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Full Length Research Paper

Undergraduate physical therapy students' experiences of supervision during bachelor thesis course

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Studies evaluating scientific supervision at the undergraduate level are few and heterogeneous. The aim of this study was to further explore undergraduate students' experiences of and thoughts about scientific supervision. The sample of informants consisted of 13 physical therapy students from two Swedish universities. Data collection was done using semi-structured interviews covering the areas of supervision and collaboration. Data analysis was performed according to qualitative content analysis. Three themes emerged from the interviews- the role of the supervisor, the student's perception of uncertainty and structure of the supervision. Physical therapy students' experience of their supervision was dependent on the supervisors' attributes, both favourable and unfavourable, difficulties with communication, being disregarded and affected by the supervisors' personal views. This was also put in the context of the current form of supervision, as individual and group supervision brought both positive and negative factors to the experience of the process.

Keywords: Physical therapy students, experiences of supervision, bachelor thesis course, undergraduate level

BACKGROUND

Scientific supervision as performed during bachelor courses is a regular role for lecturers at higher education institutions. The main aim of the thesis at the undergraduate level is to give students basic knowledge about the research process (Meeus, van Looy and Libotton 2004). Scientific supervision differs from other forms of teaching and learning in higher education in its peculiarly intense and negotiated character, as well as in its requirements for a blend of pedagogical and personal relationship skills (Grant 2003). Therefore, it is demanding primarily due to that the students have the

lowest degree of autonomy (Wisker 2012). There are large variations both in the amount of time that is devoted to supervision and the supervisors' approach (Handal and Lauvås 2008).

Fundamentally though, students are expected to produce a thesis but they do not have the knowledge of how to do so (Manatunga and Goozée 2007). They dedicate different amounts of time to the task and are, more or less, confident and interested in the topic (Högskoleverket 2003). The students' sex, age,

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family status, social background and previous studies also contribute as factors in the collaboration between student and supervisor (Lidell et al. 2008).

Supervision can be performed individually by one or several supervisor (-s) or in a group setting. More than one supervisor can be helpful for the student to gain a broader perspective on their work, various types of supervisory approaches and, hopefully, make it easier to get the guidance they need (Högskoleverket 2003). But several supervisors can also contribute to distress as they are not always of the same opinion, which may result in dilemmas where the student does not know how to proceed (Högskoleverket 2003). The aim of group supervision is to increase the involvement of the students by reading and commenting on each other's work throughout the writing process (Andersson and Persson 2002; Handal and Lauvås 2008). The supervisor's role then changes and becomes more about project management (Andersson and Persson 2002). Also, the student role changes with group instruction, as participation requires preparation and contribution to the group's meetings (Andersson and Persson 2002).

Studies evaluating scientific supervision at the undergraduate level from the supervisor's perspective are few. In a study, they discovered that the supervisors had trouble in balancing science and practice (Holmberg 2007). In another study, the lecturers perceived their role in group supervision as experts and coaches of teams of students who would work together (Kangasniemi et al. 2011; Utriainen et al. 2011). But also, that it was a problem to get enough time for supervision in different phases of the work.

From the students' perspective, practical-oriented supervision has been found preferable to create a good learning process when compared to traditional supervision (Meeus, van Looy and Libotton 2004). Group supervision has been described positively by the students due to the dynamic ways in which learning activities could take place, students' involvement in each other's processes and the possibility to receive feedback from more than just the supervisor (Kangasniemi et al. 2011; Utriainen et al. 2011; Yamada 2013) and that it supports learning and writing skills (Akister et al. 2009). However, if the students only focus on their own work it is a risk that they would perceive the group supervision as meaningless (Kangasniemi et al. 2011; Utriainen et al. 2011). Individual supervision has also been studied where the students expressed that they received too little supervision to be able to write an academic thesis (Paxton 2011). They understood what was missing but they did not know how to change the text to meet the expectations.

