

Attitudes towards the use of mouth and face guards in Swedish ice hockey: part I. Materials and method

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Abstract – Background/aim: The most common method to study the use and attitudes of mouth and face guards is a limited number of preprepared questions. This approach, however, risks information restriction and lowers the general value of the study. The aim of this study was therefore to present a phenomenographic approach to capture the use and attitudes towards mouth and face guards in two Swedish ice hockey clubs. **Materials and method:** The phenomenographic study was set up as 12 focus group interviews: six interviews with one elite and six interviews with one division 3 ice hockey club in Sweden. A number of categories were identified, which became the basis for how the results are presented. **Results:** The participants inspired each other to speak freely, which allowed for much wider and deeper discussions than was expected. In comparison with the use of a preprepared questionnaire with a limited number of questions sent home by post, this method included comments from the participants and revealed new angles of approach in 12 identified categories. **Conclusions:** Using a phenomenographic research method, more variations and different apprehensions could be revealed than what would be possible with a set of preprepared questions sent by post or used in individual interviews.

During the past few decades, several authors have described the attitudes of athletes' who use a mouth guard within sports (1–7). The method of choice has been to use a questionnaire format containing a limited set of preprepared questions. This type of format has mostly been sent to the participants' home by post, where each participant answered the questions in writing (4–6).

The 'Athletic Mouth Guard Attitude Questionnaire' is one example of such a questionnaire (6). This questionnaire includes a five-point Likert scale from 1 ('Complete agreement') to 5 ('Agreement is lacking'). This format measures the variables in quantitative terms (e.g. the number of participants using a mouth guard or the number of participants who feel that the mouth guard is uncomfortable to use). This method probably has the ability to reduce the amount of information presented, such as new questions or apprehensions raised by the attitudes of other participants in the study. Instead, the use of an instrument that does not restrict the participants' information, but rather increases the amount of information would be the preferred choice. One such instrument is the phenomenographic method, which will be introduced in this study. Because this instrument is qualitative, it can generate a

greater amount of information than quantitative methods.

The aim of this study was to present a phenomenographic approach in evaluating the use and attitudes towards mouth and face guards in two Swedish ice hockey clubs.

Materials and methods

Definition of attitude

Rokeach defines attitude as 'a relatively sustainable organization of ideas around a subject or a situation which makes a person respond and act in a prioritized way (8). A person with a certain attitude would easier gain information in accordance with that person's own attitude'.

Phenomenographic analysis

Phenomenography is a qualitative and empirical research approach developed by researchers at the University of Gothenburg, Sweden in the early 1970s. This method has been used extensively in educational research in which the process of learning is in focus

(9). The concept *phenomenon* originates from the Greek language and means 'to make something evident', while *graphic* means 'to describe' (10). Phenomenographic research describes 'how people *grasp* the world', not on 'how the world is *per se*'. An apprehension is not what we could call an attitude, but a fundamental understanding of something. Apprehension within phenomenography is an implicit and spontaneous way to conduct oneself in the surrounding world. Marton & Svensson (11) describe apprehension as 'something implicit that does not need to be told or it cannot be told because it has never been a subject of reflexion'. According to these authors, apprehension is 'the frame of reference in which we collect our knowledge or the basis on which we build our reasoning'.

The starting point in phenomenography is that our world is the place we take part in and where we apprehend different phenomena in different qualitative ways. The emphasis in a phenomenographic study is on 'reality as conceived' and 'how things are experienced'. The focus is on variation, variation in both the perceptions of the phenomenon as experienced by the actor and in the 'ways of seeing something' as experienced and described by the researcher.

The empirical base in phenomenography is the interviews and a qualitative analysis of these interviews, where different ways to apprehend phenomena are described and analysed. The interviews are loosely structured, and the participants are relatively free to discuss the topic as they wish. Despite this loose structure, there are certain unique questions of special importance in every phenomenographic study that should be evaluated. When a number of persons are interviewed, sooner or later saturation is reached and most apprehensions of the phenomena have been discussed.

