



**Karolinska
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Department of Public Health Sciences

Degree Project for the Master's Program in Global Health

Medical students' experiences as health educators in an alcohol, narcotics and tobacco prevention programme in Swedish high schools

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I hereby confirm that I have formulated the aim and conducted the literature review used in this thesis. I certify that I have developed and implemented the study design, performed the data analysis and interpreted the results. I guarantee that the thesis reflects my own work, written with my own ideas and words, and thereby, I am the person held responsible for its contents. All sources of information are indicated in the list of reference in accordance with international guidelines.

Abstract

Background: There is a rapid increase of non-communicable diseases: the use of alcohol, tobacco and illicit drugs increase the risk for such diseases. School-based health education programmes can prevent the onset of psychoactive abuse in adolescents; in Sweden, the effect of such interventions is questioned—research and new interventions are needed. The Choice Foundation works with medical students as educators in the programme Teens Understanding and Taking Control of Health (TUTCH), which is offered to high schools in order to improve young people’s knowledge about the body and the effect of alcohol, narcotics and tobacco. The programme also offers the medical students’ training in health communication; as effective health communication is essential to be able to affect peoples’ behaviour.

Aim: To explore medical students’ experiences as health educators in an alcohol, narcotics and tobacco prevention programme for high-school students in Sweden.

Methodology: This explorative study, in a Stockholm context, used a qualitative research design. Nine medical voluntary students from the TUTCH-programme were interviewed based on a semi-structured topic guide, identified by a purposive sampling strategy. Additional data was collected by observing the TUTCH-programme and conversations with the organisation’s staff. The recorded interviews were analysed using qualitative content analysis based on an adapted model of the McGuire communication-behaviour model.

Results: The overall theme was identified as *communicating medical knowledge to counterbalance ANT-consumption*, and three categories were defined: *Health education as preventive measure*, i.e. the medical students’ ambition to empower youth by increasing their knowledge; *controlling factors influencing the goal of the session*, covers the challenges the medical students faced as educators and strategies used to tackle the challenges; and *medical students as health educators*, describes the medical students’ perception on their role as health educators.

Conclusion: Health education is a complex task, where the medical student’s credibility, flexibility and capacity to contextualise the message appears to contribute to the success of the communication, as well as the high-school students’ background and characteristics. The study concludes that medical students benefit from being involved in the programme as they develop communication skills in addition to factual knowledge, which is important for their future career and in the fight against lifestyle diseases.

Keywords: Medical students, School-based health education, Health communication, Health communication training, ANT-prevention

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List of acronyms

Alcohol, narcotics and tobacco (ANT)

Karolinska Institutet (KI)

Non-communicable diseases (NCDs)

Teens Understanding and Taking Control of Health (TUTCH)

World Health Organization (WHO)

Introduction and Background

It is well recognized that health is highly related to lifestyle (1–3). There is an on-going rapid increase of non-communicable diseases (NCD), annually killing 38 million people globally. Low and middle income countries are the most severely affected; they carry approximately 75% of all NCDs. Modifiable risk factors such as harmful use of alcohol, tobacco consumption and unhealthy diets increases the risk of NCD. Marginalized and low income-groups are at the greatest risk of exposure to harmful products (2), i.e. smoking initiation of adolescents is higher among those from disadvantaged settings (3), resulting in an increase in individuals suffering from NCDs, whereas high-income groups have greater protection through access to care and protective services. The World Health Organization (WHO) states that there is a need for a comprehensive approach by all sectors to tackle the burden of NCDs (2). Health promotion, defined as the process of making it possible for people to take control over and improve their health to a greater extent (4), includes health education, which can tackle risk factors, halt progression or even prevent the onset of psychoactive abuse. In order to be efficient, the strategies need to be tailored to the population and cultural context in question (5). The following paragraphs will present the concept of health education, followed by a presentation of the Swedish school-based health education programme Teens Understanding and Taking Control of Health (TUTCH), and the concept of health communication.

Health education

According to the Universal Declaration of Human Rights, health is a fundamental human right. The WHO defines good health as a state of complete well-being, not necessarily in the absence of disease or disability. Health should be seen as a resource for everyday life rather than the purpose of life (6). Health education, described as any learning activity tailored to support individuals and communities to increase their health by influencing their attitudes or increasing their knowledge (7), has been essential in actions to prevent diseases and to promote health during the last century, e.g. in the preventions of NCDs in high-income countries in the 60s and 70s, which was a result of raised awareness of the relationship between health and lifestyle (8). Two main directions of health education developed during this period: *the preventive approach*, which used psychological theories as means to achieve behavioural change; and *the educational approach*, which focused on enabling people to make informed choices. These strategies have been criticised for underestimating social and

environmental factors' impact on health status (5), and for 'victim-blaming', by making the individual responsible for their own health while ignoring surrounding circumstances (9, 10), as well as for being successful only among the most educated in society, as personal skills and literacy was assumed to contribute to the capacity to understand the messages (8).

As a result of an increased understanding of environmental factors' impact on behavioural decisions, health education was refined as a tool for disease prevention during the 1980s (8, 9). Programmes were now tailored to support people to develop skills to make positive health behaviour choices. There was an extensive production of theories of behaviour change during this decade, for example the health belief model, the trans theoretical model (11) the social learning theory and the theory of planned behaviour (12) which were used as guides for educational programmes by describing the complex link between action, beliefs, perceived social norms and knowledge (8). The first WHO conference about health promotion was arranged in 1986, resulting in 'The Ottawa Charter' where indirect factors such as public policy, working conditions as well as personal behaviour were acknowledged as factors impacting on people's health status. The concept of empowerment was emphasised and used to increase people's control over modifiable determinants of health and presented as a way to fight health inequality (4-5, 8).

Despite the progress of interventions, health education has to a large extent failed to reach sustainable behavioural changes (8), however, empowerment models appear to be the most effective approaches in health education (1, 13-14) and seen as an important part of a comprehensive strategy to tackle structural determinants of health, where an increase in health literacy is essential (5). Health literacy means having practical knowledge about bodily functions and signs of dysfunctions, and being able to find and understand information about the condition that has occurred, and how it affects people's actions in terms of health (13). It has been shown that people with limited health literacy have less understanding about the meaning of preventive health measures (15) and their health status is poorer than those with adequate health literacy (16).

School-based health education programmes

WHO has stated school as an important setting when it comes to affecting young people's health and health behaviour (4, 17). However, studies on the effectiveness of school-based interventions regarding alcohol narcotics and tobacco (ANT)-prevention differ (18); trends

indicate that comprehensive programmes involving parents (19), and training of life skills and health lifestyles appears to be most effective (20–24). A study evaluated comprehensive school-based substance abuse comprehensive prevention programmes for students between the ages of 12–14 from seven different European countries, claiming that students who participated in the programmes were less likely to experience alcohol-related behavioural problems than non-attending students (22). A review of eligible studies carried out in the US examined if knowledge-based prevention programmes and comprehensive school-based prevention programmes were equally efficient in reducing marijuana and alcohol use in the long-term among adolescents (age 10–15). The authors claim that comprehensive primary prevention programmes, including anti-drug information, together with refusal-skills, social-skills training and self-management skills, are most effective (24).

ANT-prevention intervention has been a part of Swedish education for decades, however there is a decreasing trend in youths' knowledge about ANT. Only half of the school-students reported that they had received ANT-education in 2011, which is a marked decrease since 1980, where roughly 90% reported having received ANT-education, whereas the ANT-education held by teachers at the school appears to be based on low evidence (25). Lack of knowledge can be disempowering (21) and research shows that information-interventions can lead to increased knowledge, but in spite of this, they are not sufficient for a behavioural change among youth (5, 20) and should be seen as an important component of comprehensive prevention programmes. The Swedish National Agency for Education (Skolverket) suggests that increasing knowledge about ANT is a task that should be undertaken by schools, and should be included in a general health promotion programme (25).