Hence, the rationale for this study is a lack of research focusing on bachelor thesis courses, with only a few articles investigating the scientific supervision on this

level. To our knowledge, no previous research has investigated the type of scientific supervision in physiotherapy programs. Based on this knowledge, the aim of this study was to explore undergraduate students' experiences and thoughts about scientific supervision.

METHODS

The study was conducted by a qualitative, inductive approach with semi-structured individual interviews and analysed using context analysis as described by Elo and Kyngäs (2007).

Informants and Context of the Study

Based on the rationale for this study, a focus on bachelor thesis course in physiotherapy was chosen. In Sweden, a total of eight universities and university colleges provide this program. Applications to the program are made through a national web-site and no study-fees are charged from the students from the European Union. The programme is given as full-time during three years and result in both a diploma as Physiotherapist and a Bachelor of Science in Medicine with a focus on Physiotherapy. The bachelor course is given during the third year and supervisors are lecturers or clinical lectures with a master or doctoral degree.

In this study, a convenient sample was used based on students from the University of Gothenburg (Gothenburg) and the Karolinska Institutet (Stockholm). In Gothenburg, the course that includes the bachelor's thesis initiates during the fifth semester when students decide the topic and write a research plan with assistance from the supervisor. The work for the thesis is then carried out during the sixth semester. According to the syllabus, five occasions of supervision is included. However, the actual supervision time that each student receive varies. The course ends with a viva voce examination where the thesis is presented and discussed.

During the autumn semester of 2013, group supervision was initiated. Supervision groups were put together consisting of four project groups with two students in each group. Each group was supervised by two lecturers, as the model for group supervision was new. Meetings were scheduled with themes such as 'Background, aim and hypotheses', 'Method' and 'Results'. During the semester, the majority of the students had group supervision, though some still had individual supervision.

The Physical Therapy program at Karolinska Institutet in Stockholm has the same construction of the bachelor's thesis course as the University of Gothenburg, but with a tradition of performing group supervision with students in the Physical therapy programme.

Students within the last semester of the programme were approached. Invitation to participate was performed by written and oral information about the study after the examinations in the bachelor's thesis course.

A first sample of informants consisted of 11 students who responded positively out of 20 strategically chosen from the group in Gothenburg. Initial contacted was done via e-mail and aimed at strategically sampling for age, gender and diversity in receiving individual or group supervision. Students who were being supervised by the authors were excluded from the study. To avoid having a sample that only represented students from one university, a group of students from the physical therapy programme at the Karolinska Institute, Stockholm were also included. When two additional interviews were carried out and nothing new had emerged, data collection was stopped. The students who participated were between 20 and 40 years of age, nine were women and four men, four had received individual supervision and nine group supervision.

Data Collection

The interviews were conducted individually at the university hospital or university. The last interviews were conducted by telephone due to logistic reasons. The data collection was made using semi-structured interviews. The interviews covered the following areas:

- Examples of good / less good supervision in the different phases of the thesis work
- Description of optimal supervision.
- The collaboration between the student and the supervisor

Follow-up questions such as the following were used to engage the student more deeply.

The interviews were recorded with standard cassette tapes and with a voice recorder. The interviews were transcribed verbatim.

Data Analysis

The analysis was performed by the two authors, independently of one another according to Elo and Kyngäs (2007).

1. The text was read through several times to create a sense of wholeness.
2. Areas included in the aim were marked in the text – units of analysis
3. The marked areas were divided into meaning units.
4. The meaning units were condensed, ie, the sentences were shortened without changing the meaning.
5. The condensed text was abstracted which means that the content and interpretation of the condensed text was described at a higher logical level in a code.

6. These codes were then sorted based on similarities and differences. The codes were divided into themes and sub-categories.

The analysis and coding were discussed until a consensus arose.

Ethics

This study was conducted as a part of a thesis project in pedagogics. The ethics were reviewed, monitored and approved by the University of Gothenburg in accordance with Swedish law on ethics in research (Prop.2007/08:44; Law 2003:460). Permission to carry out the study was given by the respective head of the physical therapy programmes. All participation was voluntary, and all data were collected anonymously. The informants participated after verbal and written information was provided and their written consent, except in cases where the interviews were conducted by telephone, where the approval was given orally.

