Impediments and facilitators for cooperation between dentists and medical specialists in obstructive sleep apnea treatment: a qualitative study

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Abstract

Dental sleep medicine is a relatively new field and oral appliances were recently acknowledged as a treatment option for obstructive sleep apnea. Oral appliances are best produced by qualified dentists, thus there is a need for cooperation between medical specialists diagnosing and treating OSA and dentists. More cooperation with dentists could be favorable to realize the possible benefits of oral appliances. It appears to be an unorganized field in Norway with a potential for more cooperation.

The aim of this thesis is therefore to explore the impediments and facilitators for cooperation between medical specialists and dentists in obstructive sleep apnea treatment. The overall purpose was to get an idea of how to facilitate cooperation, with patient pathways and efficient resource use in mind.

The thesis is a qualitative study with interviews as data collection method. The interviews were semi-structured and the sample consists of three medical specialists working at hospitals and four dentists qualified in dental sleep medicine.

Factors impeding cooperation were found to be mostly related to inhibit the start of collaboration. Important structural factors were the absence of a national certification system, cumbersome process of competitive tendering for external provision, and a lack of knowledge and awareness among health professionals in general. Social aspects inhibiting cooperation appeared to be negative attitudes, perceived negative attitudes, a lack of knowledge about each other, and perceptions of financial motivation in dentists. Experiences from cooperation revealed facilitating factors. These elements were trust, clear responsibility and task sharing, acknowledgement of each other’s skills and knowledge about the other’s field.

Many findings that appeared to impede cooperation seem to originate from the fact that it is currently not a well-established treatment. Thus, awareness about dental sleep medicine should be raised, and dentists and medical specialists should learn about each other, the other’s field and costs. Lastly, there should be implemented a certification system for proficient dentists and developed a national guideline for cooperation.
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1 Introduction

1.1 Background

A major burden of disease in the world is non-communicable diseases (WHO, 2016). A disease that might be less known and has severe consequences for both the individual and the society is obstructive sleep apnea (OSA). The condition involves breathing cessations while sleeping, and is associated with numerous other diseases and traffic accidents (Epstein et al., 2009; Young et al., 2002). In recent years, there has been a growing focus on the condition and increased public awareness. Despite this, a high number of people still remain untreated (Punjabi, 2008; Simpson et al., 2013; Young et al., 2002).

The gold standard treatment for OSA patient is continuous positive airway pressure (CPAP). However, the use of oral appliances (OAs) is increasing as a therapy for mild and moderate patients, or patients that are non-adherent to CPAP therapy.

In previous years in Norway, patients had to buy an oral appliance (OA) privately from a dentist if they preferred one. A core idea in the Norwegian health care system is free access to care, thus acknowledged therapies should be covered. OA therapy was recognized as a treatment modality for OSA in 2008, which implied public coverage (Johansson et al., 2014).

The OAs are best produced and adjusted by qualified dentists. Thus, a requisite for OA provision is cooperation between medical specialists, that diagnose and treat OSA, and dentists (Gauthier et al., 2012; Ramar et al., 2014). In several parts of health care, there is a need for good collaboration between health care professionals and between different health care institutions. Good collaboration is a premise for efficient and high quality care (Chesters et al., 2011). The focus on integrated care and efficient use of resources has also received more attention in the recent years, often requiring interprofessional collaboration (Rotter et al., 2011).

To get an understanding of OSA and dental sleep medicine in Norway, the next paragraphs will explain it in more detail.
1.2 The disorder and its scope

Many different terms are used in the literature on OSA. I have used the terms in accordance with the American Academy of Sleep Medicine (AASM, 2015).

OSA is a common disorder which is characterized by breathing cessations while sleeping, these complete cessations (apneas) or partial reduction of airflow (hypopneas) occur due to obstruction of the airway (Jurado-Gámez et al., 2015). The number of apneas and hypopneas per hour are measurements for the severity. The predominant symptom implying that patients may have the disorder is excessive daytime sleepiness. Other symptoms during the day are headaches, concentration problems, likelihood of falling asleep during daytime, memory loss, decreased libido, depression and irritability. Nightly symptoms are apneas, snoring, nocturia, fragmentation of sleep and rapid sleep onset when going to bed, but awakenings during sleep (Epstein et al., 2009; Franklin et al., 2007).

The condition is associated with hypertension, cardiovascular and cerebrovascular diseases, diabetes, decreased quality of life and an increased mortality (Corral-Peñafiel et al., 2013; Epstein et al., 2009; Franklin et al., 2007; Gami et al., 2013).

Risk factors for OSA are obesity, large neck circumference, genetics (facial structures), smoking, alcohol consumption, higher age and different conditions which cause abnormalities in the craniofacial structure (Durán et al., 2001; Franklin et al., 2007; Krishnan et al., 2014; Pan et al., 2014; Young et al., 2004).

1.2.1 Diagnosis and treatment

The American Association of Sleep Medicine (AASM) recommends the following for diagnosing OSA. The first step is to gather sleep history of the patient. If symptoms are found in this step, the patient should undergo a more comprehensive physical examination and clarify daytime sleepiness. In accordance to the patient’s disease risk, there should be performed an objective sleep investigation to set the diagnosis.

The conventional treatment for OSA is foremost positive airway pressure therapy. There are different varieties and the one recommended is the CPAP machine. Other treatment modalities are behavioral, surgical treatments and oral devices (Epstein et al., 2009; Ramar et al., 2014). CPAP therapy is still considered the most efficacious. However, some studies
indicate that OA therapy may be a better option for some patients because the higher efficacy of CPAP might be outweighed by a higher adherence to OAs (Gjerde et al., 2015; Phillips et al., 2013; Ramar et al., 2014). In Sweden, the utilization of OAs has been much higher and covered by the public health care since 1999. There, mild and moderate patients are referred directly to a dentist after diagnosed for an oral appliance as primary treatment (Johansson et al., 2007; Tegelberg & Lindberg, 2015).

1.2.2 Epidemiology, economic and social costs

OSA is a condition that affects an abundant amount of people. The exact number is unknown, but different researchers have estimated a prevalence around 2 to 4 % of the adult population (Epstein et al., 2009). According to Lurie (2011) OSA affects 3-7 % of men and 2-5 % of women. Prevalence varies because of different study methods, samples, measurements, statistical techniques etc. Young et al. (1993) estimated in the age group 30 to 60 years old, a prevalence of 9 % for women and 24 % for men. This study is quite old, but it is still often referred to in the literature. Hrubos-Strøm et al. (2011) estimated the prevalence among adults between 30 and 65 years old to be 16 % for mild OSA in Norway.

There are vast economic and social costs for society of untreated OSA. Medical expenses occur due to health care utilization because of conditions associated with OSA, such as doctor visits because of depression, cardiovascular diseases or concentration difficulties (Vishesh Kapur et al., 1999; Young et al., 2002). In occupational life, there are significant consequences because of accident, absenteeism and loss of productivity while at work (AlGhanim et al., 2008; Jurado-Gámez et al., 2015; Ulfberg et al., 1996). OSA is also linked with a higher risk of traffic accidents. Considering all these factors untreated OSA patients cause substantial implications for society (AlGhanim et al., 2008; Teran-Santos et al., 1999).

1.2.3 Dental sleep medicine in Norway

Dental sleep medicine is a relatively in field in general as the organization named American Academy of Dental Sleep Medicine was founded in 1991 and the corresponding in Europe, the European Academy of Dental Sleep Medicine, was founded in 2004 (AADSM, 2016; EADSM, 2016). Thus, there has been recent changes in treatment guidelines due to acknowledgement of OA as a treatment option (Ramar et al., 2014).
The number of dentists working with OSA in Norway is relatively small. There is no education in dental sleep medicine in the educational institutions for odontology and according to Khan et al. (2015) the number of dentists with adequate knowledge about sleep related breathing disorders are relatively low. Further, the study showed that many dentists were aware of the most common symptoms of OSA and agreed that OA therapy is a good option for some patients. Yet, 80 % had never consulted a doctor suspecting presence of OSA. Around the same percentage had never made an OA for an OSA patient (Khan et al., 2015).

The health trusts are free to choose the model of provision if they want to offer OA therapy to their patients. Geographical differences are present concerning to which extent dentists contribute to the care of OSA patients (Khan et al., 2015). The choice of organization may be either be to have a dentist employed at the hospital (integrated model), or the hospital can contract with an external private dentist (contract model). There are a few hospitals that have chosen integrated model, thus they have an interdisciplinary team at the same physical location (Helse Nord, 2014; Johansson et al., 2014). A majority of the health trusts use competitive tendering to contract with private dentists (Johansson et al., 2014). According to public procurement laws, this is a requirement for contracts over a certain monetary threshold. There does not exist a national guideline for the role dentists should have in cooperation (Khan & Saxegaard, 2015).

At “Fritt behandlingsvalg” (website where everyone can search for different treatments and see the waiting time for each provider), neither of the searches; ‘søvnapnéskinne’, ‘apnéskinne’ nor ‘bittskinne’ (different designations for OAs) provide any response (Helsenorge.no, 2016b). This is a fact, even though The Norwegian Directorate of Health stated in 2008 that OAs are adequate alternatives for treating OSA and shall be covered if requisitioned by medical specialist (Stortinget, 2008).

The waiting period for getting an OSA diagnosis in the public system varies a great deal, whereas the shortest is one week, and the longest is 40 weeks (08.06.16). However, not all waiting times are denoted (Helsenorge.no, 2016a). It is estimated to be 700 000 people that need to undergo a sleep investigation. In 2015, due to long waiting lists, there was implemented a fee for medical specialists outside the hospital to perform sleep studies (Haave, 2015).
1.3 Research aim

There might be a need to lighten the burden of hospital facilities and realize the possible benefits of OAs. In addition, it is essential in health care to provide good patient pathways. One way of optimizing these pathways for OSA patients could be to ensure good collaboration between the medical specialists and dentists. However, there is a lack of research on this specific area. Dental sleep medicine is a relatively new field in health care. OAs have however been used to prevent snoring for many years. Nevertheless, recognition of OAs as a treatment option for OSA was not until recently, entailing public provision and coverage. This is an interesting topic due to the novelty of the field in Norway, and the little attention it has received.

There seem to be geographical differences in services offered and variations in knowledge about OA among medical specialists and dentists (Khan et al., 2015). In addition, it appears to be a knowledge gap comprising common practice in the different parts of Norway and the extent of utilization of dentists for treatment. In addition, it gives the impression to be a quite unorganized field of health care. Reasons for this assumption are:

1) When searching for different OA designations on many public websites such as the websites of the health trusts, The Norwegian Institute of Public Health and The Norwegian Directorate of Health, there is a lack or no information on OA therapy.

2) There does not exist a national guideline for the role dentist should have in cooperation.

3) There is no certification system for dentists proficient in dental sleep medicine.

Another element to this is the economic aspect. There will always be scarce resources in health care, as in all other sectors. Thus, there is a need for efficient and reasonable use of resources.

The aim of this thesis is therefore to explore the impediments and facilitators for cooperation between medical specialists and dentists in obstructive sleep apnea treatment.

The overall purpose was to get an idea how to facilitate cooperation, with patient pathways and efficient resource use in mind.
2 Theoretical framework

Many theories could have been relevant for this study. However, I have chosen to include a few that was believed to give a comprehensive framework for the topic investigated. The collaboration may be influenced by many factors, for example, structural factors such as financial aspects, characteristics of the health care system and choice of organization. The organization models hospitals may choose for offering OAs can either be to 1) integrate a dentist at the hospital, or 2) contract with an external private dentist. Consequently, there exist different models of organization, which may influence cooperation.

Social factors may also play a role such as stereotypy, trust, autonomy, relational aspects and knowledge. To understand these different structural and social aspects, theories on principal-agent relationships, professionalism and interprofessional collaboration will be used.

First, the health care system in Norway will be briefly described to get an idea of the context. Subsequently, existing literature will be presented to shed light on the topic.