The Choice Foundation

The Choice Foundation offers medical students training in health communication as educators for high-school students in a school-based health education programme, with the aim to increase young people's health literacy. The foundation was founded in 2010, and in 2013 it decided to narrow its focus to ANT prevention, which was motivated by an increased illicit-substance abuse and mental ill-health among high-school students in Sweden. For this purpose, the educational programme TUTCH was developed and implemented aiming to empower young people in school to take control of their health, and to eliminate the impact of ANT in social interaction. The organisation emphasizes the small age difference between the educators and participants as a contributing positive factor in the interaction, where the

medical students can be seen as role models. When accepted to the programme, the medical student will take a one-day course on communication strategies, ANT, and the TUTCH-concept, in order to develop rhetorical skills and increase knowledge of ANT and abuse. After this, the students will be able to start educating; financial compensation is offered for each classroom session they are in charge of (26). The foundation was first established in Stockholm, where the largest expansion of the programme has taken place, but it has gradually been implemented in all cities with medical universities in Sweden. Medical students from Linköping and Uppsala were enrolled 2013, Örebro, Lund and Gothenburg in 2014 and Umeå in 2016. Approximately 90 high-school classes in 10 different cities participate in the TUTCH-programme each semester, and about 200 medical students have been recruited since the beginning: roughly half of them are active today, out of which 40 in Stockholm, 24 in Linköping, 20 in Uppsala, 10 in Örebro, 5 in Gothenburg and 8 in Lund. Umeå is currently in the process of recruiting. The foundation cooperates with the student union at the medical universities, in the recruitment of potential educators (e-mail, Robert Åkesson, founder of the Choice Foundation 02/03/2016).

The programme consists of three parts. The medical students, invited by high schools (on rare occasions by junior high schools), hold two 90-minute teaching sessions in pairs, usually during two consecutive weeks, they teach the students about the body functions and the effect of ANT, based on a predetermined presentation that supports and guides the lecture. Pupils are encouraged to ask questions in order to improve their general health literacy. The third part of the programme is a school assignment where the pupils focus on a subject of their choice within ANT, which they present to their classmates later on, and thereby continue to teach each other about ANT in a peer-based regime (26). The following paragraph will present the concept of health communication, which is the foundation of health education.

Health communication

Health communication, described as human communication about health related issues, focusing on health-related transactions and factors influencing that process (27) is applied in various different settings, such as interpersonal communication, i.e. physician-patient, organizational communication, and mass-communication, such as health promotion campaigns (27, 28). A focus on health communication is essential when investigating a health education programme, since the health communication process is responsible for the transaction of the health message (28). Interpersonal communication is argued as a crucial

source of social influence (12); this study will focus on health communication at an interpersonal level, as it is the most effective type of health communication when aiming for a behavioural change in the receiver (27, 28).

The communication process is the basis of all sorts of learning, and the effectiveness of communication will have impact on the achievement of the learning objects (5). The communication-behaviour change model, created by McGurie, can be used as a guide for investigation of health communication interventions (11), and has been used for this research; see Figure 1 for adjusted model. The model emphasises the communication inputs and outputs as ways to influence behaviour. There are five inputs, the first is the source (sender/communicator), from where the message is sent. The source has an impact on the credibility of the message, i.e. the way and how the content of the message is delivered influences the target group's response. The second input is the message, it is argued that the content and design of the message can influence the response, since the same message can be interpreted differently by different individuals. The third input is the channel, the medium through which the message is sent, e.g. through interpersonal communication or mass media. The fourth input is the receiver, i.e. the target group the message is intended to reach. The fifth input is the desired outcome, called destination, which in this case is to change attitude or behaviour. The model also identifies twelve necessary steps in the output of the communication in order to achieve a long-term effect in the behaviour of the receiver: the first steps include exposure to the message, attention, interest and the final steps decision-making, behaviour change, reinforcement and maintenance (11). Acknowledging the different inputs' influence on the communication makes it possible to adjust the communication according to the receivers (5, 11).

Effective communication is based on communicating on equal terms (28), whereas social-psychological factors play a major role in risk taking behaviours, which requires a communicator with knowledge and understanding about target groups' perceptions (12, 28-29). Health communication in Sweden is facing challenges because of the socio-demographical health differences, for example, immigrants' health is significantly lower than Swedish natives' (30), while health educators in general are highly educated natives. This becomes an obstacle as the receivers may struggle to interpret and the message correctly (28), but there are examples of successful health interventions in intercultural contexts in Sweden. The interventions have used health care professionals for promoting health among

immigrants, with focus on lifestyle factors and information about the health care system. The interventions were tailored to the target group needs and requests, and interpreters were used to ease the communication. The interventions showed increased knowledge among the participants, and claimed that health communication can contribute to increases knowledge about health and lifestyle and can therefore contribute to increasing the health equality in Sweden (31–33).

Health communication is also defined as a core clinical skill of physicians due to the increases burden of lifestyle diseases and the importance of preventive measures within the health care sector (12, 27). A North American study investigated different patient-physician communication patterns to identify the most successful as well as the least successful. Crucial components for successful communication with adolescents appeared to be empathy, non-judgment and self-reflection (34). According to an Indian study, a lack of communication training results in physicians who have domain knowledge, but who are unqualified to meet the needs of the population (35).

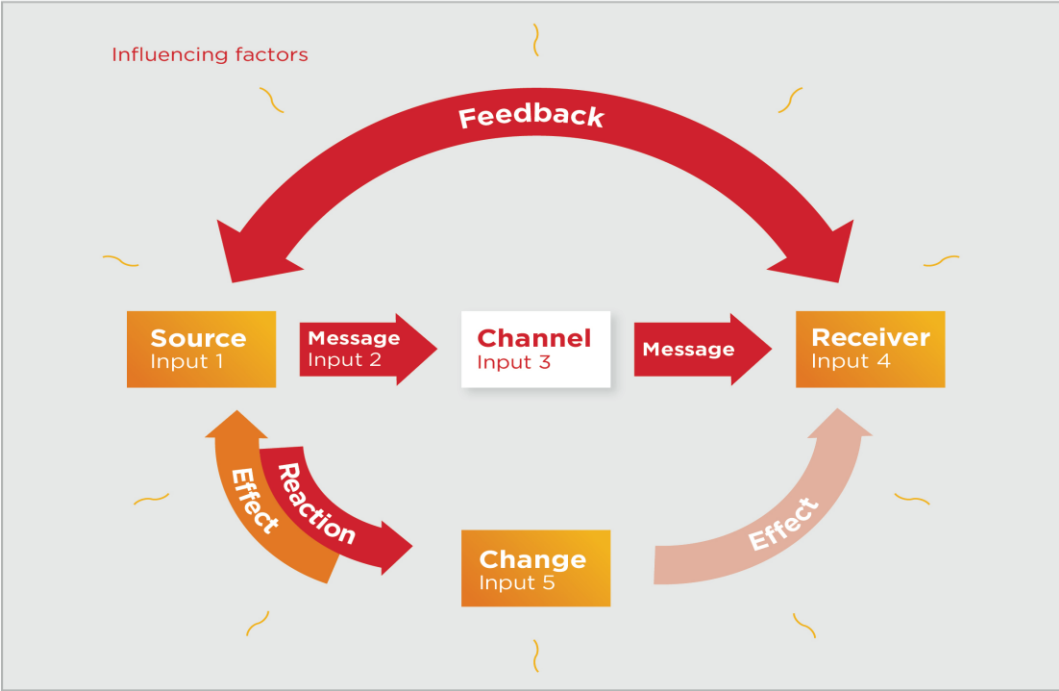
Rationale

A recently published report by the Swedish Agency for Health Technology Assessment and Assessment of Social Services (Statens beredning för medicinsk och social utvärdering) argued that the games, alcohol, tobacco and illegal drugs preventive programmes for young people in Sweden has no or little effect, and claims that more research is necessary, and new interventions need to be developed and evaluated (36). An evaluation of the TUTCH-programme shows an increased knowledge of roughly 5% about ANT and its effects among the high-school students (26), long-term effects on behaviour or consumption pattern have not yet been investigated. Nor the medical students' experience as health educators has been researched. Investigating the programme from the perspective of medical students is vital for further development of the programme when it comes to the training of health communication skills that the programme offers, as well as for gaining an increased understanding of factors influencing the health communication process. This could contribute to strengthening the outcome of the programme in terms of professional development for medical students as well as the empowerments of youths.

To address current health inequities, (1, 37) as well as ineffective prevention programmes for adolescent in Sweden (36), is urgent, making research on health education important. Health

inequalities are a global concern, recognized in the United Nations’ Sustainable Developments Goals 2030, where a target is to strengthen prevention against substance abuse and strengthen the capacity for health risk reduction, especially in developing countries. Effective health education programmes can help to reach these goals (38), and can be transferred to other settings, adjusted to the specific context (5). An adapted model of the McGuire communication-behaviour change model (11), has been used as inspirational framework to analyse the data (see Figure 1). A framework helps to interpret the empirical data and serves as a guide for the study (39). The analysis has focused on the medical students’ perceptions of the inputs that influence the communication process. The communication-behavioural change model (11) can be seen as a contrast to the general recognition of medicalization of global health and global mental health (40).