The participants often interpret what has been said during the discussions. This process implies that they sometimes do not answer the questions directly, but instead give their unique interpretation of the question. The analysis should therefore describe the variation of apprehensions in the interview material. During this process, a phenomenographic description of the results could be performed as a limited number of qualitatively differentiated categories. The overall purpose is to discover these categories.

The interviews are recorded on tape and written word-by-word, including repetitions, wrong starts, pauses and help from 'backers' who are not called upon to speak. The analysis of the text is a constant change between reading and reflexion, a process in which you look for similarities as well as differences.

According to Dahlgren & Fallsberg (12), the phenomenographic analysis could be described in the following seven steps:

- 1 *Get acquainted with the material.* The researcher reads the transcribed material several times.
- 2 *Condensing.* The most significant expressions are chosen to give a representative rendering of the discussion.
- 3 *Comparison.* The expressions are compared to find similarities and differences.

- 4 *Grouping.* Similar expressions are brought together.
- 5 *Articulation.* A preliminary attempt to describe the essence within every group of answers (steps 4 and 5 often have to be repeated several times to arrive at an acceptable analysis).
- 6 *Headlining.* The different categories are characterized with appropriate linguistic expressions.
- 7 *Contrasting.* The discovered categories are compared with each other concerning similarities and differences.

The engagement in every interview group was measured by calculating the number of contributions to the discussion in every category. Except from the categories, specific citations are also presented. The citations illustrate and deepen the understanding and help to clarify the distinctions of each category.

Focus groups

The collection of the material was accomplished by conducting interviews in certain focus groups. Each participant in the groups expresses his own values and views. An individual participant's apprehensions lead to associations and reactions among the others in the group, and thus, a large number of perspectives on a certain subject or question could be elucidated (13). The participants in the focus group help each other to discover and illustrate thoughts and approaches in a way that would be too complicated and take too long time in private interviews. Consequently, the unit of analysis is the focus group and not the individual participant. The size of a focus group varies but usually it consists of between four and 12 participants. Each focus group is led by a moderator who should not interfere in the discussion, but instead should keep the discussion within the frame of the topic in question and, if necessary, with the help from a question guide (Table 1).

Accomplishment

Folksam (a Swedish customer-owned insurance company) and The Swedish Ice Hockey Association arranged that one elite and one division 3 ice hockey club participated in the study voluntarily. The selection of the clubs was based on the fact that running an elite club involves different types of activity than running a division 3 club (e.g. marketing strategies, cost factors and strategic decisions), which probably affects the two clubs differently. Folksam insured both clubs through their sport insurances. Both clubs conducted activities for youth, junior and senior players. The invitation was sent to the chairman of both clubs. The participators in the interviews were chosen strategically in cooperation with respective club management teams. This was done because participants with different opinions but the same group adherent should be mixed in every group (e.g. a senior player group, a referee group or a parent group). In the result, the elite ice hockey club was referred to as 'elite' and the division 3 ice hockey club as 'division 3'.

Table 1. The question guide¹ used by the moderator in the focus group discussions