Clarifications of terms

When using terms as proficient and qualified dentists, it is meant those who are skilled and trained in dental sleep medicine. Dental sleep medicine is defined by American Academy of Dental Sleep Medicine (AADSM, 2015) as “an area of dental practice that focuses on the use of oral appliance therapy to treat sleep-disordered breathing, including snoring and obstructive sleep apnea”. Cooperation and collaboration are terms that will be used interchangeably, as they often are in existing literature.

2.1 The Norwegian context

Health care in Norway is predominantly public, specialist care is at national level and provided by the regional health authorities who owns hospital trusts. Services are provided by their own hospitals or by contracts with private hospitals or private medical specialist. Primary care, such as general practitioners, long-term care and home care are provided by the municipalities (Regjeringen, 2014b). Dental care in Norway is primarily private, however, there are some exceptions, dental care for children and a few vulnerable groups in society are part of the public system. However, when it comes to the remaining adult population, the dentists are in the private sector (Regjeringen, 2014c). Hence, there is a need for cooperation
between hospital trusts and private dentist, or integration of the dentist in the hospital facilities.

The general practitioners are gatekeepers who refer the patients to specialist care. Suspected OSA patients will then have a sleep investigation and be diagnosed by a medical specialist if the condition is present. The next step is assessment of patient characteristics and determine appropriate treatment (Gjerde et al., 2015).

The hospitals trusts in Norway decide if they want to offer OAs and they may choose organizational model for provision. In the public sector, a small number of hospitals have a dentist integrated in their facility (Johansson et al., 2014). In practice, a medical specialist has to send a formal requisition saying the patient needs an OA to Behandlingshjelpemidler, which is the authority that and is responsible for paying (Behandlingshjelpemidler, n.d.).

All patients if they wish can receive the treatment privately with usually lower waiting time. However, this entails a cost of around 10 000 Norwegian Kroner.

The hospital can use private dentists up to a threshold, and when this point is reached, the service has to be put on a public competitive tender, due to public procurement laws. Many of the health trusts use competitive tendering and contract with private dentists (Helse-Nord, 2015; Regjeringen, 2014a).

### 2.2 Theory on professionalism

#### 2.2.1 Defining professions

Central in questions of sharing of work, and who has the justified right to control different parts of work, is theory on professionalism. Freidson (1970 p. 187) stated that an occupation is a profession if society has given it authority and a justified right over a part of the occupational world. Thus acknowledged by clients, competitors and authorities. Another important contributor to this field is Andrew Abbott, who explores the role of professions and their development in the modern world. He defines it as quite broadly as “exclusive occupational groups applying somewhat abstract knowledge to particular cases” (Abbott, 1988 p. 8). Larkin & Callaghan (2005) argue that professions want to protect their role. Pierre Bourdieu (in Lingard et al., 2004) uses social structuration theory to examine professional identity. The theory is built on the concept of social systems, where “each professional’s role
is determined by its position in relation to others and its access to certain commodities” (Lingard et al., 2004 p. 407). It is also stated that individuals endeavor to differentiate both intraprofessionally (within the profession) and interprofessionally (between professions) in order to gain these commodities. These commodities are various types of capital, such as specialized knowledge and equipment, and are desired to strengthen their capability to act independently and autonomously (Lingard et al., 2004).

Stjernø (2013 p. 130) identifies professionalization as a process of differentiation and share the central thought that different professions seek to distinguish themselves from others. He argues that this differentiation can arise either vertically from professions with a lower level of education, or horizontally from professions with the same level of education. Album (2013 p. 125) argues that these differentiation and specialization processes in addition to technological advancement, produce more specialties and even specialties within specialties. Consequently, there is a need for cooperation intraprofessionally and interprofessionally

2.2.2 Jurisdictions and power relations

Abbott (1988 p. 20) uses the term jurisdiction and defines it as the “link between a profession and its work”. It encompasses the justified right to perform certain tasks justified by society. The professions’ jurisdictions are constantly changing and constitute a dynamic system. There can be both external and internal factors in which influence the changes in jurisdiction and thus the system of professions. External causes for changes are those who either create new task fields for jurisdiction or eliminate existing jurisdictions. The most prominent and causes of sudden changes are those linked to technologies and organizations. Change in jurisdictions due to technology occurs when either technology creates, eliminates or diminishes tasks. Examples of recent jurisdictions are fields in information technology and biotechnology where an abundant of new technical science and development have spurred the recent decades. The jurisdictions are exclusive, thereby competition between the professions exists because they strive to keep and expand their jurisdiction. Abbott highlights the idea that it is important to know how the professions work to understand how they can take control over others’ tasks (1988 p. 19).

Abbott (1988 p. 59) uses the terms ‘diagnosis, treatment, inference and academic work’ for what lies behind the need for specialized knowledge and determination of what ought to be the further process. Diagnosis and treatment are depictions from the medical field, as the
procedure is the act of using expertise in identification the problem using the different relevant information (about the patient) and then providing a solution based on the expertise. This metaphor is applied in the general field of work life, and considering professions compete over jurisdictions the professions may seek to ‘treat’ what other professions have already ‘diagnosed’. Professions may also put a new diagnosis to a condition or issue that another profession has already diagnosed. Thus they change the problem and another solution may be required (Abbott, 1988 p. 100) Consequently, they have enlarged their jurisdiction by bringing a new problem into it. The term ‘inference’ is used for the process when the link between the diagnosis and treatment is not obvious and needs further assessment. ‘Academic work’ is the concept of knowledge and is what legitimizes the individual to do the work and is partly the foundation for the power of a professional in achieving a continuum of the jurisdiction (Abbott, 1988 p.54).

There exists vast research on the status and power of doctors over the years. When Eliot Freidson wrote Profession of Medicine (1970 p. 47), he argued that many occupations had been competing with doctors over the years on the grounds of their ability to treat or relieve certain conditions, an example used was pharmacists. The challenge was that doctors needed many of those services from the competing occupations and there was a need for a mechanism to ensure the assistance. Consequently, doctors received the right to govern such occupations (in the United States of America). Doctors have historically had a remarkable high status and autonomy in society (Freidson, 1970 p. 5). According to Randall & Kindiak (2008), there has been a deprofessionalization of many professions in health care, including doctors. Deprofessionalization signifies a diminished degree of allowing professional judgement and autonomy in their work. It originates from the need for cost containment and standardization of tasks due to rising costs in health care sector (Clark, 2005; Randall & Kindiak, 2008), and the need for efficiency to cope with waiting lists and a high demand for health services. These thoughts are in association with a decrease of profession domination of health care and the rise of managerialism and ideas of ‘new public management’ in the health care sector (Evetts, 2009). Thus, more regulation and standardization have decreased their power (Hunter, 2006). Harrison & Ahmad (2000) agreed that there has been a decrease of power and doctors’ opportunities for self-government.
2.3 Agency theory

Agency theory is widely known, and there is an abundant amount of literature on the theme. It can be used to explain many different relations in society, it can be useful in this study because there is a relation between doctors and dentists in in cooperation to provide OA therapy. The dentist is then performing a task on behalf of the medical specialist, thus the dentist is the agent and the doctor is the principal.

The essence in principal-agent relationships is a situation where one party (agent) is acting on behalf of another party (principal) (Arrow, 1984; Donaldson, 1990; Hagen, 1990; Shapiro, 2005). These relationships are present everywhere; owner-manager, manager-employee and doctor-patient to mention a few. The agent is delegated tasks because the principal does not have the capability or capacity to do it himself. Consequently, the agent often has more knowledge and competence about how to perform the task. The agent’s effort will affect the organization concerned, thus it is of relevance to the principal. If it is possible to observe the actions of the agent, the agent’s payment will be linked directly to the actions. However, the principal is usually not able to observe all actions of the agent, or it is very costly to gather that information. Therefore, the principal may have to rely on observation of results for payment linkage (Hagen, 1990). The classic assumption is that individuals are acting in accordance of optimizing their own interests rationally, thus maximizing own utility and being prone to opportunism (Arrow, 1984; Shapiro, 2005; Wright & Mukherji, 1999). The principal wishes to maximize the organization’s profit, and since the agent’s payment depends on the results, the interests are aligned as the agent wishes to maximize own income. The work represents effort, which will be minimized, due to nonfinancial costs of effort. The agent often has more competence and knowledge about the task than the principal. Therefore, he is consequently able to hide information. This information can for example involve how to perform the task more efficiently. Thus, there is a conflict of interests and alignment of interests between the principal and the agent is needed to prevent opportunistic behavior. Williamson (1993 p. 458) defines the opportunistic agent as “self-interest seeking with guile”, and will therefore conceal information if it will benefit him. If the principal uses measures to monitor the agent, these costs are referred to as agency costs (Hagen, 1990; Wright & Mukherji, 1999). In addition to monitoring, agency costs also comprise the costs of the economic incentive for the agent to act in accordance with the principal, and the
reduction in welfare for the principal because she is still not guaranteed optimal performance from the agent due to diverging objectives (Jensen & Meckling, 1976).

There is also risk involved in the situation because considering there are aspects in which the agent cannot control, the risk is shifted to the agent and he should get compensated for that. The agent is assumed to be risk averse due to the shift of risk. The principal is usually assumed to be risk neutral considering the organization can be diversified and rely on other contracts (Shapiro, 2005).

The core problems in the relationship are due to information asymmetry, which means that one of the parties has superior information compared to the other party. The point that the principal cannot observe the agent’s actions as mentioned, and that it is costly to obtain such information, may lead to moral hazard. The results might not correlate with the effort the agent put in, but it could be affected by factors out of his control. This the agent would know, but the principal would not. Therefore, it can lead to the problem of adverse selection (Hagen, 1990). There are many different examples on moral hazard and adverse in the literature from various fields. Examples of moral hazard can be shirking at work because the actions are not observable for the principal (Wright & Mukherji, 1999). Another example put somewhat extreme, can be found in insurance; when a person has insured their home for fire accidents, she is less likely to perform fire preventing behavior (Hagen, 1990).

2.3.1 Principal–profession theory

There has been identified a distinct variety of agency relations, namely Sharma (1997) asserts that an agency relationship involving a professional differ from traditional agency theory such as owner-manager theory. An example of adverse selection can be seen in the light of this reasoning. In the labor market, which nowadays is more specialized than ever, there can be a situation where an employer needs a professional with specialized knowledge. According to Sharma (1997) the principal might encounter difficulties in assessing the competence of potential employees. In addition, they may have trouble defining the contract because they simply do not have enough knowledge themselves on how the work is to be executed and what procedures is to be followed. Thus, the person hired might not have the competence she claims to have.

Sharma (1997) identifies the relation between a principal and an agent that holds specialized knowledge as principal-professional relation. In this situation, the role of knowledge is
accentuated and the fact that professions are idiosyncratic as agents makes it different from the conventional principal-agent relation. The term profession as Sharma (1997 p. 263) uses it comprises occupations that hold “a body of knowledge and techniques acquired through training and experience, have a service orientation and distinctive ethics, and have a great deal of autonomy and prestige in the modern economy”.

The first point emphasized is what already briefly mentioned, that the principal does not have the ability to construct and carry out the contract to the same extent as in contrast to the classic agency theory, where the power is ascribed to the principal. The power structure is caused by asymmetric information, although the imbalance in this case is different from the one in traditional agency theory. Here, the asymmetry is task-related, as the principal lacks the specialized knowledge required on how to perform the task and therefore has difficulties inspecting the work ex-post. While in classic agency theory they do not accentuate the difference between knowing how the agent does the job and knowing what the agent does (Sharma, 1997).

Another aspect that makes the situation more problematic is that there is a high degree of uncertainty related to how much effort the agent actually put into the work to achieve the results. The reason is that non-professionals do not know the technicalities behind the task. Consequently, it would be more costly to monitor than in a traditional agency relation, where observation of effort or result is the common mechanism for constraining opportunism (Sharma, 1997).