Figure 1. Adaption of the McGuire communication-behaviour change model, made by the researcher



Source: Medical student
Message: ANT prevention in the TUTCH-programme
Channel: Interpersonal communication
Receiver: High-school student
Feedback: Communication as a two-way interaction

Reaction to the communication
Change: Outcome of the communication for the medical student
Effect: Professional development (medical student), increased knowledge (high-school student, not included in this study)

Research question

How do medical students experience being health educators in an ANT-health education programme for high-school students in Sweden?

Main aim

To explore medical students experiences as health educators in an ANT-health education programme for high-school students in Sweden.

Specific objectives

1. To explore how medical students reflect on their experiences as health educators for high-school students.
2. To examine medical students' perception of their role as health educators in an ANT prevention programme for high-school students.
3. To examine how educating in a health education programme influences the medical students' health communication skills.

Method

Design

This explorative study used a qualitative research design. An explorative approach is appropriate for instance when the aim is map an unknown area that has not been studied before (39). Qualitative research is an emergent process, i.e. meaning that the idea of the study can change after data has been collected, and research questions can be modified during the process, according to the participants' responses and the data findings (41).

Qualitative research often aims to answer questions such as 'why', 'how', and 'what' when investigating a phenomenon, whereas questions like 'how much' and 'how many' is usually answered by a quantitative design. The main challenges for public health are man-made; qualitative research is a powerful tool that can be used to gain knowledge about human behaviour, which can be used to tackle the challenges and to improve quality of health services and medical providers. In health promotion research, qualitative research can provide a contextual understanding of the participants' perceptions (42). Furthermore, qualitative

research is appropriate when studying interaction, communication and human experience (43).

Study setting

The study was performed in Stockholm context. Individual interviews took place at locations chosen by the participants, six out of nine interviews were held at the KI library in Solna, in study rooms booked for the purpose to ensure that the participant could speak freely in an environment that was suitable for recording. Two of the interviews were conducted over Skype, since the participants were not in Stockholm at the time of the data collection. The Skype interviews were recorded and the researcher was alone in the room during the interviews, to ensure that the participants could speak safely.

Data collection

Qualitative research interviews were chosen as the main method of data collection, since the method can be used to achieve understanding of the individual perceptions of the phenomenon studied (39). To gain a deeper understanding of the study subject, the researcher conducted a literature review on the subject and had several conversations with the founder of the organisation and the project leader, and also studied the organisation's publications. In addition, the researcher also observed a TUTCH-programme teaching session held at a high school in Stockholm (04/02/2016); a previous session was also observed by the study supervisor. Following this, the researcher created a semi-structured interview guide (Appendix 1–2). It is recommended that explorative interviews are semi-structured, because it allows a flexible approach which can be used to discover the participants' unique experience of the study subject (39). The interviews were held individually in order to encourage the participants to speak freely, without being distracted by the presence of others. The interviewer's role is to encourage participants to speak freely about the topics in the guide by asking open-ended questions (39) and using prompts and probes (42).

A pilot interview was conducted (participant 1), led by the author and the supervisor, in order to test and refine the interview guide, as is recommended (39). The interview was recorded and analysed, and as the topic guide was only slightly revised, the results could be included in the study. Individual semi-structured interviews were conducted with another eight participants between 26/02/2016 and 09/03/2016.

Sampling strategy

A purposive sampling strategy was used, which is a strategy used to choose individuals who are most likely to generate relevant data according to the study aim (42). The selection should aim for gender and age difference as a way to generate richer data of the studied phenomenon (42, 44). The recruitment strategy was to invite potential participants from a sample frame based on certain inclusion criteria. The inclusion criteria were medical students that were at least in second year at medical school, enrolled in the TUTCH-programme with at least one year of experience as educator, and who had held at least eight lectures. Due to time and financial constraints, the sample frame was limited to medical students based in Stockholm, with a study population of 25 individuals. Since this is an explorative study, the aim was not to generate data representative for all the seven programmes. The sample size was based on recommendations in literature; a qualitative study should include the number of participants generating new data until saturation is reached (42), i.e. no other new essential data will come out.

Analysis

The interviews were carried out in Swedish and recorded. The researcher noted down reflections immediately following each interview to capture experiences and thoughts that could have been lost in the written transcripts. The notes were used as support during the analysis, as recommended (39). All the interviews were transcribed verbatim soon after each interview. The researcher listened and read through the transcripts several times in order to get a deeper understanding of the interviews. Qualitative content analysis, as described by Graneheim and Lundman (44), was used as method of analysis. This method is used to describe the text variations by identifying differences and similarities, and allows interpreting the data on a manifest and latent level, to be expressed as categories and themes (44). This is an inductive process, where data is analysed from bottom up, by arranging the data into gradually abstracted units (41). The analysis was carried out in an Excel spreadsheet; it was a process of creating meaning units, condensed meaning and codes (see Table 1 for examples of the coding process). Related codes were grouped into subcategories, followed by categories, and an overall theme (see Table 3). The analysis is non-linear, since the researcher moves back and forth between the different stages as the tentative codes, subcategories and categories emerge (41, 44).

Table 1. Examples of the coding process

Meaning unit	Condensed meaning unit	Code	Subcategory
<i>I usually start by showing the content of the day's lecture, and then I ask them if there is something they would like to discuss today or the next session, sometimes drugs that are currently trendy and things like that are brought up</i>	I start by showing the content of the day, and then I ask the students what they would like to talk about	Adjusting information to requests from the class	Adjusting the information
<i>You get a lot of questions you didn't expect to get, about life-style, smoking and snuff and things like that, that you maybe didn't expect to get at first, and then you realise, that okay, well, this is something reoccurring, you have to be well prepared for it.</i>	You get unexpected questions, making you realise that you have to be well prepared.	Teaching as a driver for learning	Professional development

Trustworthiness

To strengthen the credibility was a priority throughout the entire study. In order to increase credibility, participants with different experiences in terms of the period of time they had spent as educators were selected, and diversity in gender and present occupation were also taken into account. It is suggested that a variation of participants will provide richer information about the study phenomenon and increase chances of finding an answer to the research question (44). The researcher and the supervisor conducted tentative coding separately, and then compared and agreed on coding. Tentative categories and themes were produced by the researcher and later on discussed with the supervisor to increase credibility. The process of analysis was carried out in Swedish, while the selected anonymised quotes and examples of the analysis were translated into English by the researcher for the report, which

the supervisor reviewed to ensure accurate translation. The quotes have been paraphrased and revised when required, to ensure confidentiality and to increase readability.

The researcher considered reflexivity throughout the process, and noted down reflections as a support. Since the researcher is a tool in the collection and analysis of the data, the reflexivity of the researcher's influence is key for the identification of biases such as background, pre-understanding and values that could have an impact on the interpretation of data, in addition to the phenomenon of social desirability which could occur in the data since the participants were employed at by the organisation. The researcher handled this through an objective approach during the interviews as asking open-ended questions, and ensuring that the results would be presented anonymised. Reflecting on these factors increases the trustworthiness (41, 42).

To increase the credibility of the analysis, a group interview with two medical students from the organisation (not participants from the individual interviews, see Appendix 5 for background information) was conducted by the researcher, with the supervisor observing (13/04/2016), as recommended is in order to increase trustworthiness (39, 42). A group interview is suitable when aiming for an interaction and discussion between participants (42). The basis for discussion was the findings from the study, presented as tentative categories. The interview was recorded and listened through by the researcher. The participants were in agreement with the study findings and confirmed the researcher's interpretation. Finally, the researcher observed another teaching session at a high school (26/04/2016) to increase confirmability of the data.

Ethical consideration

The study has followed the ethical principles stated by Karolinska Institutet and ethical approval has not been required (45), the research has followed recommendations in terms of informed consent, confidentiality, consequences and the role of the researcher as described by Brinkmann and Kvale (39). Since the high-school students were not study objects, no written or verbal consent were required from them, and any information provided by the medical students about the high school students was discarded because it was irrelevant to this study. Any references made to particular schools or students in the interviews were anonymised. The Choice Foundation has an agreement with each school that information shared during these sessions is allowed to be used by the Choice Foundation for the analysis of their programme,

so long as the information is anonymous. This, alongside the fact that the high school students are not the subjects of this study mean that informed consent is not required.

