	412/578	42/58	45
7	Boy	1520	489/1031	32/68	77
7	Girl	1116	472/644	42/58	55
8	Boy	810	351/459	43/57	38
8	Girl	660	266/394	40/60	35
8	Girl	598	170/428	28/72	33
8	Boy	892	268/624	30/70	47
8	Boy	759	269/490	35/65	28
8	Girl	1215	515/700	42/58	48
First year upper sec. school	Boy	1296	726/570	56/44	61
First year upper sec. school	Boy	889	379/510	43/57	32
First year upper sec. school	Boy	812	345/467	42/58	25
First year upper sec. school	Girl	1184	574/610	48/52	51
First year upper sec. school	Girl	1329	568/761	43/57	67
First year upper sec. school	Boy	974	377/597	39/61	51
First year upper sec. school	Girl	1334	546/788	41/59	60
First year upper sec. school	Girl	800	391/409	49/51	35
Total		22300	9118/13182	41/59	1029

* Grade 4 = 10-11 years old; Grade 7 = 13-14 years old; Grade 8 = 14-15 years old; First year upper secondary school = 16-17 years old

Table 3. Overview of the topics discussed during the health dialogues and the pupils' share of the utterances

Grade	Topic	Frequency of utterances	Percent of total utterances	Percent of utterances by pupils
4	diet	1050	17	43
	physical activity/inactivity	1015	17	44
	school situation	786	13	45
	perceived health	748	12	40
	examination	709	12	19
	conclusion regarding habits	576	9	32
	relationships	573	9	50
	sleep	364	6	47
	guiding of procedure	231	4	30
	puberty	60	1	35
	Total	6112	100	39
7 and 8	diet	1476	20	37
	perceived health	1070	14	40
	examination	932	12	26
	physical activity/inactivity	851	11	39
	school situation	717	10	41
	conclusion regarding habits	591	8	32
	relationships	529	7	40
	alcohol use	321	4	37
	sleep	320	4	42
	tobacco use	298	4	41
	guiding of procedure	283	4	34
	sexuality	165	2	36
	puberty	17	0.2	35
	Total	7570	100	37
First year upper secondary school	perceived health	1276	15	49
	diet	1237	14	43
	school situation	1072	12	50
	physical activity/inactivity	1001	12	45
	examination	879	10	36
	relationships	834	10	52
	conclusion regarding habits	654	7	39
	sleep	585	7	47
	sexuality	326	4	41
	alcohol use	268	3	50
	Tobacco use	252	3	48
	guiding of procedure	234	3	42
	Total	8618	100.0	45

Physical lifestyle habits = physical activity/inactivity, diet, tobacco use , alcohol use, sleep, conclusion regarding habits

Figure 1. The pupils' aggregated categories in the different age groups

Figure 2. The nurses' aggregated categories in the different age groups