Shapiro (2005) argues that training, education, certification, licensure solves the problem of adverse selection for principals. At least it seems to provide mitigation of the problem in that the principal can demand a certain specialization when hiring, and the agent can prove he is qualified by showing a diploma, certificate or license. Therefore, the principal is assured that the person they hire holds the knowledge and competence claimed. Although this assurance exists, the principal cannot be certain that future performance will be optimal. However, there are mechanisms that can diminish the probability of professional agents acting opportunistic.

In conventional agency, reputation is said to influence the agent and restrain opportunistic behavior to some degree (Granovetter, 1985). However in principal–professional setting, it is argued by Sharma (1997) that reputation is insufficient for preventing opportunistic behavior. This is argued because it is even more costly for principals to communicate the negative behavior externally when there does not exist many other principals utilizing such a service.
In addition, the peripheral actors will not have enough information to judge whether the agent is to blame or not for the unfortunate incident.

On the other hand, being a member in a professional community may hinder opportunistic behavior. Sharma (1997) highlights that professionals are more concerned about their reputation among peers than among other actors. Professional organizations and institutions have a mechanism of restraining opportunistic behavior due to possibilities of excluding individuals or threatening to withdraw of privileges within their community. Also, as expressed by Sharma (1997 p. 780), “Scrutiny by professional peers neutralizes the agent's advantage of unique access to an esoteric body of knowledge and exposes the behavior of agents for comparison against the work and ethical standards of their respective community of professionals.” Thus, the possibility of audits by peers and ethical codes indeed play a role in professionals’ willingness for non-opportunistic behavior.

Principal-professional relationships may also be more complex than traditional agency relations because the professionals may be agents in several relations. These may be with employers, clients or patients. There might exist conflicting interests of the principals. It is argued that when a professional agent is in a struggle concerning who’s interest to conform with, they often choose the client or patient because that is what they have been socialized to (Loughry & Elms, 2006).

2.3.2 Social aspects in agency theory

The classic agency theory assumes that people are opportunistic and act rationally within their scope of action to maximize their utility. Consequently, it disregards social factors of the relationship between the parties and human attributes of the individuals. However, others argue these factors need to be considered due to the fact that humans are not totally rationally built. Most humans are social beings and assigned by nature with qualities such as trust and altruism which can largely impact the principal-agent relationships and the agent’s motivation (Wright and Mukherji, 1999; Shapiro, 2005).

It has already been described aspects where social factors influence agency relations, such as involvement in a professional community and the role of reputation. Another aspect of importance is the role of embeddedness in agency relations. Granovetter (1985 p. 481) argued for the existence of embeddedness by stating: “the argument that the behavior and institutions to be analyzed are so constrained by ongoing social relations that to construe them as
independent is a grievous misunderstanding.” The social relationships can for instance ease the problem of adverse selection when hiring because the principal is familiar with the agent or the agent belongs to the same social network, and may have more similar values than an outsider. On the other hand, they can still not be certain of optimal performance, but the probability of diverging interests is reduced when the two actors are embedded in the same social network. Besides, word of mouth travels faster in social networks than between, so should an agent or a principal for that matter, harm the operation, others would soon inquire (Shapiro, 2005).

Embeddedness also provides a basis for trust in relations where repeated interaction, may lead to bonding between actors. Consequently, a mutual trust might be fostered and this will lower the probability of opportunistic behavior and abuse of power by the principal (Granovetter, 1985).

Casadesus-Masanell & Spulber (2005) argues that when examining agency relationships, one must take into consideration the context of the relation. Social norms, beliefs and ethics, legal duties and market standards are considered contextual aspects that drive the principal and agent to trust each other. These factors are called implicit incentives and are elements of the environment of the relation. Explicit incentives are those formally denoted in the contract, predominantly monetary. The implicit incentives can steer the actions of agents by for example the urge to conform with social norms. If the norms in the environment motivate and value honesty, integrity and hard work the agent will more likely act in that way. Improvement of the principal-agent relation is then in place if the agent still has motivation for acting beneficial for the principal, although no or less explicit incentives are present. Also, agency costs may be reduced due to a decreased need for monitoring and dependence on monetary incentives (Casadesus-Masanell & Spulber, 2005; Wright & Mukherji, 1999).

A relation built on trust, common norms and values may enhance the achievement of the actors (Arrow, 1972). Casadesus-Masanell & Spulber (2005) assumes that individuals are rational and the decision to trust another party is determined by the basis of what the individual prefers, what information he has, implicit and explicit incentives and assumptions on how the other party will act. Thus, if the parties think there is a benefit by trusting the other party taking the different aspects into consideration, they will trust each other. According to Granovetter (1985), if the principal thinks the agent will trust her, she will more likely trust the agent, and the agent will do likewise.
The medical field can be expected to have numerous altruistic professionals because their core mission is to help other people and altruism should presumably be inherent (Cruess et al., 2004). Altruism is the notion of putting others’ needs above your own and wanting to act to enhance their wellbeing (Casadesus-Masaneal & Spulber, 2005). Sharma (1997) asserts that altruism in the agent might be a factor that can lessen principals’ need to govern the professional agent. The professional who is altruistic is then assumed to wish to serve society and its people by following their professional ethics.

2.4 Interprofessional collaboration

Delivery of efficient and high quality patient care hinges on good communication and collaboration between health care professionals (Chesters et al., 2011). The evolution of modern health care has been increasingly specialized and complex due to new research and technology leading to more differentiation (Album, 2013 p. 25). Moreover, the proportion of elderly people in the population is increasing, the prevalence of chronic diseases is rising, often requiring aid from multiple disciplines and cooperation between primary care and specialist care (d’Avray & McCrorie, 2011). Thus, the need for different professions in the medical field to work together is great. The focus on providing a good experience and an integrated patient pathway have increasingly been given more attention over the years, which might prompt interprofessional collaboration (Chesters et al., 2011).

2.4.1 Attitudes and stereotypes

In health care as in other fields, the professions tend to identify themselves as members of a social category or group (Hogg & Abrams, 1988 in Stets & Burke, 2000). People tend to unify in social groups with others they consider in the same social category through comparison processes (Stets & Burke, 2000). The approach is called social identification theory and can be used to understand and explain several phenomena, amongst prejudice, inter-group conflict, stereotyping and conformity (Hogg, 2006). The process of categorization leads to individuals being in-group and others being out-group, and individuals tend to favor the ones who are in the in-group, relative to the ones in the out-group (Stets & Burke, 2000). This phenomenon can occur even though the groups are constructed solely on an arbitrary basis (Diehl, 1990).
Other findings support the allegation of individuals in health teams identifying themselves with their profession instead of the team. Sands et al. (1990) observed that individuals also primarily saw themselves as representatives of their profession, and in interprofessional collaboration, hierarchies affect team processes. A study by Thomson et al. (2015) shows that graduate pharmacy, nursing and medicine students primarily identified themselves with their profession rather than the interprofessional team they were working in. The study also revealed stereotypical thinking where the participants assigned certain characteristics to the whole out-group on the bases on negative experiences with few persons in that group. Stereotypical thinking can be detrimental for cooperation and communication between health professionals (Carpenter, 1995; Hean et al., 2006; Thomson et al., 2015).

Thomson et al. (2015) found that stereotypical thinking strengthens the in-group identity and goals limited to their own profession. These factors were linked to interprofessional conflicts. The author accentuates that such factors are not developed deliberately, but is a result of adverse experiences. The contact hypothesis claims that there can be an improvement in the relation between groups if they are brought together under certain conditions. The conditions are: an equal status of groups, not conflicting goals and an environment supporting collaboration (Allport in Thomson et al., 2015). Stereotypes among health care workers can prevail if they experience daily confirmation of already established conceptions of stereotypes. Rothbart et al. (1979) showed that humans tend to ignore actions impairing stereotypes, and a tendency to notice to a higher degree behavior confirming our already set conceptions. Hence, contact alone might not solve the issue of stereotyping and negative conceptions about other groups.

The competition between health professions for expanding their ‘jurisdictions’ as Abbott (1988) calls it, has also induced stereotypical thinking between professions according to Barnes et al. (2000). The authors assert that competition led to a lack of understanding of each other’s function at the workplace and prevailed negative attitudes.

Another reason for conflict can be non-cohesive beliefs of the professionals and different professional cultures that lie deep in the history. They are trained in specific ways to manage their specialized job, and there has traditionally been a lack of emphasis interprofessional collaborative practice. Thus, collaboration with others that do not share the same background may be challenging (Ginsburg & Tregunno, 2005). Professionals may also, among other
reasons, be reluctant to new procedures and way of working, consequently holding firmly on
to old practices (Bainbridge & Purkis, 2011).

2.4.2 Goal congruence

Much research on interprofessional cooperation exists, both considering teamwork and other
collaboration in different health institutions. The conformation of goals is a critical factor for
social interaction and collaboration. According to Deutsch and Krauss (1962 in Tjosvold,
1984) there are various ways in which goals can be perceived. Further, this has implications
for cooperation, attitudes, communication and orientation. The goals are expressed in three
different manners. First, cooperatively natured goals which imply that the individuals
perceive their goals to be positively correlated. Second, goals viewed as competitive which
means that one’s progress toward attaining a goal, impede the others’ likelihood of reaching
their goals. The last way of considering goals is an individualistic approach which says that
one’s goals are unrelated to others’ goals. The presumed interdependence of goals influences
the adaptation to others’ behavior. For example if you know the goal is cooperative,
communication is clear and correct, in contrast, if the goals are competitive, communication
may be interpreted by both as pursuits to curb the other’s work. Sherif (1966 in Thomson et
al., 2015) also proposed these three types of goals. He called the first type superordinate
goals, which require cooperation corresponding to what Deutsch and Krauss (1962 in
Tjosvold, 1984) calls cooperatively natured goals. Such goals need collaboration. An
example of such a goal would be to provide an integrated patient pathway. In contrast, a
health professional can aspire solely to accomplish their task, and it may contribute to
competition among the personnel for time with the patient or the patient’s attention.

Calman (1994) also pointed out the importance of goal congruence in teamwork. He states
that the shared goals need to be thoroughly discussed and decided by the whole team and then
carried out. Often this part is missing, thus the existence of different goals within the team
can evolve and perpetuate. Moreover, realistic conflict theory identifies contrary goals and
competition for limited resources between groups as a way of way of explaining conflict and
negative attitudes between groups (Gaertner et al., 2000).
2.4.3 Trust and acknowledgment of competence and roles

Affirmation of mutual trust is an important part of the foundation of interprofessional practice. In a study elucidating physiotherapists’ experiences and perspectives on teamwork, it was found that ability to rely on other group members was crucial and strongly associated with trust. It was also found that effective and close collaboration was realized with other individuals that acknowledged and valued their contribution (Coyle et al., 2011). MacNaughton et al. (2013) found that trust significantly influenced the attitude of team members in sharing responsibilities and delegation of tasks. They also found that if trust existed, the participants were also more prone to depend on other members’ knowledge and skills.

In the literature on interprofessional collaboration clarification of roles, domains and mutual understanding of those factors are important premises for good collaboration (Makaram, 1995; Thomson et al., 2015).

Larkin & Callaghan (2005) also saw that professionals perceived that their roles were clearly defined, however that other professionals they were collaborating with did not understand and recognize that role.

Makaram (1995) identified both favorable outcomes and barriers to collaboration among doctors and nurses in general. Findings suggest that limited apprehension both about each other and the other’s practice domain was the first two barriers identified. In addition, other factors that could hamper collaboration were unilateral relationships, power struggles, competition, distorted communication, cultural aspects, and timetable conflicts. Much research highlight the importance of knowledge about each other’s roles in interprofessional practice (Kvarnström, 2008; Larkin & Callaghan, 2005; MacNaughton et al., 2013; Thomson et al., 2015; WHO, 2010). Calman (1994) also asserted that acknowledgement of others’ competencies and the valuing of others’ contributions are conditions for good interprofessional practice. Miller (1997) also saw the importance of trust between the parties and reciprocal understanding of the other parties’ knowledge, skills and expectations in collaborative practice.
3 Method

3.1 Choice of research and data collection method

I contacted prominent researchers in sleep medicine to get an idea of what could be interesting to study when it comes to OSA. From this contact, different aspects were identified and the choice of investigating the cooperation between dentists and medical specialists was made. I was intrigued by what seemed to be a quite unorganized part of health care and wished to obtain experiences from the individuals involved to see what influences the collaboration. A qualitative research method was therefore chosen, as I was interested in exploring and describing the phenomenon by understanding and interpreting insights from the individuals (Justesen & Mik-Meyer, 2012 p. 16).