Regarding the medical students; the initial contact with potential participants was established through the Choice Foundation, by distributing a letter of invitation (Appendix 3–4). After acceptance, the researcher continued correspondence with the interviewee. All interviewees gave their informed written consent to participate in the study. Participation was voluntary and participants were free to withdrawal at any time and guaranteed confidentiality; which was established by removing names and other personal details from the transcripts, and stored so that the researcher was the only one with access to the material, and the recorded interviews were deleted when the analysis was done. The Choice Foundation was involved in the recruitment of the participants; full confidentiality towards the Choice Foundation was not possible to establish. However, from the start of the data collection up until the final report the researcher has not shared any information or findings of the study with the foundation, to ensure an objective process. The foundation ensured that participation in the study was not going to affect the medical students future participation in the programme.

Results

Nine individual interviews were conducted, resulting in a total of nearly nine hours of recording; about 50 hours were spent transcribing, which resulted in 180 pages of transcripts. The average length of the interviews was 59 minutes, the shortest lasting for 47 minutes and the longest 64 minutes. Background information about the participants can be found in Table 2.

Table 2. Medical students' background information

Participant	Duration of interview	Gender/ Age	With Choice since	Status	Number of teaching sessions
1	47 min	F, 25	2013	Medical school graduated	50
2	62 min	F, 21	2014	Student 6 th semester	50
3	56 min	M, 23	2013	Student 10 th semester	10
4	61 min	M, 29	2015	Student 3 rd semester	9
5	59 min	M, 27	2011	Medical school graduated	30
6	60 min	F, 23	2014	Student 6 th semester	20
7	62 min	M, 30	2011	Medical school graduated	50
8	64 min	F, 26	2015	Student 12 th semester	25
9	60 min	F, 28	2011	Medical school graduated	50

The overall theme of the study is *communicating medical knowledge to counterbalance ANT-consumption*, meaning the medical students' ambition to tackle risk factors related to ANT-consumption by sharing their medical knowledge. The result in this section will be presented in three categories and seven subcategories, which emerged during the analysis, and which will be illustrated by quotes from the participants.

Table 3. Analysis by theme, categories sub-categories and codes

THEME	Communicating medical knowledge to counterbalance ANT-consumption						
CATEGORY	Health education as preventive measure		Controlling factors influencing the goal of the session			Medical students as health educators	
SUB-CATEGORY	Knowledge as a basis of healthy decisions	Adjusting the information	Dealing with distractions	Communication strategies	Teaching in pairs – support or obstacle	Credibility of the educator	Professional development
CODES	<i>Facilitate informative decisions</i> <i>Knowledge as power</i> <i>Knowledge as social tool</i> <i>Knowledge linked to health status</i> <i>Sharing knowledge to fight inequality</i>	<i>Adjusting information to class requests</i> <i>Using explanations that are appropriate for the class' characteristics</i> <i>Translating medical language</i>	<i>Physical environment</i> <i>Establishing interest</i> <i>Failure to reach standards</i> <i>Demanding to teach unruly classes</i>	<i>PowerPoint and illustrations</i> <i>Explanation models</i> <i>Influencing emotions</i> <i>Humour</i> <i>Dynamic</i> <i>Interactive approach</i> <i>Being relevant</i>	<i>Peer as support</i> <i>Peer-learning</i> <i>Teaching in pairs requires teamwork</i> <i>Peer for reflection</i> <i>Trust is a component of good interaction</i>	<i>Source of inspiration</i> <i>Role model</i> <i>Possesses relevant knowledge</i> <i>Expert</i> <i>Status in profession</i>	<i>Processing information from medical school</i> <i>Learning by teaching</i> <i>Development of communication skills</i> <i>TUTCH as a complement to medical school</i> <i>Teaching as a driver for learning</i> <i>Satisfying to work with primary prevention</i>

The overall theme of the study is *communicating medical knowledge to counterbalance ANT-consumption*, meaning the medical students' ambition is to tackle risk factors related to ANT-consumption by sharing their medical knowledge. In this section, the result will be presented as three categories and seven subcategories, which emerged during the analysis, and which will be illustrated by quotes from the participants.

Health education as preventive measure

The medical students claimed that a key feature of the education programme was that they were educating young people, and this was seen as an important preventive measure before

the adolescents' ANT debut. A pattern that emerged during the analysis was an ambition to decrease health inequities in society by sharing knowledge. This was considered a complex task since they had to deliver information adjusted to the target group.

Knowledge as a foundation for healthy decisions

The participants were in agreement that the main purpose of the classroom sessions was to communicate information to facilitate informed decisions, which is reflected in the curriculum of the programme. A majority described their involvement in the programme as connected to their personal belief that education has a positive impact on health status, and everyone should have the chance to take control of their health, stating that knowledge is a powerful defence against group pressure as well as the basis of healthy decision-making, and as such, a method of empowerment. School was described as the most feasible arena where health education could be conducted, an arena where everyone can be reached and be provided with the same information.

“If you believe that everyone has the right to good health, then a good place to communicate this is a place everyone visits, so school is a good place to do it, so that everyone will have at least some knowledge. Because it’s simply unethical to keep this knowledge from people” – Participant 5

A belief that knowledge they had gained from medical school gave them power over their own health was a driver to educate, a way to spread that knowledge.

“You learn a lot about your body in medical school, things you should have been taught before, there’s a lot of things that are important for the decisions you make in life. A lot of people don’t have this knowledge when they are at that point in life when they have to make the decisions.” – Participant 2

The importance of presenting information in a non-judgmental and objective manner was emphasized. This approach was established in the organisation and intended to counteract methods based on atrocity propaganda. Delivering objective fact-based information was considered the most effective way to affect adolescents' decision-making.

“Basically, the idea of the method is to plant a seed, a seed that is not based on what I tell you to do you should do, instead I’ll let you draw the conclusions” – Participant 7

Despite the conviction that people are able to make better decisions if they have the knowledge, the outcome of the teaching session was out of the participants’ control; a few of them commented on seeing pupils smoking afterwards, and also expressed an uncertainty as to the long-term effect of the session.

“You always feel less than certain, you know you’ve got good intentions, but you never know, it’s often a process, I’ll tell them something and they’ll react, and then later maybe they’ll add to it, and come to a conclusion, I don’t know how it ends, but it feels good that at least they’ve been correctly informed.” – Participant 2

Adjusting the information

A majority of the participants mentioned that the level of information they could share depended on the class characteristics, such as age, school profile, pre-knowledge, cultural background, language skills and attitudes – all of which influenced the design of the lecture. The medical students identified a big knowledge-gap between different schools and classes as a concern. Some claimed that classes with more study-oriented focus were easier to teach since the outline might attract them more, and they tended to show more interest.

“Of course, it’s easier to teach when the class in question is calm, but at the same time they’re probably not those at most risk when it comes to drug use.” – Participant 4

However, some educators could not see that social background played a role in the level of interest. They claimed social background did not affect the ability to understand the concept, but it could influence how information was presented.

“Sometimes they have preconceptions when it comes to the drugs most of them have tried, they’re very difficult to reach. Once a student ran out of the classroom because he was so upset, and that’s when you feel that you should have treaded more carefully. Now, I’m usually very careful when I talk about cannabis because it’s a very sensitive subject.” – Participant 8

An important task for the medical students was to convey their medical knowledge in a language the pupils could understand. Creating and using explanation models and the right words were stressed as very important to succeed and can be summed up in the words of Participant 5: *you have to adjust your message to the receiver.*

“Explain and most importantly not use big words and not say them too quickly, you sort of have to base it on that maybe they don’t know that much from before just in terms of language, so you have to make it a bit easier to follow, in a class like that where they train for a profession, as opposed to class where they focus on studying science and going on to university.” – Participant 6

The importance of being flexible and adjusting the message according to the needs of the receivers was emphasised. The medical students argued that the content of the lecture should be based on and adjusted to the specific needs of the class in question. An interactive approach was used, and to ensure the delivery of the most relevant message, pupils were encouraged to ask questions.

“They’ve often got ideas and heard rumours and that’s what they often ask about, so it’s good to be able to dismiss or confirm.” – Participant 3

Sometimes they were asked beforehand to discuss certain issues.

“We sometimes get suggestions from teachers beforehand, what they would like us to talk about, it could be in classes that have a lot of problems because of kids with for example ADHD taking CNS stimulants, and they would like us to talk more about it.” – Participant 1

Controlling factors influencing the goal of the session

The medical students identified several factors that impacted on the lectures. The factors varied for each session, but remained something they had to adjust to and handle. The main challenge was to maintain and establish interest in the class and the inability to do so was considered a failure. The majority stated that the educator had the main responsibility for the outcome of the lecture, and the participants identified tools and strategies they used in an effort to reach successful outcomes.

Dealing with distractions

The physical environment was argued to have an impact on the communication. Factors such as the layout of the classroom, the size of the venue or too many pupils could affect the interaction in a negative way.