<p>What is your reaction after having seen the video and the headlines in the newspapers? Do you or other persons you know have experiences of dental or jaw injuries? <u>What is your opinion about protection guards; in particular, your views on mouth and face guards?</u> Which protection guards are mandatory in ice hockey? In which situations, are there an increased risk of a facial injury? <u>Why do you leave the face guard when it is no longer mandatory to use it?</u> Does the helmet visor work as a protection? <u>What are your criteria for an acceptable mouth or face guard?</u> How do you react when a player, despite no injury, chooses to use a face guard? How do you believe other people would react (for example, other players, the audience, sport journalists and sponsors)? What is a 'cage bird'? Does a player who chooses to use some kind of face guard act poorer than other players? Views, ideas? A player who has recently been injured wishes to play an important game and chooses to use a face guard that includes a jaw arch. What are your opinions regarding this choice? <u>How do you believe other groups of people look at the use of mouth and face guards?</u> <u>What kind of an image do you believe a player wishes to represent?</u> What kinds of qualities do you believe sponsors and scouts look for when they search for new players? What are your opinions about the following statements: (a) aggression and violence among men are often described as an exciting and rewarding behaviour and (b) athletes who play with pain are often portrayed as heroes Whose responsibility is it if an injury or a near-accident occurs? What responsibility do you have yourself to reduce injuries? Has the ice hockey game changed during your time as a player? Why did you become an ice hockey player? <u>Do you have any idols in ice hockey?</u> What does a good ice hockey game look like? <u>What do you believe could increase the use of a mouth or face guard?</u> Whose responsibility is it to avoid ice hockey injuries? Is it possible for a referee to be more 'allowing' in certain situations? What will ice hockey be like in 10 years?</p>
<p>¹The underlined questions were always asked.</p>

A letter of invitation was sent to each participator that presented the purpose of the study. The participators in the elite and division 3 were youth (10–12 years of age), junior players (with a maximum age of 18 years), senior players, referees, club management and parents. In the youngest group, permission to participate had to be granted from their parents. In total, 57 persons participated in 12 focus groups, with an average of four persons in each group. The minimum number of participants in a focus group was four persons and the maximum eight. The interviews were performed from October to November 2001. Those who performed the interviews had little or no experience in ice hockey.

All interviews were performed at each ice hockey club's training facilities. The participants were placed around a table and some refreshment was served. The moderator informed the participants of the purpose of the interview and its implementation. The length of the interviews varied between 45 and 90 min. If the activity in the group decreased, the moderator could choose a question from the question guide. The group could then decide to reply to the suggested question or reject it. In the question guide, there were seven underlined questions of special importance, which the moderator always tested on each focus group (Table 1). The interviews were recorded with a video camera and a tape recorder.

The material at each interview session consisted of the following:

1 Material to stimulate the discussion.

2 A question guide.

The intention with the material was to start the discussion, which consisted of the following:

- 1 A 4-min long video from a sport programme in Swedish television showing an elite ice hockey player being hit by an ice hockey stick that causes dental injuries. The injured player gave written permission for the video to be viewed under these circumstances.
- 2 Articles from different newspapers showing dental and face injuries that were due to ice hockey, costs of sport injuries, attitudes to mouth and face guards, interpretation of rules, focus on certain ice hockey players and the macho concept.
- 3 A presentation of different types of protection device aimed to protect the face and teeth.

Ethical approval

The study was approved by the Ethic and Science Committee in Linköping, Sweden.

Results

With the aid of focus group interviews and a quality analysis, 12 categories formed the base for the presentation of the results. The categories that were found to engage the participants the most included 'Ice hockey is a high-velocity collision sport in which injuries are expected', 'Attitudes towards personal protection guards' and 'Suggested measures'. A deeper and more

extensive presentation of the results will be presented in a future study.

Discussion

The phenomenographic method

A basic prerequisite to drawing valid conclusions in scientific studies is the trustworthiness of the results, that is, the validity and reliability of the data. In quantitative research, validity and reliability are used, which is not the case in qualitative investigations. Instead, the expression *credibility* is often used in connection with qualitative research (14).

In a phenomenographic study, the interviews must end up in an understandable result. One essential component is the categories and how they are understood. This is especially important when evaluating the conclusions. 'The reader must be able to see what the researcher saw, irrespective if the reader agrees or not' (15). In qualitative analysis, the meaning of the statements is interpreted, that is, is the system of categories probable? In this case, 'The original determination of the describing categories is a form of a discovery and discoveries do not need to be able to copy. On the other hand, when the categories have been discovered, it must be possible to reach a high degree of accordance if they exist or not if others are going to find the same categories' (16).