There exists little research on this area, and a qualitative method is suitable when there is lack of evidence and we do not know what the outcome will be (Malterud, 2011 p. 29). In addition, qualitative research methods are adaptable and there is room for modifications as the research process proceeds and there might appear new information or interesting aspect which is desirable to pursue (Creswell, 2015 p. 15).

We all have personal views, beliefs and experiences that may influence us when doing research (Malterud, 2011 p. 40). The key is to be aware that consciously or unconsciously it occurs. I will elaborate this aspect in the sub-chapter regarding methodological considerations.

It was natural to choose one-to-one interviews in person because it allows for detailed views and personal perspectives of the interviewee. In addition, it would allow for interpretation of body language and a clearer understanding of the informants’ thoughts. It may also be a tool in itself to execute it in person, due to the fact that the researcher will create some sort of connection with the interviewee, which can provide a valuable ground for the informant to open up and speak freely (Creswell, 2015 p. 127).

The interviews were designed as semi-structured which can be characterized by using an interview guide with pre-established themes and essential issues to delve into. Nevertheless, the researcher is free to follow interesting elements as they appear in the conversation (Justesen & Mik-Meyer, 2012 p. 53). There were made two slightly different interview
guides, whereas one was tailored for the medical specialists and one for dentists. The first interview was a pilot and a few adjustments were subsequently made, as I learned more about the reality of dental sleep medicine. I chose to include it in the study, as it was fruitful for the aim.

3.2 Sample and recruitment

Sampling strategy

The participants were identified by purposeful sampling where the idea is to recruit individuals that are expected to elucidate the research aim (Malterud, 2011 p.56). The study wanted to capture different perspectives and opinions about the topic. Therefore, variety was emphasized, and it was preferable with participants from “both sides” of the phenomenon. Thus, inclusion criteria were; either being (1) a medical specialist diagnosing and treating OSA, or (2) a qualified dentists offering OAs for OSA. I also sought to recruit individuals from both public and private sector in order to get more perspectives and variation in the answers. However, it is only applicable to doctors because dentists in this context are in the private sector.

The researcher should take into account what characteristics are relevant for the study (Malterud, 2011 p.57). I did not consider gender or age as relevant for the aim, thus I did not consider it when recruiting. Neither, will I reveal the gender of the informants and I will refer to all participants as males in the text.

The focus areas were the south and eastern part of Norway due to possible participants in that geographical area. There were also practical reasons as I wished to carry out the interviews in person.

Recruitment

I also did internet searches and found dentists working with snoring and OSA. First contact was made through email, if the direct email address of the actual informant was available, I contacted them directly. If not, I sent the request to the clinic and asked them to forward it to the relevant individual.
To recruit doctors of interest, I sent emails several public health trusts in Norway and requested forwarding of the email to doctors working with OSA patients. I also had the same approach to private hospitals.

Doctors with private clinics in contract with the regional health authority were also contacted by emailing the institution. If there were no response after a while, I contacted them by phone in order to get a direct email address to the doctor, in some cases I got an email. Considering these are smaller institutions, it was expected to be easier to get in touch with them through phone.

Snowballing strategy was also used, as informants mentioned persons who could provide insights about the phenomenon (Malterud, 2011 p. 57). Thus, I subsequently contacted them. However, these did either not reply, or they did not have the possibility of taking part.

**Sample**

Three doctors and four dentists agreed to participate in the study. The doctors are currently working in public hospitals, the majority had experience with OSA from both public and private sector. All have experience OA and collaboration with dentists.

The dentists are experienced and proficient in dental sleep medicine, meaning OA production and adjustment, and competence to conduct and analyze sleep investigations. All have private clinics. Some are currently or have been, in collaboration with the regional health authorities.

All informants agreed that CPAP therapy is the best option for severely ill and patients with comorbidities.

**3.3 Conducting the interviews**

Selecting the location for the interview was not considered an issue in this project. Seeing all the participants were busy working professionals, they all proposed or expected me to come to their work place. This was a desirable location in all cases due to appropriate rooms for conversations such as meeting rooms or their own offices. In most cases, there were no interruptions.
Before starting the interviews, I presented myself, the topic, provided formal information and they signed the consent form (appendix 3), which they also had received prior to the interview. In addition, I asked if there were any questions.

All informants gave their consent for audio recording as method for documentation.

All the professionals were knowledgeable and experienced, I found that it was key in the interview process to be able to pursue interesting elements as they appeared. According to Malterud (2011 p.129) the interview guide can be considered a check list for what should be covered. Thus, I had the guide as support, but was free to let the conversation flow quite naturally, and subsequently bring up remaining questions. Due to different models of organization, practices and experiences, I learned that I had to be flexible in the interview situation and adapt questions to fit the specific informant. This is important when learning, and when the researcher wants to be open for new questions (Malterud, 2011 p.129).

Notes about the interviewee and environment were made as soon as possible, when the experience was fresh. Subsequently, transcription was started, which is the process of putting the actual data into text in order for analysis to be possible (Malterud, 2011 p. 75). I did the transcribing myself with the objective of reproduce what the participants actually meant. Doing own transcribing is recommended by Malterud (2011 p. 77-78) as it provides a more truthful transformation from speech to text, as the researcher may remember elements that can clarify meanings. In addition, the researcher experiences the interview once again, and in a new way which might facilitate additional thoughts.

I sought to describe the opinions of the informants truthfully and interpret in a manner that was loyal to the participants such as Malterud (2011 p. 45) describes.

3.4 Analyzing the data

In the analysis, the data is to be organized, interpreted and synthesized with the research aim in mind. Through a thorough scrutiny of the material we find answers in the patterns identified (Malterud, 2011 p. 91). Thematic analysis was used as it “provides a flexible and useful research tool, which can potentially provide a rich and detailed, yet complex, account of data” (Braun & Clarke, 2006 p. 78). I used the six phase method of Braun & Clarke (2006) as a guide for the analysis. The process of analyzing was started after the sixth interview, thus
I had much data to work with and identify patterns. I first read through the transcripts. Then, I coded data extracts that were repeated, surprising, interesting and relevant for the research aim. The coded data extracts were words, sentences whole paragraphs or quotes. After coding a few documents, I met with my supervisor in order to compare codes, they were quite concurrent and we agreed on that coding frame. After this phase, I sought to identify codes in the same pattern, thus they could go in the same themes. Subsequently, the codes were put into several themes in different documents containing the codes, quotes and important thoughts I had. The themes and codes were then revised and defined, the process of “identifying the ‘essence’ of what each theme is about (as well as the themes overall)” as Braun & Clarke (2006 p. 92) put it. Afterwards, the themes were merged into categories that would contribute to the research aim. In the writing process, changes in the categories were made.
4 Results

This section will present the findings from the data gathered. There are many factors affecting the cooperation between doctors and dentists. The findings will be presented in two main categories: impediments and facilitators for cooperation. The factors affecting cooperation in one direction, can also be seen as the opposite, affecting in the other direction. I therefore chose to divide into impediments and facilitators, and place the elements in the category where it had been highlighted, and where I thought it had most relevance and importance, as seen in the analysis. According to Malterud (2011 p. 116) it is important to systemize in a way which makes it clear for the reader what the researcher wishes to convey. Thus, impediments were divided into structural and social aspects to display the difference. Structural aspects comprise characteristics regarding the health care system, organization of OA provision and financial factors. Social factors are those associated to personal perceptions, attitudes and relations.

I wish to distinguish between the stage before cooperation is established, and when cooperation is established. These will be denoted as pre-cooperation and in-cooperation. This distinction is natural to point out due to the majority of factors emphasized to impede cooperation in this study was found to be related to the pre-cooperation stage. In addition, most facilitators highlighted were associated to the in-cooperation stage.

According to Malterud (2011 p. 116) the findings presented should be novel and substantial, which may elucidate the phenomena and contribute to the field of study. The sub-categories therefore encompass the most prominent and interesting themes prioritized by what was believed to elucidate study aim, which is to explore the impediments and facilitators for cooperation between medical specialists and dentists in OSA treatment.

There will first be outlined shared opinions. Subsequently, a summary of the main findings will be provided, before proceeding to the full presentation of the results.

Throughout the process, I got the impression that all informants were positive to cooperation and understood that a qualified dentist has the best grounding for production of OAs. In addition, the participants recognized the therapy as a valid treatment option for OSA, and acknowledged the requirement of a diagnosis before initiating treatment.
The medical specialists in the sample working with OSA at hospitals will be from here on be referred to as doctors, for simplicity.

Summary of main findings

Impediments for cooperation seemed to be mostly in the pre-cooperation stage, thus the actual start of collaboration is inhibited. Those factors were divided in sub-categories; structural and social aspects. In the first sub-category, absence of a national certification system, cumbersome process of competitive tendering for external provision, possible budget constraints and lack of knowledge and awareness among health professionals in general were found to be the central factors. The second sub-category, social factors impeding cooperation, include negative attitudes towards each other, perceived negative attitudes by dentists, and a lack of knowledge about each other’s competence or costs.

Facilitators for cooperation highlighted were mostly related to in-cooperation. The predominant elements for good collaboration were trust, clear responsibility and task sharing, acknowledgement of the other’s skills and knowledge about the other’s field. In addition, proper patient selection by doctors.

4.1 Impediments for cooperation

4.1.1 Structural aspects

Adverse experiences from competitive tendering

The missing establishment of OA therapy as a treatment modality in the health care system was highly apparent. As mentioned, it was quite recently formally acknowledged, which meant that the public system had to cover it. The various hospital trusts have autonomy to choose whether they shall provide the therapy and how they ought to organize it. Consequently, there seem to be considerable national differences in access to OAs. Furthermore, it is not incorporated in “Fritt behandlingsvalg” to this date, as previously mentioned.

The doctors were in concurrence in the point of view that the production of the OA may be done externally if certain conditions are in place, confirmed by a doctor:
«I believe that in principle […] this can be produced outside as well. […] I think it’ll work well if we have clear frameworks and definitions.»

However, there are adverse experiences with the process of competitive tendering which is required over a certain monetary threshold, according to public procurement laws. Experiences from competitive tendering were described as a complete chaos, dominated by complaints and discontent among dentists concerning the outcome. One of the dentists stated that they are not accustomed competitive tendering in their business. From the hospitals point of view, it was a challenging affair due to the lengthy process and administrative work involving it. A doctor described their experience at the hospital:

«We put it up for a competitive tender, and there was a lot of uproar [...] We were clear about the specifications and scored the different candidates in line with those, but the dentists who didn’t get the job were of course angry and started to write complaint letters regarding smaller details.»

The dentists had felt discontentment with the decisions of the competitions at some point in time. Much had to do with the basis on which the health trusts selected the contractor. In their opinion, the criteria or details were not optimal. Thus, assignment of the contract could go to a dentist they did not consider as the best choice. In addition, they thought that decision makers in the competitions over-emphasize the price when selecting external provider:

«I have attended numerous competitive tenders in the recent years [...] and price matters a lot. It’s almost as if you have the lowest price, you’ll get it, unfortunately. Knowledge and quality and stuff like that.. No.. [...] It’s mostly about the money, that’s my perception.»

In addition, a doctor expressed concern about the excessive focus on price and highlighted the importance of a long-term perspective in treatment:

«You shouldn’t always focus on price, because that’s what the public sector usually does, they put it up for competitive tendering and the cheapest wins. But, the cheapest is not necessarily the best or cheapest in the long-term. It should be good quality and follow-up, if not, the patients will keep coming back.»