“A session that didn’t go well at all, the teacher wasn’t there, it felt as if the school hadn’t organised the reception well at all, the classroom was very poorly planned, if you were behind the teacher’s desk, there was a huge distance between the desk and the first few students. Physical distance is more important than you think, the message didn’t come across, there was no interest at all” – Participant 5

The majority described feeling dissatisfaction when they failed to live up to the standard of the lecture that they were aiming to. They felt discouraged and disappointed when failing to establish interest in the class. Some of the medical students pointed out that pupils could display unwillingness to attend by where in the room they positioned themselves; pupils seated where they were more difficult to reach made it more difficult for the educator.

“A failed lecture, that’s when they refuse to listen, are sceptical and don’t ask any questions. This usually happens in classes where there are many boys, all seated by the walls, no one in the middle. You try to get them involved, but you get no response. You know that you will fail to meet their expectations since you don’t know what they want to learn” – Participant 1

A common concern was that the organisation, for the most part, is active in study-oriented schools in central Stockholm rather than in schools located in the more socio-economically vulnerable areas. Some educators had received comments from pupils saying they would have liked it if they had come earlier, before the ANT debut. The educators felt that reaching those who already were using ANT was a challenge, chances to affect these individuals were limited, and they claimed that the concept were easier to apply to those who had not debuted.

“The hardest part is to get everyone interested and involved. It varies a lot, some are really involved and others not, and often those who aren’t are probably the ones who’ll be more tempted to use drugs later on.” – Participant 4

Communication strategies

Different strategies and tools were used in order to reach the goal of the education.

The educator was argued to be responsible for creating an inclusive positive atmosphere in the classroom. An approach used by many of the educators was to give positive feedback and never discourage the pupils. Being active and flexible was argued as effective methods to involve the pupils.

“Moving in the classroom, making sure everyone’s involved, and sort of deal with anyone who seems to not be following, you can walk over to this person and talk to him or her and ask questions so that everyone in the classroom understand that they need to be awake.” – Participant 9

A good educator was identified as someone who could involve the students, show credibility by having in-depth knowledge (while being honest about what s/he did not know) as well as being flexible by adjusting to the situation.

“It’s about being flexible and finding out what type of audience you’re dealing with, how old they are, what their interests are, what they already know, what their expectations are, it could be they think this is boring or they could be really into it, there’s quite a range and you have to react to that audience and deal with it.” – Participant 7

All of the students based their lectures on PowerPoint presentations, but other methods, such as illustrations on the whiteboard, video clips, and exercises were frequently used to keep the pupils interested. Short discussions were often used to activate pupils. Humour and sharing personal experiences were often used to establish a positive interaction with the students. To involve them on an emotional level seemed to be an effective strategy to get their attention, as well as using explanations and examples that the pupils could relate to.

“I usually ask if they know anyone with lung disease or something like that to get them to talk about their experiences, because you usually get someone who says something like they’ve got an aunt with lung cancer, and then you could ask if she’s a smoker and get in to cancer incidence, trying to find some sort of emotional connection instead of ‘here’s this boring medical student talking about not doing drugs or drinking’ and that usually works.” – Participant 1

Teaching in pairs – support or obstacle

The majority described teaching in pairs as having a positive impact on the lectures; they could give each other support, it meant having a bigger knowledge bank, being able to create a dynamic atmosphere, and it was easier to tackle environmental obstacles in pairs. Teaching in pairs was also considered to support their own learning. However, the concept's success seemed to depend on how well matched they were; those who had established a good co-operation with someone, and who had actively chosen to teach together, more frequently described the experience in positive terms. The majority of the educators claimed that well-functioning teamwork could serve as support for the educator in the classroom, and could also be used for reflection and feedback.

“If you click, then that’s a good thing because you always have someone to run your idea by, you can always find an answer, and it’s a sense of security, that you don’t have to do it all by yourself, it feels, when it works, it feels a lot better being two than being alone” – Participant 6

However, during the interviews it emerged that feedback and reflection were based on a trust between the educators, and it was perceived as difficult to give feedback or suggestions for improvements to someone they did not know well. Being afraid to hurt someone’s feelings, or not being sure as to how the other person would react were obstacles in terms of providing feedback.

“We know each other well, and that’s important when giving feedback, that you can trust the person you get the feedback from, that you don’t feel as if you’re being put down and broken when you get back.” – Participant 9

There were examples of when the interaction between the educators was less than ideal, and the feeling of support was missing. Some had chosen to teach alone rather than to work with someone they did not work well with. To teach together with someone unknown could cause anxiety, which was difficult to hide during the lecture.

“The biggest challenge is when you work with someone you haven’t worked with before, and I’m kind of nervous if I’m lecturing with someone I don’t know that well, and what happens is

you feel a bit insecure, and 16-year-olds will pick up on that immediately, and they'll be more critical” – Participant 1

Peer learning was highlighted by the majority as a positive outcome of the peer teaching. They learned factual knowledge from each other during the lectures, in addition to explanation models, exercises and rhetorical strategies, and they were also inspired by each other's PowerPoint presentations.

“Well, we learn a lot from each other as well, it's not just the teaching but we also learn each time we lecture.” – Participant 8

The medical student as health communicator

The organisation argued that the idea behind the concept of using medical students as health educators was that medical knowledge, should be communicated by individuals who have a lot of knowledge in the area, as well as experience from meetings with patients suffering from conditions related to ANT. Another aspect mentioned was the proximity in age, which was considered a positive factor in the interaction, highlighting medical students as role models. The participants were in agreement with the organisation's motivation, and added the opportunity for professional development as a positive outcome of the programme.

Credibility of the communicator

The participants defined themselves as role models, experts and a source of inspiration. Objectivity and that they were visitors at the school were considered as contributing factors for the establishment of a positive relationship with the pupils.

“Medical students can also be an inspiration to young people, it's often said that a lot of people use drugs because they've got no hope for the future, no role models or anyone to look up to. But if there's someone who's not a lot older than they are, who's studying something really interesting, maybe that'll catch their attention.” – Participant 4

That they represented a well-known high-status profession was suggested to contribute to the credibility. The organisation's concept was often described as more effective compared to the concept of a former drug addicts sharing his/her life story.

“I think it’s an advantage to be a medical student, it means we know about the body and stuff, and I think they think that’s impressive, it makes it more convincing for them, so I think it’s a positive influence, the fact that you’re a medical student.” – Participant 8

Positioning themselves as possible role models was primarily because of their education, while their personal consumption pattern of substances was not a part of the concept to share. However, the medical students emphasised the importance of being reliable, and gave honest answers if they asked about their own substance use. Half of the study participants said they never use any kind of substance, while others argued the benefits of being able to demonstrate a balanced consumption pattern when it comes to alcohol.

“I’m no teetotaler, absolutely not, and I’m honest about this when I talk to the students, that I do drink sometimes, it’s socially acceptable and it’s OK if you do it in moderation, but we’re here to explain what happens if you take it to extremes, and I think that, yes, in that case, I’m a role model.” – Participant 1

Despite the fact that medical students have high health literacy, a few participants stressed the fact that they had many classmates who did display a risk behaviour.

“A lot of medical students do drink too much, even if they’re not addicted but it’s definitely hazardous use, or sort of in the so-called danger zone.” – Participant 3

Professional development

As previously mentioned, all participants stated that being an educator contributed to their professional development in several ways. They described improved rhetorical skills, increased confidence when holding lectures, improved factual knowledge and communication skills and found it easier to explain medical conditions, which was useful when informing and teaching patients and colleagues.

“I’ve learned different ways to explain medical things, which is very useful in my job when I’m instructing patients. If they’ve got questions, you should explain it in a way that they understand, by using words they know.” – Participant 9

The participants felt that they had better factual knowledge than their classmates; taking part in the programme as an educator was considered to increase their knowledge about ANT, which was a good complement to the curriculum at medical school regarding ANT. The enrolment in the organisation had provided them with an opportunity to increase their medical knowledge by processing the information from medical school when teaching others. They gained knowledge as they wanted to be well prepared and able to answer any questions from the class.