Internal ethics guidelines for the transcription of the interviews were followed as to how pauses, repetitions, etc. would be handled. The two authors did the analysis separately to increase credibility and to reduce the risk that the information would be distorted or taken out of context.

RESULTS

Analysis of the 13 interviews resulted in three themes: 'The role of the supervisor', 'Perception of uncertainty' and 'Structure of the supervision'. These were divided into categories and sub-categories as illustrated in [Table 1](#).

The Role of the Supervisor

The informants describe cooperation with the supervisor as very important. Cooperation was perceived as vital in all steps of the research process; planning, data collection, analysis and writing the thesis. Both good and bad experiences and attributes throughout this process were described. There were two categories in the theme, the superior and the inferior supervisor.

The Superior Supervisor

Experiences of positive qualities that were desirable in a supervisor was described by the informants based on their own experiences but also reflection after hearing about experiences of other students in the class.

Above all the informants said it was important that the supervisor is competent in the research design of the project. In cases where students had a quantitative

Table 1: Structure of the analysis

Theme	Category	Sub-category
The role of the supervisor	The superior supervisor	Having the time and being available
		Right skills
		Supervisor default
	The inferior supervisor	Negative attitude
		The supervisor takes over.
Perception of uncertainty	The students' experiences of frustration	Difficulties with communication
		To be disregarded
	Students' perception of ambiguity	Unclear instructions
Structure of supervision	Group supervision	Supervisors' personal views
		Positive experiences
		Negative experiences
	Individual supervision	Positive experiences
		Negative experiences

approach, several students mentioned that it was necessary that the supervisor was qualified in statistics. They wanted the supervisor to be competent in the topic of the study, but this was secondary to knowledge of research design.

'The supervisor must of course have knowledge about the topic you choose to write about. Some knowledge of what my work is about and also, of course, an understanding of statistics, because that was what we had a lot of questions about.'

A fundamental element was that the supervisor had time and was available. The participants described that it was important that there be enough time for discussion during the planned meetings. But that it was also important that the supervisor be available for contact via email or phone outside the pre-arranged meeting times.

'I think it is most important that you have time to supervise. That the supervisor has time'

The informants wanted a supervisor who was straightforward, clear, committed and was interested in the students' work and respectful of the students' opinions. They should also have a positive attitude and a willingness to guide students through the work with their thesis.

'That they primarily are interested. But also, that they have to have the ability to know how the work should be written and structured ... to be respectful towards those who write'

The Inferior Supervisor

All the informants had experienced more or less good supervision. But they described inferior supervisors as those who were uncommitted to the students and their writing, to the topic or someone who does not devote enough time to supervision or had a negative attitude towards supervision generally.

'Having little personal involvement, little interest in the subject area and not really having time for your students. . . . I don't know how you get to be a supervisor, but I think that if you are, you should have time for your student and the ability to devote time to them. You can't say "Maybe I can reply [to your email] next week.'. In that case, you shouldn't be a supervisor.'

Another aspect was that the supervisor should not be too strict and controlling which seemed to be a risk if they had a lot of expertise in the topic. The supervisor might not allow for the students to develop the process and influence the work as much as they would like. Instead controlling everything based on his/her own knowledge and understanding.

'It is possible that the supervisor takes a lot of control... if the supervisor is very good with methodology and very good in the area, it is possible that the supervisor takes over a little bit, provides a little too much input and the students then may not have the space to be creative and learn. But this is still a learning experience.'

The Informants' Perception of Uncertainty

Several experiences were described by the informants, when confusion had prevailed, leading to uncertainty which sometimes delayed the work process. The category includes both the frustration in the cooperation and the ambiguity in instructions and information given.

The Informants' Experiences of Frustration

Several participants shared that they had experienced difficulties in communicating with the supervisor and other lecturers included in the course which lead to frustration and uncertainty. The time schedule was so tight that minor lapses in communication lead to delays in the work.