Many share the belief that having a dentist integrated at the hospital might be the preferred organization, for various reasons. Firstly, because of the presumed difficult and time-
consuming aspects of the competitive tendering process, secondly, due to concern regarding continuity of the patient pathway when using an external dentist, as one doctor described it:

«[...] if you diagnose and just send them out, you’ll lose some continuity and follow-up. That’s what I think is challenging by doing it externally.»

A dentist shared the view that the optimal model of organization would be an integrated dentist. He added other concerns and described his plans:

«[...] I’m going to work as a part of the sleep team together with specialists in lung, ear-nose-throat, cardio and these specialized nurses, and that’s how it should be [...] or the dentist can have a private practice closely connected to the sleep team at the hospital. [...] I don’t think you can assure optimal quality if there is too big distance between the dentist’s office and the hospital.»

Other doctors supported the claim, however, they also stated that it might work with an external provider if there exists a good framework. A doctor highlighted that they would have no problem using an external provider if they could have a guarantee that the dentist was not financially motivated.

Concerning check-ups, there are different practices and most of the informants think the dentists should do the check-ups in order to see directly if adjustment is needed. On the other hand, examples of other practice were explained as a dentist shared:

«At [a hospital] the practice is still in such a way that the hospital is responsible for follow-ups, but the dentist has the treatment responsibility. They say, “it’s nice if the dentist has the equipment to do follow-ups, but it’s not demanded”. The hospital then pays a price for the whole thing, and the dentist has to make the best out of it. I do my regime because I want to see how well I can get these patients, while others think “I’m making this device, and the hospital can deal with the rest because that’s not my responsibility”.»

**Complexities, limitations of the system and possible financial constraints**

The dentists complained about the complexity and formalities of the whole system. They expressed opinions of the system being highly intricate, and processes excessively lengthy, as stated by a dentist:
«The public health system is not used to thing being fast. If you want a sleep investigation at [the local health trust] you’ll have to wait 48 weeks, and when you have received the sleep investigation device, you need to wait a couple of weeks for an appointment [...] and when you have got the diagnose, you must wait 49 weeks for the CPAP machine.»

In addition, Norway was compared to other countries where the processes were assumed to be much faster. A doctor supported the assertion of an overlong characteristic of the process related to different formalities in the system:

«There are certain formalities that are cumbersome, like the need to apply specifically for the subsidy to the appliance, and get the answer back, and then send it to the dentist and so on.»

One doctor was experiencing a favorable collaboration with a dentist integrated at their hospital. However, they only offered OAs to patients that were proven non-adherent to CPAP. The doctor could be open to offering OAs to as primary choice to suitable patients, but could not because of capacity issues:

«We do have many patients referred to us, and we evaluate people every day, if all patients with moderate OSA ought to receive an OA, we wouldn’t be able to deal with the waiting lists. It’s a capacity issue, we need to handle the queues, and now in the beginning, he’s only here one day every other week and that’s not a lot. The patients are time-consuming and he sees perhaps four or five patients in total that day.»

A dentist also stated that he believes that the budgets are limiting the possibilities for cooperation. In principle, the patients can receive free OA therapy if a doctor at the hospital requisition it. The dentists know this factor and can inform the patient about this. A dentist explained that if a patient contacts him for an OA and wants it covered, he refers the patient to the hospital, the patient then gets a diagnose and receives a CPAP machine. Further, he tells the patient to use CPAP machine for a while and then go back, and say that he cannot use the CPAP machine, but that he has heard about OAs and rather wants to have that treatment. Then, the hospital might give the patient a requisition for an OA at the dentist’s clinic. He added what the hospital’s opinion was about this:

«But then they [the hospital] say, “you mustn’t do that because then we’ll get extra expenditure because of these patients nagging about OAs. And we want to give them a CPAP”.»
Another actor present in this interrelationship is Behandlingshjelpemidler, which is the authority responsible for paying the different treatment appliances used outside the hospital. In principle, a doctor can requisition an OA made by a private dentist and the responsibility of paying lies with Behandlingshjelpemidler. A dentist had had an adverse experience with this authority:

«In principle, the hospitals can requisition treatment appliances, however, this is ruled with an iron fist by Behandlingshjelpemidler. We had a situation in [a county] where a cardiology specialist asked Behandlingshjelpemidler if he could send the requisition. It is a part of the law, but it was a lot of back and forth, but it worked out in the end.»

There are differences in opinion on how it ought to be organized. Within the medical community, there are differences in opinions on what is the most expedient way of organizing. Many think it ought to be done in the hospitals, and others believe that it can also be provided externally, a doctor had this view:

«In the future, I think it might be as natural to get an OA covered as you can get other things covered, for example hearing aid covered at a private medical specialists in contract with the regional health authorities.»

He did not think there is enough knowledge about OSA and diagnostic features to this day, but could picture system in the future where you are diagnosed by a medical specialist and can receive an OA at a dental clinic.

As there is no national guideline for which patients are to be offered OAs, there might exist financial constraints and the knowledge about dental sleep medicine among medical specialists seems to vary, there seem to be differences in what kind of practice they have in the different health trusts. Some hospitals require a three month try out period with CPAP and the patients has to be proven non-adherent to initiate OA therapy. At other hospitals, the medical specialist evaluates the patient and perhaps draw the conclusion of starting OA therapy as primary treatment. One dentists felt that he only received challenging patients:

«Some hospitals only refer the worst patients, those who doesn’t respond to anything. Then, the dentists become like a trash bin for them, like, it’s like “now we’ve tried everything, nothing works, let’s send him to [the dentist himself] and see if he can do something about it”. While other hospitals see that “here there are patients that might
respond well to OA therapy and from different reasons is not suitable for CPAP, so let’s try an OA”. More and more people think in this way.

**No established a certification system**

To this date, there does not exist a formal national certification scheme in Norway for proficient dentists. For the doctors it is essential that they are ensured the dentists have the skills and knowledge they claim to possess. The doctor has the final responsibility for the patient. Hence, they need to be confident that the dentist is proficient. Trust was found to be beneficial for cooperation, however, the participants saw the need for a certification system. Especially, if the doctors lack considerable knowledge about the therapy themselves, it may be hard to identify competent candidates for cooperation. Thus, a certification system would increase the doctors’ confidence in the dentists’ skills and knowledge. For the dentists, it would provide credibility and reliability. Another essential point that was expressed in the interviews, was that those dentists who are not proficient, might demolish the reputation of the treatment when they produce OAs that are not optimal:

«OAs for OSA is not something everyone can do, you can’t just put the patient in the chair, make the device and send him out. You have to check that it’s working, if not, you send the patient back to the hospital without any idea of the effect and the hospital might conclude that OAs don’t work. Thus, the dentist must deliver. That has been a bit challenging.»

Another dentist additionally underlined the point and understood skepticism from medical specialists:

«So, we have these barriers between medicine and dentistry, and I understand that they don’t trust us, they have every reason if we just make an appliance, adjust a bit forward and ask if they have slept well then yes..»

**Lack of knowledge among other health professionals**

A reoccurring theme in the interviews was the importance of knowledge among other health professionals regarding OSA and OA therapy as a treatment modality. It was included in structural aspects due participants’ opinions of lack of sleep medicine and dental sleep medicine in the primary medical education. For there to exist cooperation initially, premises are knowledge and recognition of the treatment. Both dentists and doctors participating
expressed concern about the lack of knowledge about OSA and dental sleep medicine among general practitioners, medical specialists and other dentists. There was also concern among the doctors regarding the complex picture that might exist in OSA patients due to comorbidities that require expertise in sleep medicine. A doctor accentuated the importance of specialist examination and knowledge about different sleep disorders when working with OSA patients. He stated that in addition to dentists, many doctors are not familiar with all diseases within sleep. Another doctor described adverse experiences with referrals from a private medical specialist:

«[…] he [the medical specialist] doesn’t follow our guidelines and some patients have contraindications for OA therapy, and it’s not always obvious in the referral. It’s no good when we receive referrals directly from private ear-nose-throat specialists out there and the referrals are inadequate, or at the same level as the general practitioners, who doesn’t have the same understanding about it.»

All the dentists declared that there is an insufficient apprehension among many medical specialists regarding OA treatment and highlighted the fact that the therapy has been the primary choice for mild and moderate patients in other countries for many years. Further they stated that there are still medical specialists in Norway who has never heard of it. Moreover, it was stressed by many dentists that sleep disorders in general are being taught insufficiently in medical school and is a neglected field in medicine, despite the large scope of the condition. One dentist describes his opinion concerning the general practitioners’ knowledge:

«[…] I invited all the general practitioners in [the county], had an information meeting and invited them to cooperate. I don’t remember how many general practitioners there are, but the place certainly wasn’t full. It’s a field that has been neglected in my opinion. I don’t want to say it more intensive than that, but you can say that they aren’t very informed.»

The dentists in the sample are, or have been very engaged in dental sleep medicine. They all have the equipment to do a sleep investigation and have the opinion that they might know more than medical specialists in some cases, as one dentist stated:

«I’ve attended courses in sleep studies with those “speaking the loudest” in the ear-nose-throat communities, but it’s their first time there. So, you can’t expect the general
practitioners to be completely up to date, but for us working with it and doing check-ups on the OAs, need to have the knowledge.»

4.1.2 Social factors and attitudes

Dentists’ motivation and skills

In the interviews, different negative and positive attitudes were recognized among the participants. There were captured a few perceptions by the doctors concerning the presence of economic interests among dentists. The doctors thought dentists were making a profit on production of OA, and one were afraid that the work would be driven by economic interests if they contracted with a private dentist:

«[…] And we don’t want it to be financially motivated. There shouldn’t be economic interests from the dentists’ side, because it’s obvious that there is money to earn here. But, the economic aspect is somehow in the background if we hire one.»

The lack of information about dentists’ costs and profit seems to have induced the doctors’ conception of dentists making money on OAs. One doctor had the opinion that the price charged for an OA is excessive and he was curious about the actual costs involved in the production of the device. In this context, the OA was referred to a “plastic thingy”. There were use of metaphors with negative meaning regarding dentists as they were referred to as “the rats on medicine’s back yard”. However, it was stated in a humorous manner, and it was added later in the interview that they clearly have a role in this setting. Another example of a negative metaphor was a doctor’s conception of the dentists’ interests, implicitly explicated:

«Prioritizing in health care is always hard, and there will always be someone that wants to have a straw down the public purse and suck intensely if they can.»

The majority of dentists claimed that they are not making a profit on OAs. One dentist in a contract with a hospital said that they receive around 10 000 Norwegian Kroner per OA. He also stated that with all costs included, such as patient meetings, producing the device and check-ups for three years, it is a deficit endeavor. Other dentists supported this argument saying that what they profit from is all the other dental work. A dentist depicted the lack of economic interests:
«I don’t see a single place in this puzzle from an academic view, where there are economic interests the way it is operated today. Those I know who works in contract receive around 9 000 [Norwegian Kroner] per production [...]. It’s really too cheap to lay your hands on, and it’s also a deficit endeavor if you go out of practice for a day to work at the hospital.»

The practice was spoken of as an “expensive hobby” in several interviews, for the reason that it requires a great deal of work that does not generate income. It was also pointed out that doing other dental work generate a much higher profit than dental sleep medicine. Conversely, one dentist disagreed with the lack of economic incentives:

«[...] the economic interests are absolutely present for us working privately, of course, it’s lucrative. Even though many on our meetings say: “No, we don’t profit from it.. It’s bad business..” Well, I think what I think. It can’t be that bad, and most people charge a lot more than I do as well.»