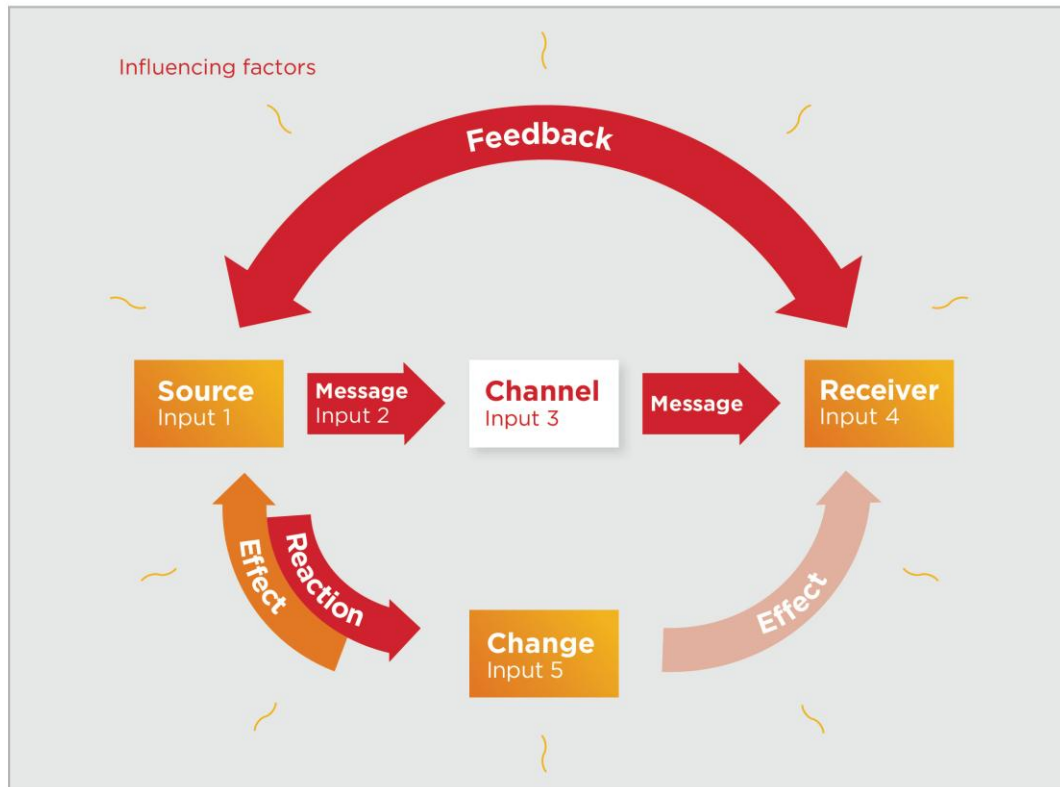
“It sticks more easily because you teach, and when you teach, facts will be easier to remember than if you just sit around studying for an exam.” – Participant 8

In general, the participants expressed satisfaction with their enrolment in the programme. This satisfaction was derived from being in a position where they could contribute to public wellness – as opposed to being a doctor, where they often meet patients when they already suffer from the consequences of unhealthy lifestyles.

Discussion

The aim of this research was to explore medical students’ experiences as health educators in an ANT prevention programme for high-schools students in Sweden. The findings show that the task is complex since several factors influence the communication process: the sender’s credibility, the design of the message and the channel, in this case interpersonal communication, which all contribute to successful communication, in addition to the receivers’ perceptions. An adapted model of the McGurie communication-behaviour model (11) with the findings in this study is presented in this section (see Figure 2).

Figure 2. Adaption of the McGurie communication-behaviour model with findings from this study, made by the researcher



Source: Medical students as experts, role-models, source of inspiration
Message: Objective and non-judgmental delivery of the ANT-prevention message
Channel: E.g. the size of the class, layout of the venue, the educators' cooperation and use of different communication strategies influence the interpersonal communication in the TUTCH-programme

Receiver: The characteristics of the class influence the design of the message and the interpretation of the message
Feedback: Interaction as a tool to guide and design the lecture
Reaction to the communication
Change: The communication and rhetorical skills as well as factual knowledge of the medical students
Effect: Professional development for the medical student

The medical student's position in the communication process

The interaction between the medical students and the high-school students was described as the core process of the programme, since it gave the medical students the ability to design the lecture according to the specific needs of the class. The medical students define their role as experts in the communication process because of their medical knowledge, including the knowledge on the subject of ANT. In the transaction of information in the TUTCH-programme, the power difference in the relationship has to be emphasized, which is similar to that in the health care system, where the imbalanced relationship is well established, where

the medical professionals are generally perceived as powerful and the receiver (e.g. patients, high-school students) as powerless. This imbalance is considered an obstacle for effective communication and relationships, and can inhibit the receiving participant's confidence in the communication and prevent him/her from e.g. asking relevant questions (5, 27). However, the medical students aim for an interactive approach by encouraging the high-school students to ask questions and emphasize being objective and non-judgmental, which can be considered important actions. This is something that is recognised in the literature as effective measures to achieve a more equal relationship, which can contribute to the success of the communication (27). It is argued that the teacher's characteristics is a contributing factor in the process of communication in learning, whereas the most effective attitudes are described as in line with the medical students approaches: being honest and non-judgmental (5). Acknowledging the different roles the participants have in the communication process contributes to the sender's ability to achieve an effective communication (27, 46).

Another aspect of this role as 'expert', is that the medical students identified themselves as having high credibility because of their future profession. Research about risks and health communication claims that the credibility of the sender is acknowledged as a key component for the communication to be effective, however, this could differ from time to time as well as between different receivers. For example, many consider 'expert communicators' as reliable sources when delivering complex health messages, but the identification of experts vary between different settings and cultures (5, 28).

In addition to the role as experts, the medical students emphasised the importance of being a role model, and a person the adolescents could relate because of their proximity in age. It is suggested that the sender of the health message does not necessarily have to be that one with greatest medical expertise, the most important ability for the target group is the ability to relate to the sender and vice versa (28). The medical students reported the importance of contextualising the message and adjusting the level of information to the target groups' characteristics, which was done using several communication strategies as discussed in the previous result section. It is claimed that if the sender has an understanding of the target group norms, values and attitudes, the sender can adjust the message to the target group needs (28). It has also been suggested that clinicians that are able to acknowledge the level of the patient's health literacy and adjust communication styles based on the needs of care takers, will have better health outcomes (12-13). However, this highlights an important issue of

health communication: the challenge of sending a message that will be correctly interpreted by the target group (27–29). The interaction between sender and receiver is based on factors such as personality traits, cultural background and intellectual capacity, as well as language level and previous experience in addition the receivers' perception of the sender, which are all factors that will have an impact on the interpretation of the message (5, 28).

The medical students mentioned that the programme often was easier to apply in science classes, which could be explained by what the literature suggests, that the receiver's ability to relate to the sender and vice versa improves the interaction (12, 28) in addition to having a high literacy making it easier to understand medical information (8). This could also indicate that the TUTCH-programme is best tailored to this type of class. Another factor that needs to be considered is that the medical students are primarily equipped with medical knowledge, and teaching in a more challenging setting could require more pedagogical knowledge to achieve an ideal learning outcome.

Teaching in pairs as a support and improvement resource

As mentioned in the result section, there were factors beyond the control of the educator constituting communication obstacles, such as the physical environment. These surrounding circumstances appeared to be easier to deal with in twos, i.e. if they were two educators interacting with the class. The literature emphasises that it is necessary for the educator to take control over environmental factors to make the communication process effective (5); in this case, teaching in pairs seems to have been a facilitating factor.

The medical students described the main challenge as the need to establish and maintain the interest of the class. A number of tools were used to that end, e.g. trying to influence the emotional level as well as designing the lecture according to what is relevant for the target group, which is in line with research that suggests that educational interventions are more likely to be successful if they are designed to be relevant for the target group in question (5, 28). This was considered a challenge, especially when the class was not interested in interacting. The majority suggested that teaching in pairs was a supporting factor in situations when it was more difficult to establish a good relationship with the class. The pair could support each other and create a more dynamic session, in addition to which it was considered rewarding to have someone to reflect with afterwards, which could be a source of

encouragement as well a way to improve the lecture. However, this was something not everyone felt comfortable with, because of a lack of conviction and tools available to them. Reflection and feedback is described as a relevant component in an educational intervention, and considered as an integral part of learning (29, 47). The experience of the medical students shows the potential benefits of teaching in pairs, which could indicate that an extended guidance and support to strengthen teaching in pairs could be beneficial for the programme, since it can serve as a supporting factor in the classroom, and contribute to personal development and learning.

Health communication training

Enrolment in the programme was described as a chance to process information from medical school by teaching others, which is a well-established method of learning (5). A beneficial outcome of the programme was the medical students' professional development in terms of communication skills, rhetorical skills, self-confidence as a speaker and increased factual knowledge, all of which were considered useful skills for their future profession (12, 27, 46-47). According to The Swedish National Board of Health and Welfare (Socialstyrelsen), health professionals play an important role when it comes to counselling patients regarding lifestyle modifications; they should use their expertise to support decisions and facilitate individual health empowerment (48). The outcome of the programme seems to contribute to the strengthening of these skills, which are highly relevant measures to take to decrease the burden of NCD in the health care sectors.