'It was when we were doing statistics. X (one of the lecturers) didn't have time for us right then. And we understood that, but then we tried to email Y (another lecturer) but we did not get any response. We thought that was a bit frustrating because we did not know if it was because [she knew] we had another supervisor or if she just didn't have time.'

Disregard was experienced and expressed by some participants. They described situations where they felt that the work was unimportant or did not mean anything to the supervisor. Some experienced concerns that the supervisor forgot what had been decided and this delayed the process. One fear was that the supervisor actually had poor control and approved everything without requiring further work from the students, meaning important aspects may be overlooked. *'It was noticeable especially during the examination where we found that the examiner brought up the things that we absolutely ought to have already heard about during the time we were being supervised. We had been a little too focused on our own work and had not thought of those things. But it was very obvious when we heard it [from the examiner/s]. We felt that supervisors should have commented on it more [during supervision].'*

The Informants' Perception of Ambiguity

The informants described that the written and oral instructions they receive before and during the course was often unsatisfactory. This lead to uncertainty in their work, difficulties to know the frames and different interpretations increasing their work load. Especially at the start of the work it was important to get specific and correct information in order to eliminate delays.

'The attitudes of the lecturers were very much focused on not being worried, and that things would "be resolved". We wanted to know when we had to do the different tasks. It was very unclear. It was frustrating with the "it

will be resolved" mentality. We were not at all on board with it.'

A common experience was that some supervisors approved what other supervisors did not. It included both formalities and the structure of the project and thesis. This lead to a lot of uncertainty. Some participants felt unfairly treated.

'You heard that other people's supervisors had been saying specifically that "you must do this" or "this mustn't be done" but later it was shown that this wasn't the case.'

Structure of the Supervision

Positive and negative aspects of structure of group and individual supervision were described by the students.

Group Supervision

Seven of the eleven participants had had group supervision. Both positive and negative experiences were expressed, though they were predominantly negative. The advantages of group supervision over individual supervision included using the peer-reviewing process, with several people reading through written work. Students stated that being able to both express and receive ideas, change their perspective and get feedback on their work was also an advantage of group supervision. One of the participants, who expressed a difficult start-up phase, described group supervision as a positive source for ideas on how to advance and engage the problems of research design. Other participants expressed that their thinking about the research processes and research construction had been positively affected by the group intervention and the diversity in aims. This knowledge was of great value during the opposition and defense seminars.

'I believe that it worked well because I and my thesis-partner started off a little late... I believed was very good being in a group and hearing the others' questions and thoughts and how they were doing their projects. So, if you didn't understand that well, you were able to better understand [by listening to others in the group]. And that questions arose in our group and they were answered very well. I believe it helped everyone. And to also be able to throw ideas around about each other's theses.'

'I also had the opportunity to provide feedback. It was one of the projects which I was very interested in I thought it was a very good idea and something valuable to do. And then I got the opportunity to help them. I brought up something that they were able to use. That was fun!'

Disadvantages of group supervision were stated as lack of or difficulties starting good and constructive

discussions in the group when the students were in different phases of the research process. Some students in the group were already in the middle of the process at the start of the course, while others did not begin until sometime later. The ones who had already started experienced lack of supervision compared to their current need, and that the supervision session only became formal attending occasions necessary to be approved of to get course credits. The students were mostly passive during the meetings and not particularly interested in the others' work. As there was a lack of correlation between the discussions during the sessions to their own individual projects, the students generally did not commit to reading the project papers of other students. They experienced the time in between supervision sessions to be a frustration, as this delayed the progress of their project. They suggested that individual supervision could be used to complement group supervision sessions. All the group supervision participants experienced a lack of more individual support at one or several times during the project.

'It started well and you were able to get going and make progress, while at the same time others had a really hard time even deciding what they were going to do. So there was a great deal of focus on them and getting them started with their work. Which of course they needed, but at the same time you felt that you were not making progress because you weren't getting the supervision you wanted. I think it would be better to have had individual supervision.'