The majority of dentists agreed that an integrated dentist at the hospital might be the best solution. On the other hand, there were reservations concerning being employed at a hospital. One dentist was quite drained after the competitive tenders that did not turn out the way he wished. Thus, he did not want to apply for the position at the local hospital when it was announced. He explained that he was dispirited and had had enough of the whole affair. He subsequently added that he did not want to “just stand there like a worker by the assembly line” and “you’ll almost become a machine, it wouldn’t be that exciting”. He also expressed that “financially, it is a disaster” to work in the hospital. Hence, even though many of the dentists agreed the best organization model would be integrated dentist, not all would want to work there themselves. It was accentuated that the person would have to be tremendously interested in sleep medicine to work merely with OAs at the hospital. Another dentist highlighted the lack of economic incentives for working in a hospital:

«[...] and if you of out of practice for a day to work at the hospital, it is a deficit job. The only reason I applied for the job, was that I think it’s very interesting. And, when you have drilled in 20-30 years, it’s always interesting with new fields. It’s a genuine interest in it and it has nothing to do with “business”. It’s purely a donation to the state.»

The lack of understanding of all the work it takes to become proficient in dental sleep medicine might also be apparent because the level of skills between dentists may vary
considerably. Consequently, responsibility sharing may therefore differ from practice to practice. A doctor working with a dentist that had nothing to do with sleep studies, stated:

«He kind of gets the patient on a silver platter, already diagnosed.»

Attitudes towards medical specialists and hospitals

One dentist mentioned that the medical specialists that think the dentists have economic motivation, are the ones that do not have an understanding of dental sleep medicine or have not interacted with a dentist making the appliances. However, he thought the medical specialist he cooperated with had realized that it is not profitable.

Lack of knowledge about the other parties’ costs did induce adverse views. Some dentists implied that the hospitals do not know their costs and one made an example about CPAP treatment:

«They [hospitals] buy loads of CPAPs at a cost of maybe 1500 [Norwegian Kroner] from the supplier, so it’s a cheap treatment. At least that’s what they think, because they don’t consider all the hours Behandlingshjelpemidler uses to adjust and hand out masks and all this, because Behandlingshjelpemidler does that. [...] the hospitals think that if you buy a service externally, it costs 15 or 10 000 [Norwegian Kroner], but they think, “everything we can do inside the hospital doesn’t cost anything because we use our own people, buy a CPAP for 1500 and charge our budget with 1500.” Then, these specialized nurses are working on it.»

Thus, it was believed that the reason for the low use of OAs could be due to budget constraints at the hospital, as mentioned previously. A dentist argued that the hospitals consider a CPAP machine to be less costly than it actually is and thus, provide those instead of OAs:

«And then they think it’s cheaper because the machine is 3000 from the suppliers. However, it’s much more, because you need nurses, doctors, masks, tubes, and motivational visits to patients complaining because of a bad mask and so on.»
Professionalism and social relations

There was skepticism from some dentists regarding other dentists in the field that are not proficient in dental sleep medicine. In some cases, they expressed discontent with dentist that had been hired at hospitals. One dentist was not convinced that the person had a high degree of competence:

« [...] they weren’t very clever with the one they chose, so they didn’t get a highly competent dentist. It has something to do with the point that the doctors should dare to cooperate with someone that has his own opinions, that doesn’t just do as told. »

The statement also implies that the dentists are the ones possessing the knowledge about OA therapy and he thinks they should not be overruled by the doctors. It also seemed like he thought the hospital did not have enough competence to choose dentist.

Regarding influence and power there were expressed strong feelings by a dentist regarding not being heard because he is not a medical doctor, as he stated:

« It has actually come to the point where I was sitting at home now before Easter thinking: what the h***, I’m going to switch field! I’m going to be a doctor so that I can finally do something about this. No one listens to me you know, because I’m a dentist. That’s what’s challenging, the barrier “dentists and sleep”, wrong stamp. It’s not the knowledge that gives you power, it’s the title. [...] The titles are what matter in the academic community, titles! It’s very complicated. »

He evidently felt the barrier between the professions and had experienced the feeling of not being heard. Another dentist had experienced a situation where he felt they were seen as inferior to the medical specialists:

« [...] sometimes we felt like we were seen as the immigrant sweeping the streets, making the shoe sole or something. I don’t know if they envied us or what, maybe they were suspecting us of making money on it, even in those days we didn’t do that. [...] I kind of understand the situation, I’m a craftsman, yet a medical craftsman, who doesn’t have a clue about what they are doing. So, it’s kind of, not a conflict of interest, but maybe you could say a professional conflict. That does not exist when collaborating with others. »

Another aspect in this regard is that one dentist explained that he has a private sleep clinic with a medical specialist which is in contract with the regional health authority to perform
sleep studies on their behalf. He explained that they perform a sleep study there and if the patients need treatment, she is referred to a public hospital. The dentist further stated that at one hospital he knew that they perform a new sleep investigation themselves, even though they had performed one at his clinic. When I asked why, he said:

«Because they know I’m behind everything. They want their own baseline data.»

It is a relatively small community and consequently a high probability that the actors in the same geographical area know each other. In addition he said that a medical specialist once had asked another medical specialist planning to work with him:

«Are you going to work for that guy? [...] the dentist, he’s a dentist you know.»

An issue brought up by one dentist was that there is a fragmentation in the dental sleep medicine community in Norway. He explained that there are different groupings have not managed to work jointly towards promoting dental sleep medicine. According to him, the groupings are the Norwegian Dental Association, different specialist associations on one side and the Norwegian Dental Sleep Medicine Association on the other. He added:

«The first thing is that dentist and doctor have to agree, who’s doing what and has the responsibility for what. And then, there’s, dentist and dentist, what association is going to handle it.».

### 4.2 Facilitators for cooperation

#### 4.2.1 Clear distribution of responsibility

There was a consensus among the participants that a diagnose set by a doctor is a requirement prior to treating OSA. The formal task sharing appeared to be clear regarding the fact that the dentists’ job is to perform a certain task, namely produce the OA. A doctor clearly described it:

«It’s desired, and it’s my impression that the dentists working with this are very, knowledgeable, but they’re not supposed to diagnose sleep apnea. They should treat, but not diagnose, that’s a doctor’s task, most dentists agree with me on that point. We have the diagnostic responsibility and the treatment responsibility is shared.»
Since all the dentists participated have equipment to perform a sleep study, they normally perform one to see whether the patient has OSA when they come to their private office. If they are certain that the patient does not have OSA, they can offer an OA for snoring and the patient has to pay himself. However, if they think the patient has OSA, she needs to be referred to a medical specialist to be diagnosed. In the past, they would have to refer to the general practitioner, but recently they were permitted to refer directly to specialist care. Accordingly, there are agreement on the importance of a diagnose in order to treat. A dentist explained:

«And it’s essential that the diagnosis belongs to medicine and not odontology. So, the way I see it is that we make a treatment device. Someone needs shoe soles and others need an OA for the sleep apnea, so that’s just something we make. The fact that we are capable of doing sleep investigations, analyze them, and that we have a lot of knowledge about pathology and physiology regarding OSA, that is just because we want to know that it is safe to offer.»

There was acknowledgement of the importance of diagnosing prior to the treatment. However, one dentist explained how he proceeds if he performs a sleep study on a patient and it indicates OSA:

« […] we can’t write that they have OSA, but that we suspect OSA. They can also see in the report that the patient needs to be further investigated. After that, can we either let the patient go, or we can make sure the process continues, and start producing the device. That’s an understanding between us and the patient. They should probably have been further investigation before initiating the production of the device. […] But, we can start the process if they realize that they won’t get one for free [from the hospital].»

In cases like the aforementioned, the dentist is quite certain regarding presence of disease, therefore he starts the process of making the appliance so it can be prepared and ready for use as soon as the formal diagnosis is set. It is however contingent on the fact that the patient wishes to pay out of pocket for the device rather than receiving CPAP treatment, as that is the standard practice at the local hospital. The dentist also had to be certain that the patient is suitable for OA.
4.2.2 Knowledge concerning the other medical field

Knowledge about the other party’s medical area when cooperating was found to be an important aspect. A doctor emphasized the importance of both learning about each other’s field and giving the dentist a good foundation for producing the OA:

«[…] the dentists want us to learn more about the jaw and teeth and so on, since they should learn more about sleep […] so the dentists know that we at least consider whether it is possible to treat with an OA. […] that we examine and describe, will provide a better foundation for producing the device.»

Selection of suitable patients was also highlighted by a doctor:

«It’s important to select the patients properly. I think the dentists expect that the doctors send the right patients, to make it not a hopeless job. Some have told me that, from certain doctors they have received patients with gum infections and everything, and the teeth are just blowing in the wind. Those cases should have been detected. So, the doctors need to have some basic knowledge on how it’s supposed to look.»

Many dentists emphasized the need for dentists to learn about OSA related conditions and the ability to perform sleep investigations. This was argued both to ease communicate with doctors and making the dentists capable of finding the point where the OA works optimally. A dentist argued the importance of dentists’ knowledge:

«[…] you need to understand sleep reports […] and not just know about OSA, but related conditions such as UARS [upper respiratory resistance syndrome] which often is a complication, and restless legs and so on. So, you need to know a bit about this kind of stuff.»

In addition, because of their knowledge about OSA makes them able to identify and refer possible patients to specialist care further investigation.

4.2.3 Trust and acknowledgement of skills

Trust was found to be a key element for collaboration. The doctors need to be sure that the dentists are proficient and continuously work with OAs, as it is a craft that needs to be maintained.
Many dentists thought cooperation could be challenging to develop due to medical specialists perceiving that the dentists lack competence and knowledge. However, some had experienced that it had changed when the medical specialists had realized the deep understanding of OSA the dentists actually might have:

«I think doctors are skeptical to dentists because they don’t think they have knowledge about this. My opinion is that if you obtain enough knowledge and experience, making you capable of talking their language, on their level, you’ll be respected.»

Another essential point emphasized was the fact that the production of OAs is a craft, which require specialized skills and experience. In order to achieve the proficiency, a lot of work lies behind, as it was stated by several dentists. One dentist also highlighted the importance of learning the same as the medical specialists to some extent to ensure effective cooperation:

«[…] and it’s not enough to attend a day course and then start making devices. You need to connect with associations doing this, there are numerous national and international associations, and courses for doctors. You have to attend these, listen to the same lectures as the doctors do and learn the same as them. You’re going to communicate with specialists in cardiology, lung and ear-nose-throat and specialized nurses, so you need to be able to talk with them […]»

Thus, an abundant of time and effort is prerequisite in order to be proficient in dental sleep medicine. One dentist delineated how he thinks the medical specialists perceive them:

«I think they consider us as we consider the dental technicians. They produce prostheses, dentures and different kinds of teeth for us. We receive it and attach it to the patient in some way. Then, one day you realize that the technician really knows what he’s doing because he has thought of this and that and..»
5 Discussion

The purpose of this study was to explore the factors affecting the cooperation between medical doctors and dentists in OSA treatment.

In this chapter, the main findings will first be briefly delineated. Subsequently, be discussed in light of the theoretical framework from chapter two. Where needed, additional literature will be presented to acquire a greater understanding of the phenomena.

5.1 Summary of findings

Impediments

Structure

The impression of a disorganization of dental sleep medicine seems to be largely linked to the fact that OA therapy is not well established in the system. Structural factors impeding cooperation were found to be

- Adverse experiences with competitive tendering for external cooperation.
- Possibly insufficient budgets for the hospitals to provide OAs, which might affect how many suitable patients actually get offered OAs.
- The absence of national certification leads to uncertainty, and to the possibility of not-proficient dentists diminishing the reputation of OAs.
- A lack of education about dental sleep among medical specialists and dentists.

Social factors

- Negative perceptions about each other and perceived negative attitudes from doctors. They seemed to originate from lack of knowledge concerning costs and profits, leading doctors to believe that the dentists are financially motivated to produce OAs.
- Possible underestimation by doctors of dentists’ knowledge and understanding of the disease.
• Opinions by dentists indicating that hospitals do not know their own costs and are excessively focused on price in the competitive tenders.

• Dentists perceiving not being heard and seen as inferior by doctors.