Strengths of the study

This study contributes new knowledge regarding health communication within school-based health education programmes. It provides an insight into the senders', i.e. the medical students' experience of the health communication in this unique context, which has not been studied before. The researcher had achieved a good understanding of the programme, which was valuable during the data collection and the analysis, and appropriate measures were taken throughout the process in order to increase the trustworthiness of the data.

Limitations of the study

Due to time and financial constraints, the study population was narrowed down to the medical students based in Stockholm, making the applicability to the TUTCH-programme in other

cities uncertain, however, the findings can be used as a model to understand the views of the health educators of the TUTCH-programme. The study only investigated the medical students' experiences of the communication process, which can be considered a limitation; it would have been beneficial to explore the high-school students' experience as well, preferably from a gender perspective, as it could have increased the understanding of the information transaction process.

Implication for policy and practice

The result of this study is recommended to be used as inspiration for the development of health education programmes and for the training of health communication, since the findings show the importance of understanding the role of the health educator in the specific context as well as factors influencing the communication. In Sweden, health communication is facing a major challenge, where marginalised immigrants are those with poorest health (30) and as such have the greatest need for health education (31–33) but cultural and language barriers interfere with the transaction of the message, which requires health communicators in the form of health professionals with an awareness of their own limitations and strengths as a communicators. Programmes such as TUTCH should be considered as interesting in this context, as the outcome leads to reciprocal learning; both the medical students and the target group will learn from the experience. The programme could expand to target refugees and other immigrants, a type of intervention which requires support from people with an understanding of social determinants (1) and the cultural context, in addition to interpreters. It would be an opportunity for immigrants to meet representatives from the health care sector, at the same time as it would serve as training for the medical students, which can result in physicians equipped with valuable tools to communicate in settings where factors such as culture and language are obstacles; this would result in the type of physicians that the Swedish health sector greatly needs.

Further; mental health is closely linked to socio-economic status and risk taking behaviour (49), but is often a neglected part of the global health (40, 49). For this reason, the programme could benefit from acknowledging mental health and its connections to psychoactive use (50) e.g. by involving psychologist student, which would result in interprofessional learning (51), and a more comprehensive health education programme.

Sweden and other European high-income countries demonstrate a decreasing trend in terms of ANT-consumption, where policy implementations such as raised taxes and restriction of access have contributed to the reduction (2), thus, a main concern is health inequities among adolescents within these countries (50), whereas the situation in many low and middle income countries is even more alarming, since they deal with a less regulated market, weaker policies and an increasing tobacco- (2) and alcohol consumption among adolescents (52). Health education should therefore be considered highly relevant in more vulnerable settings where populations are exposed to harmful products to a greater extent (2, 53). Interventions where health care students serve as health educators would also contribute to increase the health communication skills among future health care professionals: an important action since skilled health workforce is a determinant factor for reaching universal health coverage (54).

Indications for further research

Further research could contribute with a better understanding of the health communication in the TUTCH-programme by investigating the communication process from the perspective of the receivers, i.e. the high-school students. It would also be beneficial to study the long-term effect of the programme, both in terms of the medical students' professional development as well as the outcome for the high school-students'. This would contribute to a deeper understanding of the effectiveness of the programme. A comparative study between different cities where the TUTCH-programme is active could contribute to an understanding of unique socio-demographic factors' influence on the programme.

Conclusion

This study contributes with new knowledge of the complex phenomenon of health education, where the credibility, flexibility and capacity to contextualise the message of the senders, in this case the medical students, as well as the high-school students' background and characteristics seems to contribute to successful communication. The study concludes that medical students benefit from being involved in the programme as they develop communication skills as well as factual knowledge, both of which are of importance for their future career and in the fight against NCDs.

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Appendix 1: Interview guide – English version

Introduction

What do you expect from the interview?

Do you remember what initially attracted you to work for Choice?

Theme 1 – Teaching

Do you remember your first teaching experience?

What were your expectations?

How did you prepare?

How did it go? Did it turn out the way you expected?

What was the response from the class you taught?

Did you teach in pairs? Was your peer experienced/new?

Could you describe the interaction between the two of you?

What is special about teaching high school students about ANT prevention?

Do you feel that there is any difference between teaching different groups? Gender? Age?

Different high school programmes?

How do you deal with teaching different classes, ages?

What do you offer in terms of ANT-prevention that regular schoolteachers do not?

What is the response from pupils/teachers?

Let us compare the difference between a successful teaching session and a session that was less successful.

Tell me about the successful session, what were some of the important components?

Comparing it to a less successful session, could you describe what happened and what components you think had an impact? How did you handle the situation?

Have you had a session that has turned from challenging to successful?

What strategies did you use that particular session?

Theme 2 – Teaching in pairs and your own learning

You usually teach in pairs, could you tell me about your thoughts and experience?

What are some of the strengths and challenges?

How does personal chemistry between educators influence the teaching session?

Do you learn from each other?

Do you remember a situation when you learnt anything in specific from another medical student at Choice?

When you taught another medical student something?

Is there any structured learning? If so, in what way? For example in-house training.

The literature mentions the term “peer-learning”, i.e. peers learning from and with each other through interaction and observation when performing a task.

Is this something you have experienced that at Choice?

Do you remember any particular situation?

Can peer-learning be compared with the way you learn in medical school in any way? What are some of the similarities and differences?

How does communication between educators impact on the development of skills?

Have you given or received feedback?

Do you think communication between peers is stimulated within the organisation?

How do you communicate before, during and after a teaching session?

Theme 3 – Professional development

What do you consider to be your role as an ANT-prevention educator for youths?

What is your definition of an exceptional educator?

What makes you a suitable educator?

What is special about medical students?

Could you describe ANT-habits in your own life and surroundings?

Has your opinion of the meaning of primary-prevention changed in any way since you started teaching?

What have you gained from medical school?

From teaching high-school students?

What strategies do you think are most effective when it comes to primary prevention?

What role do doctors and other health care professionals play in this?

How do you think you will benefit from your experience as health literacy educator in your present or future profession?

Do you have any suggestions for the further development of this programme?

Other professionals that could be involved?

Other target populations?

Include other risk factors or lifestyle factors?

Do you have anything you want to add?

How did you experience this interview?

Additional information

When did you start teaching at Choice?

Approximately how many times have you taught? High school? Junior high school? Age, year of medical school, current place of work?

Thanks for your participation!

Appendix 2: Interview guide – Swedish version

Introduktion

Vad har du för förväntningar på intervjun?

Minns du anledningen till varför du började på Choice?

Tema 1- Att undervisa

Kan du beskriva ditt första undervisningstillfälle?

Vad hade du för förväntningar innan?

Hur förberedde du dig?

Blev det som du tänkt dig?

Hur upplevde du respons från klassen du undervisade för?

Utbildade ni i par?

Var den andre ny/erfaren?

Hur var samspelet mellan er?

Vad är unikt med att undervisa angående ANT för högstadiet/gymnasieungdomar?

Upplever du en skillnad att undervisa för olika grupper? Tjejer/killar? Ålder? Olika gymnasieprogram?

Hur hanterar du att undervisa för olika klasser, åldrar?

Vad erbjuder du i jämförelse med ordinarie lärare gällandes ANT- preventionsarbete?

Vad får du för respons av elever/lärare?

Låt oss titta på skillnaden på ett lyckat undervisningstillfälle och ett mindre lyckat tillfälle

Berätta om ett exempel du erfarit som var lyckat, vilka komponenter tror du spelade in?

Och i jämförelse med en mindre lyckad situation? Beskriv vad som hände, vad var orsaken tror du?

Hur hanterades detta?

Har du vart med om att en föreläsning vänt från utmanande till lyckad?

Vad hade du då använt för strategier?

Tema 2 – Parvis undervisning och ditt eget lärande

Ni undervisar vanligtvis i par, kan du berätta om dina upplevelser/tankar kring det upplägget?

Vad är styrkorna och utmaningarna i detta?

Hur påverkar personkemin mellan föreläsare in på föreläsningen?

Lär ni av varandra?

Minns du ett exempel då du lärt dig något specifikt av den andra föreläsaren?

När du lärt en läkarstudent?

Sker det strukturerat fram av lärande, isåfall hur? ex internutbildning?