Using two supervisors was seen as hindering the learning process by students in group supervision. This led to students being unsure who to contact when they needed help as the responsibilities of each supervisor were not clear. In some cases, the supervisors were at odds with each other concerning supervisory guidance, which made it hard for the students to choose whom to listen to and to trust. The participants who experienced this would have preferred to have only one supervisor or mix between group and individual supervision to minimize these problems.

Individual Supervision

Similarly, to those who had had group supervision, those who had had individual supervision also experienced positive and negative perceptions. Beneficial aspects of the learning process in individual supervision was the total and solitary focus on one's own thesis. No consideration had to be taken to other research processes, methods or texts, just their own work and the supervisor was fully focused on the current status of the work in progress. The supervisor had, in most cases, made up a timetable for the work process and

communication was continuous with contact via e-mail, telephone and SMS.

'We could email, call and meet our supervisor pretty much whenever we wanted, and we thought that was very good. At the beginning, we had a lot of questions that we needed help with so we could get started and then we were more independent the rest of the time.'

As regards negative experiences, the supervisors' role as the only source of reflection and perspective of the work could be a vulnerability, particularly if contact and the relationship with the supervisor was compromised, leading to uncertainty of procedure and extension of the work. Assumptions among the participants with this experience expressed a belief that group supervision might have decreased the risk of such dilemmas as feedback could be given within the student group.

'I think that it was better to have individual [supervision] but . . . if group supervision works really well then perhaps it is also really rewarding. Like being able to give each other a bit of feedback.'

DISCUSSION

The purpose of this study was to explore how undergraduate students' writing a bachelor's thesis experienced scientific supervision during their physical therapy course. Earlier studies in this area are few and heterogeneous, highlighting both the students' and the supervisors' perspective. The study focused on the students' perspective and a group that has not previously been investigated, physical therapy students. Previous studies in healthcare programmes have evaluated the healthcare students' perspective (Kangasniemi et al. 2011; Utriainen et al. 2011), but there are still topics left to focus on.

The results of this study indicated that many of the participants were satisfied and had a positive experience of the course and the supervision, but they also described shortcomings and problems. The supervisor's role is essential to the quality of work and the process of supervision. The participants describe that a superior supervisor must have time for guidance, knowledge of the scientific method and a positive attitude to the topic. In contrast, they felt an unengaged supervisor who controls too much, 'takes over' or did not have the time was less desirable. The participants described that they want a coach or consultant, which is in line with results from a previous study (Holmberg 2007). The participants expressed the same desire that student in a teacher program in the study by Meeus et al (2004) who wanted a supervisor who would be involved and would guide them throughout the process. However, the participants in the current study didn't want a "parent", which some of the supervisors in Holmberg's (2007) study perceived themselves as being for their students. Based on the findings

and previous research, it seems the guidance during the process is most important for bachelor level students in healthcare the first time they write an academic thesis. Formative feedback (Shute 2008) can be one approach to guide students to new knowledge by reducing the uncertainty between performance and goals, keeping feedback as simple as possible and promoting a "learning" goal orientation via said feedback.

As academic writing involves a completely new way of working and writing for the student, the supervisor/s needs to provide sufficient support so that students can achieve what is expected. Nowadays when students get less classroom time and are expected to take increasing responsibility themselves for their learning (Andersson and Persson 2002), it becomes difficult to simultaneously have time to socialize students into the academic context. Students can no longer just follow the supervisor and grow into the role by observing and imitating (Manathunga and Goozée 2007). The more practically oriented guide where students and supervisors work together with the different parts of the process has previously emerged among supervisors as important in working with bachelor's theses (Meeus, van Looy and Libotton 2004). But this requires more effort from the supervisor/s, which is poorly correlated with the increasing numbers of students and the decreasing time available for supervision time for each student (Kangasniemi et al. 2011; Pearson and Brew 2002). Discussions between supervisors how to facilitate the students' work without it taking too much time can be useful. Another aspect is to, during the course, give additional lectures in subjects which often take much of the time for supervision as academic writing and methodologically diverse ways of performing analysis.