A criterion on the value of a study is its external validity (17), that is, the benefit the research brings to the practice. In this study, the benefit is to which extent the results can increase our understanding of why ice hockey players use (or chose not to use) mouth or face guards.

Focus groups

The aim of the focus groups is to collect qualitative information, that is, to study peoples' attitudes and valuations. The focused interview increases the participants' capacity to present more tangible, specific and personal answers, which, at the same time, reflect cognitive as well as affective aspects. The moderator is nongoverning, which makes the interview a unique opportunity for the participants to present differences and variations in opinions and attitudes. In a tolerating climate, the participants inspire each other to be more proactive and to express themselves more freely. The participants recognize things they normally should not have remembered, and in a relatively short time, a large amount of data could be collected on the participants varying opinions and attitudes.

The disadvantage with this method is that one or more informal leaders can monopolize the discussion and together dominate the focus group by picking subjects more personal to themselves, which would restrict the conversation. Using too large focus groups, there is a risk to start discussions of little or no interest. The participants can also interrupt each other and prevent others from exploring subjects more fully. A large focus group can also have a negative impact on the

participants, if the discussions concern topics not socially accepted. On these occasions, the moderator has a responsibility to intervene by asking if the topic is appropriate to all participants in the focus group. Furthermore, the moderator must have the ability to identify and minimize these types of topic.

When the individuals are assigned to the different focus groups, participants with a common topic of discussion and function are put in the same groups. A great advantage is if the participants have earlier been characterized as having different opinions on a certain subject matter. Threats to the credibility of the participants' responses are ingratiation and being overly polite (18), or that the forces of group communication influence the participants' attitudes (19, 20).

For example:

- 1 *Compliance* may arise when a participant answers in a way that he believes the moderator would like him to answer. In this case, the moderator should avoid expressions of approval.
- 2 *Identification* could emerge, when a participant answers exactly as another participant that he admires.
- 3 *Internalization* is an attitude shaped by internalization, that is, assessments from the surrounding world are incorporated within the individual. The goal of the researcher is to uncover this kind of information. In a group situation, this is often the most difficult information to acquire because of group dynamic effects. In this case, the moderator should make it easy for the participant to dare to reveal these internalized attitudes.

If the discussion starts to decline, the moderator could improve the situation by using the question guide. To make it easier to support the group, the moderator could repeat a question or a comment from any of the participants that he regarded had not been dealt with in an adequate manner.

According to Albrect et al. (20), information generated in a focus group presents more ecological valid data than information presented by single persons.

A comparison with other studies

Several studies have reported a need to investigate not only the player's attitude but also the attitude of other persons concerning the general recommendation to use mouth guards in sports (1, 2). A problem is that despite the past decades ambitious work to study the attitudes of parents, players, officials and trainers, the task of increasing the use of mouth guards has not received the same attention as other sports injuries. This lack of attention is probably due to the difficulties to gain knowledge about attitudes when the target groups are difficult to reach, difficulty in finding suitable questions and self-reported data may not always be accurate (3). However, it can also be that dental injuries seldom receive the attention they deserve.

Another reason for these difficulties could be that other studies have often used a postal preprepared questionnaire with a limited number of questions (4–6). Such an approach includes the risk of restricting

information from the participants and therefore the value of those studies. New angles of approach could get lost. Details, hesitations, restarts, attempts to contribute to the discussion and beliefs are important pieces of information, as well as (and perhaps most importantly) the participants' personal choice of questions. One example of a preprepared questionnaire is the 'Athletic Mouth Guard Attitude Questionnaire'. The questionnaire contains three parts. The first part includes demographic information, the second part measures dental protection statistics and the third part measures the player's attitude towards mouth guard. A five-point Likert scale is used to measure each dimension (Complete agreement = 1 to Agreement is lacking = 5) (6). The major difference in the 'Athletic Mouth Guard Attitude Questionnaire' and the phenomenographic approach presented in this study is that the number and different types of category in the latter are not decided in advance. The number and types of category instead depends on the group dynamics that takes place in the focus group setting.