**Facilitators**

In pre-cooperation the factor that seemed most important was awareness and knowledge about OA therapy. These other factors highlighted are related to in-cooperation:

• Having knowledge about each other’s field and practice, and proper patient selection by doctors.

• An embedded relationship and trust.

• Having clearly defined responsibility and task sharing.

• Doctors acknowledging the dentists’ skills.

**5.2 How does lack of knowledge and assurance influence uncertainty?**

The cooperation between doctors and dentist can be seen as a principal-agent relation, where the dentist is an agent performing a task on behalf of the doctor. There were found difficulties with the competitive tendering and from the dentists’ point of view considering who got the contract, and obviously, in a competition all actors wish to acquire it. The dentists had opinions regarding the specifications in the contract being inaccurate or decision putting excessively much weight on price. One dentist emphasized that the hospital did not know which appliance were the favorable one and thus disagreed with the decision of who got the contract. These kinds of challenges can be results of asymmetric information which is an issue in agency relations (Hagen, 1990; Shapiro, 2005). The uncertainty of not knowing whether the dentist the hospital decides to contract with is proficient may lead to adverse selection when hiring or contracting with a dentist. As described in the theory chapter, Sharma (1997) argues that it adverse selection can especially be a problem in agency relations with professional with specific knowledge. Shapiro (2005) affirms that certifications and licensing may alleviate this issue. The informants in the study had similar opinions and wished there was such a system in place in Norway. Such system was argued to provide
assurance, as stated by a doctor: «[…] and there are a few «cowboys» out there doing this and that. So, my wish is to have a certification for the dentists that know they can do the job.»

To prompt the agent to act in accordance with the principal in cooperation, agency theory suggests alignment of the principal’s goals with the agent’s goals, often with monetary incentives. However, in the medical field incentives can be challenging to define as the goal is predominantly high quality patient treatment. Quality can be complicated and expensive to measure due to several factors, also some out of the provider’s control. In a contract situation, the dentist typically receives a set amount of money per patient according to details specified, such as the type of device and check-ups included. The hospital (principal) in the situation cannot be certain that the dentist provides optimal care and that the dentist may influence the work according to what is specified in the contract and what is not. Especially in principal and professional relations, the specifics may be difficult to define due to lack of technical knowledge of the principal (Sharma, 1997). The contracts in this regard are usually prepared by professionals including medical specialists in sleep medicine, pulmonology or ear-nose-throat. Thus, they have plentiful knowledge of the medical aspect, but perhaps not enough knowledge concerning the details of technical characteristics of the oral device or procedures when producing and adjusting it. In addition, particularizing the contract can be accomplished to a high level, however the principal cannot be absolutely certain that the agent does not somehow compromise quality on costs to induce profit to themselves.

On the other hand, the doctor or hospital might do the check-ups themselves, thus they can see ex-ante whether the OA works or not. But, they cannot observe the actual effort of the external dentist affecting the result. Besides, it might be hard to determine what outcomes are due to factors the dentists cannot control. Such uncertainty issues are highly prevalent in agency relations, however might be mediated by an embedded relationship. This embeddedness provides trust, which has been found to be a mitigating factor for opportunistic behavior and power abuse by the principal (Granovetter, 1985). One doctor was experiencing a good cooperation and repeated interaction with an external provider, thus, an embedded relationship had been developed.

Some hospitals decided to integrate a dentist in their own facilities, thus minimizing the economic incentive that might exist. As a doctor stated, they did not want the dentist to be financially motivated. In an integrated collaboration this uncertainty of whether the dentist will act opportunistically should be decreased as he receives a fixed salary. On the other
hand, questions on effectivity and waiting lists may then be raised since the dentist does not have an incentive for high effectivity. However, that aspect will not be considered further as it is out of the scope of this thesis.

5.3 “You’re in it for the money … aren’t you?”

According to Allport (in Carpenter & Dickinson, 2011) contact theory proposes that the relation between different groups can be improved if they are in contact in a collaborative environment with aligned goals, equal status of groups and supporting institutional factors. This improvement would include a decrease in negative stereotypes and attitudes towards the other group. If the conditions are not met, negative attitudes may persist when the contact is unchanged and thus reinforces the stereotypical thinking. There were varying experiences from the dentists working with doctors. In some cases, the dentists perceived that after working with them, the doctors had realized how much knowledge the dentists may have, and the dentists perceived a change in attitudes. One of the mechanisms Pettigrew (1998) suggests to prompt change in attitudes is learning about the other group. Makaram (1995) also identified lack of knowledge about each other and the others’ practice domain as barriers for cooperation. A dentist that had been working with a doctor had noticed a change in attitude. He believed that when the doctor got familiar with the treatment and learned more about the dentist’s competence, the attitude towards him changed, and he got respect. He also added that he got the impression that when doctors realized how high costs actually are, they understood that he is not in it because it is “business” as many dentists put it.

The negative attitudes existing seemed to originate from the perceived financial motivation in dentists, thus learning about the treatment and might facilitate and develop cooperation. Evidence suggests that valuation of others’ work is important for effective interprofessional collaboration (Calman, 1994). A dentist had at some point perceived that a doctor saw him as inferior to them, and suspecting him to profit on OSA patients. Thus, he did not feel fully appreciated. Furthermore, lack of acknowledgement of their competence was apparent in the opinion of some dentists. It seemed to be a result of not receiving adequate compensation for the extensive work they have put into becoming proficient in dental sleep medicine. One dentist referred to working at the hospital as a “donation to the state”. This aspect might be supported, as a doctor articulated the following statement concerning learning dental sleep medicine, perhaps underestimating the work it requires:
«[...] if the dentists are interested, it’s possible for them to take a course and learn it. I think most dentist can do it... It’s not rocket science, and most can manage it.»

A dentist stressed the point that they should learn to speak the medical language on the same level as doctors to gain respect and be able communicate with them. Communication is a factor influencing collaboration (Chesters et al., 2011), thus to learning medical terms and being able to talk the medical language did not only make the dentist achieve respect, but also made cooperation easier.

There were also adverse experiences from dentists, and one explained that he had perceived negative attitudes from doctors. As seen in previous paragraphs, it might be explained by the lack of knowledge increasing or maintaining stereotypes. Social identification theory can help understand the phenomenon, which is the thought that individuals identify themselves with other similar individuals. This develops an in-group and out-group, where the in-group is favored (Stets & Burke, 2000). Thus, dentists and doctors may identify themselves with their profession rather than the team they are working in at the hospital. Albeit, in this study it seemed like negative attitudes were predominantly pre-cooperation and if they were in cooperation, the relation and collaboration were found to be favorable.

The lack of knowledge concerning costs went both directions, and attitudes were showing that dentists thought hospitals and doctors did not know their own costs in CPAP treatment.

Evidently in this study, lack of knowledge may impede cooperation. The literature on interprofessional collaboration highlights certain conditions that should be in place for cooperation to function well. Elements such as non-conflicting goals, trust, clarification and mutual understanding of roles and responsibility, and valuation of others’ contributions have been argued to be beneficial for cooperation (Calman, 1994; Coyle et al., 2011; Makaram, 1995). The participants that had experienced or were currently experiencing a well-functioning collaboration emphasized the significance of trust and a clear distribution of responsibility and a defined practice guideline to follow. Acknowledgment of skills was in addition an essential factor for collaboration. It was found in this study that doctors appreciated, and saw the benefits of the dentists’ work when collaborating.

Sharpe & Curran (2011 p. 72) argued that professionals are not seldom fully aware of the practice and expertise of other professionals. It has been quite apparent in this research that there is a lack in this area in pre-cooperation, which seem to inhibit collaboration.
5.4 How might professional pride and different backgrounds influence cooperation?

Research show that competition among health professionals may affect collaborative processes negatively (Makaram, 1995). According Abbott (1988), different professions seek to expand their jurisdictions by competing against each other in a dynamic system to enlarge their jurisdictions. He also asserted that specialized knowledge is partly what legitimizes the professional’s power to hold a jurisdiction. Thus, when more professions can treat the same condition, challenges might appear. It was mentioned in an interview by a dentist that he believed the doctors might think they are trying to take over their patients. Thus, that they were expanding their jurisdiction on the expense of the other. I did not perceive this opinion by the doctors, because they still considered the patient as their patient, even though the dentists produce the treatment device.

In the collaboration, there is a formal hierarchy where the doctor is the one deciding the treatment and the dentists perform the task. A dentist accentuated that they are the ones with the technical knowledge about the OAs and one mentioned that the doctors should «dare to cooperate with someone that has his own opinions, that doesn’t just do as told». The doctors are usually the ones making decisions and act autonomously, thus it may be a challenge when there are conflicting opinions.

Due to of expert abilities and knowledge, professionals are given higher status and power, which is something medical doctors have in history enjoyed in society and in the hospitals (Larson, 1977 in Pratt et al., 2006). There exists much literature on the socialization of medical students on their journey to becoming doctors (Luke, 2007). Clark (1997) defines professional socialization broadly as “the acquisition of the knowledge, skills, values, roles, and attitudes associated with the practice of a particular profession”. It has been argued that the role of environment, expectations and social norms play a significant role in the process of becoming a doctor, in addition to the formal medical education (Hafferty & Franks, 1994). Sharpe & Curran (2011 p. 72) pointed out that the socialization process in specialized professional education might lead to the professionals considering themselves as superior to others. They might be trained to be autonomous and believe in the dominance of their profession. According to Clark (1997) the socialization process is a continuum where individuals form their own identity, professional paradigm and beliefs in contact with the environment. In the interviews, power struggles were mentioned and one dentist felt that the
titles are ruling in the medical field and not the knowledge. He argued that or him having the title as dentist made it hard to be heard by the doctors. Makaram (1995) found that power struggles might be detrimental for collaboration. The power struggle may be linked to the socialization processes where the health professionals are taught to be autonomous and use their expert knowledge in patient care. Thus, when both professionals have their own identity and hold onto their opinion, challenges may arise.

Another aspect is that whether there exist cooperation or not, relies also on awareness of OSA and dental sleep medicine. A dentist wished to raise awareness about OSA as the serious condition it is. However, he expressed feelings of powerlessness regarding raising awareness and receiving more funding OSA treatments. He had the opinion that doctors have to lead the way due to their perceived lack of credibility:

«Unfortunately doctors have to lead the way to make the government grant more funds. I don’t think the dentist can do it, people would be like, “what in God’s name do dentists know about this, you should stick to the teeth”»

This implies that there are perceptions of difficulties of being heard, not only in the medical community, but also by others.

**Are there perceptions of different values and focus?**

An aspect that can complicate collaboration may be that different professionals are trained in particular traditions and have different backgrounds (Ginsburg & Tregunno, 2005). They are also driven by values and these may diverge between different professionals. Sharpe & Curran (2011 p. 75) identifies “shared understanding of roles, norms and values” as important for interprofessional collaboration. Professionals are trained in different ways and people are also intrinsically different in what they believe, thus values and expectations in cooperation may diverge.

What I perceived from the interviews was that the dentists in general were perhaps more impatient and focused on diminishing waiting lists. While doctors also had waiting lists in mind, they seemed focus more on high quality and integrated patient care. The informants perhaps already have a notion of the other’s values prior to cooperation because they know what background the other has. For example, doctors might think the dentists do not think about the patient as a whole, considering they are trained to concentrate on mouth and teeth.
Also, their task in this regard is predominantly to produce the device and perhaps do check-ups. In addition, if the dentists are paid a price per patient, the doctors may think the dentists focus on quantity over quality. There were expressed opinions by the dentist that the health care system is slow and complex. They might link these associations to the doctors as they are part of the system. Pre-established conceptions are also linked to stereotypes and established attitudes, these conceptions may prevail if there is a continuous confirmation of those thoughts (Thomson et al., 2015). It is also argued that we tend to ignore features disconfirming our conception and notice features confirming our established view (Rothbart et al., 1979).