One way of reducing time for supervision is to do it in groups. One of the challenges in group supervision is that the included students can be at different phases of the work process, which has been reported earlier (Utriainen et al. 2011). This may be an inevitable and sometimes difficult factor for the supervisor to master. Seven of the participants had had group supervision and were more or less positive towards this form of supervision. They described that they were in different phases, had been too focused on their own study and did not read the others' writing or had time to provide feedback, the latter being one of the main positive features of group supervision. But they also described advantages of reading and discussing each other's drafts. Receiving feedback from more than supervising lecturers have previously emerged as an advantage of group supervision but it is also known to increase scientific knowledge and make the students better prepared for examination (Kangasniemi et al. 2011; Yamada 2013). In the current study the results indicate that the group supervision they had was more like individual supervision but given in a group (Andersson and Persson 2002). However, the result may not be

comparable to group supervision where all students take full participation.

The students were satisfied with individual supervision, although it had its pros and cons too. They were pleased that the focus was only on their own work, even if it was a week spot vulnerable to have only one supervisor. Many of the participants who received group supervision wanted additional or only individual supervision. They thought that there were benefits in getting more individual feedback and individual supervision would provide increased knowledge of the scientific method versus the unstructured group supervision they received. Supervision requires other skills than traditional teaching requires (Grant 2003) and group supervision makes this even harder to provide. Though it is possible to combine different types of supervision. In a Norwegian study, multivoiced supervision of master's thesis students were used (Dysthe et al. 2006). They mixed group and individual supervision with student colloquia and concluded that the different approaches complemented each other. The student colloquia filtered the first idea and texts, group supervision gave diverse feedback but also facilitated the students into the discipline and the individual supervision provided more specific advice.

An integrated learning environment (LE) to support undergraduate dissertations was developed and utilized in a business school in the UK (Day and Bobeva 2007). The new approach included new uses of information technology to support work flow, observation of support, enhancement assessment regimes, improved communication and easy access to relevant documents. The implementation led to improvements to the student dissertation experience and achievement and seemed to also have enhanced the consistency and effectiveness of research supervisors. The results from this new approach are interesting as the participants in the current study pointed out several areas where they experienced uncertainty during the course. They felt that it was difficult to make contact with the supervisor and that they were overlooked, as the supervisor did not have focus on their work or did not devote the time necessary to provide proper feedback. The participants described that they thought that the instructions they received was unclear and that supervisors' personal opinions resulted inequality between students. These experiences could have been diminished with a more integrated learning environment. The lack of sufficient supervision has been highlighted in a previous study (Paxton 2011), in which the surveyed students felt they had received too little support and they did not know how they would proceed, resulting in an experience of uncertainty. However, no previous studies have had students describe that they have felt overlooked or had uninvolved supervisors. In this study, the supervisors were not interviewed. It would have been interesting to study how the supervisors describe the

correspondent situations from their perspective and if they were aware of the uncertainty that students felt.

Twenty of 35 students were contacted and asked whether they wanted to participate in the study. Of those, 11 accepted and were interviewed. The stated reason for declining to participate in the study was a lack of time, as the interviews took place during the last two weeks of their very last semester. It would have been an advantage to perform the interviews at an earlier stage in the program, but this was not possible due to logistical reasons. It is impossible to know how these students, who chose not to participate in the study, experienced scientific supervision. As a result, there may be experiences that we have been able to cover here. There is always a risk that the study participants are those students with a critical perception of supervision and the thesis course and vice versa. If you are content with your experiences of supervision, it is harder to prioritize an appointment for a follow-up. On the other hand, most interviewed students were pleased with their thesis course, although they felt there is potential for improvement in terms of both group and individual supervision.

CONCLUSION

Physical therapy students' experience of their supervision during their bachelor's thesis course was dependent on the supervisors' attributes, both favourable and unfavourable, difficulties with communication, being disregarded and affected by the supervisors' personal views. This was also put in context of the current form of supervision as individual and group supervision brought both positive and negative factors to the experience of the process. Further research may investigate the supervisors' experience of equal forms of supervision in the educational program to physiotherapists.

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