The results in a phenomenographic study are not to estimate how many participants in a focus group have the same apprehension, but rather to find as many qualitatively varying apprehensions as possible in each focus group.

A closer presentation and a more specific discussion of the results will be presented in a study under preparation. The participants' proposal of measures to reduce dental and face injuries in that article covers a broad spectrum of areas of study, including cooperation, responsibility, information, education, ethical and moral behaviour, compulsory use of mouth guards and the development of mouth and face guards.

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References

- Ranalli DN, Lancaster DM. Attitudes of college football coaches regarding NCAA mouth guard regulations and player compliance. *J Public Health Dent* 1995;3:139–42.
- Ranalli DN, Lancaster DM, Mullig AL. Lip service. *NY State Dent J* 1995;7:34–8.
- Gardiner DM, Ranalli DN. Attitudinal factors influencing mouth guard utilization. *Dent Clin North Am* 2000;1:53–65.
- Lancaster DM, Ranalli DN. Comparative evaluation of college football official's attitudes toward NCAA mouth guard regulations and player compliance. *Pediatr Dent* 1993;15:398–402.
- Ranalli DN, Lancaster DM. Attitudes of college football officials regarding NCAA mouth guard regulations and player compliance. *J Public Health Dent* 1993;53:96–100.
- Berry DC, Miller MG, Leow W. Attitudes of Central Collegiate Hockey Association ice hockey players toward athletic mouth guard usage. *J Public Health Dent* 2005;2:71–5.
- Chapman PJ. Players' attitudes to mouth guards and prevalence of orofacial injuries in the 1987 US rugby football team. *Am J Sports Med* 1989;17:690–1.
- Rokeach M. Beliefs, attitudes and values. London: Jossey-Bass; 1972.
- Uljens M. Fenomenografi: Forskning om uppfattningar. Lund: Studentlitteratur; 1989. In Swedish.
- Krokmark T. Fenomenografisk didaktik (Gothenburg studies in educational sciences, 63). Göteborg: Acta Universitatis Gothoburgensis; 1987. In Swedish.
- Marton F, Svensson L. Att studera omvärldsuppfattning: Två bidrag till metodologin (Rapport Nr 158). Göteborg: Göteborgs universitet. Pedagogiska institutionen; 1978. 20 pp. In Swedish.
- Dahlgren LO, Fallsberg M. Phenomenography as a qualitative approach in social pharmacy research. *J Soc Adm Pharm* 1991;8:150–6 (p. 152).
- Obert C, Forsell M. Fokusgrupp – ett enkelt sätt att mäta kvalitet. Helsingborg: Kommunlitteratur AB; 2000. In Swedish.
- Trost J. Kvalitativa intervjuer. Lund: Studentlitteratur; 1997. In Swedish.
- Giorgi A. An application of phenomenological method in psychology. In: Giorgi A, Fisher W, Murray F, editors. *Duquesne studies in phenomenological psychology*. Pittsburgh: Duquesne University Press, 1975. p. 97.
- Marton F. Phenomenography – describing conceptions of the world around us. *Instr Sci* 1981;10:177–200 (p. 148).
- Howe K, Eisenhart M. Standards for qualitative (and quantitative) research: a prolegomenon. *Educ Res* 1990;4:2–9.
- Kreuger RA. Focus groups: a practical guide for applied research, 2nd edn. Thousand Oaks: Sage; 1994.
- Kelman H. Processes of opinion change. *Public Opin Q* 1961;25:57–78.
- Albrect TL, Johnsson MG, Walther JB. Understanding communication processes in focus groups. In: Morgan DL, editor. *Successful focus groups. Advancing the state of the art*. Newbury Park: Sage Publications; 1993. p. 51–64.