I litteraturen finns ett begrepp, sk. "peer-learning", där peers via interaktion och observation lär av och med varandra vid genomförande av uppgift,

Har du upplevt det någon gång på Choice?

Minns du något särskilt tillfälle?

Är det möjligt att jämföra peer-learning med hur du lär dig på läkarutbildningen? Vad är det för skillnader och likheter?

Vilken betydelse har kommunikation mellan er föreläsare för utveckling av färdigheter?

Har du vart med om att du gett eller fått feedback, berätta.

Tycker du att det är något som stimuleras inom Choice?

Hur kommunicerar ni mellan varandra, före, under och efter en föreläsning?

Tema 3- Yrkesutveckling

Hur ser du på din egen roll som föreläsare för ungdomar gällandes ANT?

Vad kännetecknar en bra föreläsare?

Vad har DU som gör dig till en lämplig föreläsare?

Vad är unikt för läkarstudenter?

Hur är ANT-vanor i ditt eget liv och din omgivning?

Har din syn på betydelsen av primär-preventionsarbete ändrats sedan du började föreläsa?

Vad har får du med dig på från din läkarutbildning?

Från dina föreläsningar för gymnasieklasser?

Vilka metoder tror du är mest effektfulla angående preventionsarbete?

Vilken betydelse har läkare/hälso-personal i detta?

Hur kan du i din kommande/nuvarande profession tillämpa din erfarenhet som hälsokunskaps-föreläsare?

Hur skulle du vilja se att detta program vidareutvecklas?

Andra professioner som kan involveras?

Andra målgrupper?

Involvera fler riskfaktorer, livsstilsfaktorer?

Övrigt, något du vill tillägga?

Hur upplevde du denna intervju?

Övrig information

När började du undervisa på Choice?

Hur många gånger cirka har du undervisat? Gymnasiet/högstadiet?

Ålder, termin på läkarlinjen/ arbetsplats nu?

Tack för din medverkan!

Appendix 3: Letter of invitation – English version



Information for research participants

Information and study participation request

Study: Medical students' experiences as health literacy educators in an alcohol, narcotics and tobacco prevention programme in Swedish high schools

Background

My name is Annie Velander and I am enrolled in the Master's programme Global Health at Karolinska Institutet. I am currently writing my Master's thesis about medical students' experience of working as health literacy educators in a prevention programme for junior high and high-school students.

The study aims to investigate medical students' experiences of working with primary prevention within the TUTCH-concept by means of interviews. We hope to gain knowledge about medical students' learning and development through this study, and also whether the role as health-literacy educator has an effect on the student's future profession. The result will be used for further development of TUTCH, and the aim is to publish the result in a relevant paper.

Participation request

We ask for your participation in the study as a medical student and a health-literacy educator.

How the study is carried out

The study will include 10–15 medical students with experience of working with TUTCH. Individual interviews will be conducted, lasting approximately 1 hour. To facilitate your participation, you may suggest a location for the interview that is convenient for you, for example a library or another location nearby.

Confidentially and handling of the data

The interviews will be recorded and transcribed, all recorded material will be anonymised and kept locked away according to guidelines. The result of the study will be presented anonymously and it will not be possible to connect it to a specific person, workplace or group. Karolinska Institutet, Institution for Learning, Informatics, Management and Ethics (LIME), is responsible for your personal data in the study.

Compensation

Participants will not be financially compensated.

How will I receive information about the study's result?

You will receive information about the result, and it will also be presented in a Master's thesis in Global Health.

Voluntary participation

The study follows ethical guidelines and your participation in the study is voluntary. Participation in the study is voluntarily and you can at any time, without any further explanation, withdraw your participation. You may also choose to not answer any of the questions; in no way will it affect your future work as health-literacy educator.

Responsible and contact person for the study:

Professor Solvig Ekblad, supervisor: solvig.ekblad@ki.se

Contact persons

Annie Velandar: annie.velander@stud.ki.se, 073-065 89 37

Linnéa Lundqvist: linnea@stiftelsenchoice.se

Robert Åkesson: robert@stiftelsenchoice.se



**Karolinska
Institutet**

Study: Medical students' experiences as health literacy educators in an alcohol, narcotics and tobacco prevention programme in Swedish high schools

Consent form

I have received information about the study, and been provided with the opportunity to ask questions and receive answers. I hereby agree to participate in the study, and I am aware that the interview will be recorded. I agree to my answers being used for the result of the study on a group level and its publication. I may withdraw my participation at any point in time without further explanation.

Age (year of birth): _____

Sex: _____

.....

Place and date

.....

Signature

.....

Clarification

.....

Received by:

Date:

Annie Velander, Karolinska Institutet

Appendix 4: Letter of invitation – Swedish version



Information till forskningsdeltagare

Information och förfrågan om att delta i studie

Studie: Medical students' experiences as health literacy educators in an alcohol narcotics and tobacco prevention programme in Swedish high schools

Bakgrund

Jag heter Annie Velander och studerar masterutbildningen Global Health på Karolinska institutet. Jag skriver nu min masteruppsats som handlar om läkarstudenters erfarenhet av att arbeta som hälsokunskaps-utbildare i ett preventionsprogram för högstadie- och gymnasielever.

Syftet med studien är att genom intervjuer undersöka läkarstudenters upplevelser av att arbeta med primär prevention inom TUTCH-konceptet. Vi hoppas att med denna studie få veta mer om läkarstudenters eget lärande och utveckling, och om rollen som hälso-utbildare påverkar utveckling i den kommande yrkesprofessionen. Resultatet kommer ligga till underlag för vidare utveckling av TUTCH och målet är att få resultatet publicerat i relevant tidskrift.

Förfrågan om deltagande

Du tillfrågas nu om att delta i studien då du är läkarstudent och hälso-kunskaps-utbildare.

Hur går studien till

Studien kommer innefatta ca 10-15 stycken läkarstudenter med erfarenhet av att jobba med TUTCH-konceptet. Individuella intervjuer kommer utföras och tidsåtgången beräknas till cirka 1 timme. För att göra ditt deltagande så smidigt som möjligt får du som deltagare föreslå lämplig plats för intervju, ex. bibliotek eller annan närliggande lokal.

Sekretess och hantering av data

Intervjuerna kommer att spelas in och transkriberas. Allt inspelat material är anonymt och förvaras inlåst enligt gällande riktlinjer. Resultat av studien kommer att presenteras anonymt och kommer inte att kunna kopplas till någon specifik person, arbetsplats eller grupp. Karolinska Institutet, Institutionen för Lärande, Informatik, Management och Etik (LIME) är ansvarig för dina personuppgifter i studien.

Ersättning

Ingen ekonomisk ersättning utgår.

Hur kan jag få information om studiens resultat?

Resultatet av studien kommer att delges dig och redovisas i en Masteruppsats i Global hälsa.

Frivillighet

Studien följer etiska riktlinjer och ditt deltagande i studien är helt frivilligt. Deltagande i forskningsprojektet är frivilligt och du kan när som helst, utan förklaring avbryta ditt deltagande. Du kan också välja att avstå från att svara på en eller flera frågor. Det påverkar inte på något sätt din fortsatta medverkan som hälso-utbildare.

Ansvarig och kontaktperson

Ansvarig för studien är:

Professor Solvig Ekblad, handledare: solvig.ekblad@ki.se

Kontaktpersoner för studien är

Annie Velander: annie.velander@stud.ki.se, 073-065 89 37

Linnéa Lundqvist: linnea@stiftelsenchoice.se

Robert Åkesson: robert@stiftelsenchoice.se



**Studie: Evaluation of an alcohol, narcotics and tobacco prevention programme –
Medical students' experiences as health educators in Swedish high schools**

Samtyckeblankett

Jag har fått information om studien, därmed fått tillfälle att ställa frågor och fått frågorna besvarade. Jag samtycker härmed till att delta i studien och är medveten om att intervjun kommer att ljudinspelas. Jag samtycker till att ni använder mina svar för att kunna sammanställa resultaten av studien på gruppnivå för publikation. Det står mig fritt att avbryta intervjun när helst jag finner detta lämpligt utan att behöva ge några förklaringar.

Ålder (födelseår): _____

Kön: _____

.....

Ort och datum

.....

Underskrift

.....

Namnförtydligande

.....

Mottagits av:

Datum:

Annie Velander, Karolinska Institutet

Appendix 5: Background information, participants in the group interview

Table 4. Background information, participants in the group interview

Participant	Duration of interview	Gender/ Age	Started at Choice	Current position	Number of teaching sessions
1	60 min	F, 28	2014	Student 10 th semester	8
2		M, 28	2015	Student 10 th semester	6