Both parts might have already established conceptions of the other’s goals and it might influence cooperation. Research shows that conflicting goals can be detrimental for collaboration (Tjosvold, 1984). In this study, there were not present conflicting goals per se. However, what was emphasized in the interviews varied slightly from doctors to dentists, such as mentioning of patient considerations and efficiency, which may imply different goals or expectations to practice. According to Miller (1997), it is important to have a mutual understanding of expectations in collaboration.

**The dentists’ desire to differentiate**

Another aspect highlighted by dentists was the fact that other dentists lacking skills might diminish the reputation of OA therapy if they do not perform optimally. According to Lingard et al. (2004) professionals seek to differentiate intraprofessionally, which means they gain knowledge that distinguish them from other professionals of their kind. The absence of a certification system seemed to be an issue for dentists wishing to distinguish themselves from other dentists. Production of OAs was often referred to as a craft which, as expressed by a doctor requires «a certain volume in order to gain experience and routines for it to work well.» As seen previously, without a certification it may be difficult to know how skilled the dentist is. However, the problem might be on the other hand, what should be the threshold for obtaining certification? And, if a certification is in place, how will those without certification gain the experience of production? Dentists may produce OA for snoring as they wish, also if a certification for dental sleep medicine would be in place. Nevertheless, producing OAs for snoring might not provide enough practice to treat OSA patients. One dentist thought there should be realized a formal education that provides a title and authorization to practice dental sleep medicine.
Additionally, since the practice of who does the check-ups may vary, the dentists that do not do check-ups, will less likely acquire the same expertise in sleep studies as those who do.

### 5.5 Implications

The aim of this study was to explore factors affecting cooperation with a purpose of getting an idea of the potential for development of cooperation, resulting in possible better patient outcomes and efficiency. When clinical collaboration is in place, from the participants’ experience, it seemed to work well. It has been asserted that many factors that impede cooperation are in the pre-cooperation stage. The predominant factors that seem to impede start of cooperation, both integrated and external, are illustrated in figure 1.

![Figure 1. The relationship between knowledge, attitudes and cooperation](image)

It seems as knowledge and awareness about OSA and OA therapy in general, affect the degree of establishment as a treatment modality. When structural aspects are not in place, such as a national guideline for cooperation and a certification system, it may impede cooperation as shown in the figure. Little establishment OA therapy may lead to a lack of knowledge among medical specialists and dentists about each other or the other field, due to little or no focus on it in medical and dental education.

One clear structural element that should be in place to facilitate cooperation is a certification of proficient sleep dentists. This would provide more certainty for doctors and reliability for
dentists. It would also minimize occurrence of non-proficient dentists producing OAs that are not optimal.

A national guideline for how to organize cooperation and clarification of the role the dentist should have in the clinical collaboration would perhaps be preferable. Canadian dental sleep medicine professionals saw the need for recommendations for interdisciplinary teamwork and clarification of the dentists’ role. It is affirmed in a position paper (Gauthier et al., 2012). However, it is not stated how it should be physically organized.

Much research has focused on interprofessional education to improve future collaboration (Ginsburg & Tregunno, 2005; WHO, 2010). The Centre For The Advancement Of Interprofessional Education in the UK defined it as, “when two or more professions learn with, from and about each other to improve collaboration and the quality of care” (CAIPE, 2002). This can be considered as a wide definition, consequently, many varieties of interprofessional training may be included. Learning about the other field is one thing, however learning with the other actor is another. The first can be achieved by independent studies or in the formal education. However, the latter requires the involvement of more professionals, which might be harder to realize.

Education about sleep medicine should perhaps have a larger focus in the primary medical education than what it has today. This could increase focus and awareness of OSA. Also, education about dental sleep medicine could be beneficial to implement in the primary dental education, so they can detect possible OSA patients. In addition, it could make them interested in the field and eager to learn it in their future career. The dentists that do want to work with dental sleep medicine should learn about OSA and related diseases, as it can be beneficial due to greater communicational skills, as communication is considered an important factor in interprofessional collaboration (Thomson et al., 2015).

In the medical specialization education for doctors working with OSA, dental sleep medicine should be a component. The doctors should learn to identify patients who are suitable and are expected to benefit from OAs.

It was apparent that adverse attitudes might originate from the lack of knowledge regarding dentists’ motivation to work with OSA patients. For doctors to learn about costs of production might be beneficial to decrease doctors’ presuppositions about dentists being financially motivated. It can be argued that this can be achieved when doctors and dentists
interact and get to know each other. By attending the same conferences, seminars or workshops, they would have the chance to learn with and about each other, as this is expected to enhance future cooperation (CAIPE, 2002).

One of the characteristics of the system that seemed to impede external cooperation was the possible cumbersome process of competitive tendering for hospitals. A question that can be raised is; to what extent are the existing procurement rules applicable to health care? There might be a need to tailor and organize it differently to ensure a smoother process and possible benefits of this kind of cooperation.

In the question of what model of organization is optimal, there are different opinions. Johansson et al. (2014) argue that an integrated model with an interdisciplinary team is preferable. In Sweden, where OA therapy is more common, there are starting to emerge interdisciplinary centers (Tegelberg & Lindberg, 2015). Thus, it seems that integrated models have not been used traditionally. However, it might be challenging to identify what provides optimal care with respect to high quality and cost-efficiency.

5.6 Methodological considerations

According to Malterud (2011 p. 23) it is important to acknowledge that the research will never be flawless, but that is not the goal either. What should be strived for is to be transparent, show our decisions and how we got our answers.

Reflexivity

Human aspects influence the research process and being reflexive means that the researcher acknowledges and understands own preconceptions and features. In addition, the influence it may have on the research. One always has expectations for the research, and it is essential to contemplate oneself and the decision one makes throughout the process (Malterud, 2011 pp. 18-19). I did have expectations on what the interviews would show. I had read literature and done research on the topic before the interviews. Hence, I had background knowledge and had inevitably made some thoughts. According to Kvale (1996 p. 33), the researcher should be aware of own presuppositions in the interviews and think critically about them. Thus, I tried to have an open mind to what the participants said, and I do not think my presuppositions affected the quality of the research.
The interview is a joint creation of knowledge in a dialogue between two parties interacting (Kvale, 1996 p. 36). The interviewer is a tool herself for gaining information, and should therefore consider own characteristics that might influence the informant (Justesen & Mik-Meyer, 2012 p. 55). Myself, being young and female might have affected the informants’ answers. However, I did not perceive it to do so, other than at times age appropriate examples were provided in explanations or argumentations.

According to Kvale (1996 p. 145), the interviewer should pursue interesting aspects that appears during the interviews. In the beginning, I at times failed to follow up possible interesting subjects and it was brought to my attention by my supervisor. Thus, in subsequent interviews I focused on detecting matters that ought to be clarified or elaborated further.

Kvale (1996 p. 149) also argued that the interviewer should steer the direction of the conversation and not be afraid to interrupt digressions by the informant. At times, the interviewees went on about matters not directly relevant for the research aim. However, I found it undesirable to interrupt them considering I did not want to be perceived as rude or uninterested. The participants are knowledgeable and experienced professionals, and I saw the opportunity to learn more about the field, and have an enhanced foundation for the following analysis. Nonetheless, I did steer the interviews in which questions I asked and what I chose to follow up, but I let the conversation flow quite freely.

**Internal and external validity**

Internal validity in research is the concept of “the degree that a method investigates what it is intended to investigate” (Kvale, 1996 p. 238). To examine this, we should ask ourselves whether our instruments and method were relevant to gain the knowledge for our research aim (Malterud, 2011 p. 22).

As my research aim was to explore impediments and facilitators for cooperation, I think the method chosen in agreement with my supervisor was suitable as I was interested in understanding and interpreting insights from the professionals (Justesen & Mik-Meyer, 2012).

Many aspects were repeated in the interviews. Nevertheless, I will argue that saturation was not fully accomplished, which is when the researcher think new inputs will not lead to further enlightenment (Malterud, 2011 p. 60). I sought to recruit more participants throughout the
research process. It turned out to be challenging due to practical and time limitations. Thus, the sample size was quite small. The adequate number of participants in qualitative research depends on different factors, and it is not “the more the merrier”, as we need a deep and thorough analysis. The analysis may become shallow if the sample is redundant (Malterud, 2011 pp. 59-60). What is important is to what extent the informants are suited to provide rich insights to our topic. What questions we ask and how appropriate our data collection method is, do also play a role in determining the adequate sample (Malterud, 2011 p. 60). I did research to determine and recruit desirable participants and I believe that the sample provided me a greater understanding of the topic.

Only doctors currently working in public hospitals answered positively to the request of participation. However, some had been working privately in the past. Thus, I did not get insights from doctors working entirely private, but insights from ones who had in the past.

I experienced that it was more challenging to recruit doctors than dentists. This may imply in itself that the dentists interested in the field are more enthusiastic and willing to participate for that reason.

It must be emphasized that negative attitudes perceived by the dentists are from their point of view, and might not be as bad as they think. I did detect some adverse attitudes directly from the doctors, but many experiences were from the dentists’ point of view, and they might have exaggerated. However, whether it is perceived, or the reality, it can be believed to affect cooperation.

External validity is the question of whether the findings can be applied in other contexts than in the one studied, also called transferability. The goal of qualitative studies is not application of findings to large populations, but should to have some degree of transferability (Malterud, 2011 p. 22). The research was executed in a Norwegian setting. Thus, findings related to the organization of the health care system, might have some transferability to countries with a similar health care system. The absence of national guidelines and a certification system are factors that would likely affect cooperation in other countries, as uncertainty may be present.

Malterud (2011 p.22) argues that the transferability is usually related to the sample. In this study, medical professionals participated. I will argue that many social factors impeding cooperation may be transferable to other countries where socialization and training of the professionals are comparable. The need for interprofessional cooperation can be found in
many contexts in health care because treatments are becoming more specialized, and there is a focus on clinical pathways with contributions of interdisciplinary competence.

Facilitators for collaboration was found to be clarification of roles and responsibilities, trust, acknowledgement of the other’s skills and knowledge about the other’s field and practice. These aspects can most likely be applied in other countries as there is literature identifying these preferable elements for cooperation in health care (Calman, 1994; Howard et al., 2003; MacNaughton et al., 2013; Miller, 1997). Some factors can also be applicable in other fields of occupational life where cooperation within a profession or interprofessional collaboration is desired.

Lack of knowledge regarding other’s field and practice, as well as their background for background for doing what they are doing, may lead and negative attitudes. Getting to know the other actor was seen favorable in this study, and might be helpful in other contexts.

**Ethical considerations**

The participants were informed about the aim of the study both by email with consent and information letter attached (appendix 2). I also gave them information again in person before conducting the interview. Written consent was ensured, and I assured them about their anonymity and that all data would be treated with confidentiality. I also informed them that the Norwegian Social Science Data Services had approved the project. The audio recordings were deleted when transcription had been completed. Consent letters were stored separately from transcriptions.

I am aware that the dental sleep medicine community is quite small in Norway, thus I did my best to ensure that no statements could disclose the persons.
6 Conclusion and recommendations for future research

The aim of this study was to explore impediments and facilitators for cooperation in OA therapy, which is a new field in Norway. The overall purpose was to get an idea how to facilitate cooperation, with patient pathways and efficient resource use in mind.

The findings suggest that most impediments were associated with inhibiting the start of collaboration. The factors seem to originate from a lack of knowledge about dental sleep medicine in general and that it is currently not a well-established treatment. A lack of knowledge about each other and their costs appeared to induce negative attitudes.

Facilitators for cooperation were predominantly related to in-cooperation. The factors were trust, clearly defined responsibilities and tasks, acknowledgement of the other’s skills and knowledge about the other’s field.

Elements that are expected to enhance cooperation found by this study are; 1) raising awareness of dental sleep medicine in general, 2) dentists and medical specialists working with OSA learning about each other, the other’s field and costs, and 3) implementation of certification system for proficient dentists and development of a national guideline for cooperation. These factors may be lengthy to implement, but I believe they are necessary.

Recommendations for future research

This research has left me with several curiosities. Considering the limited time for this thesis only a part of dental sleep medicine could be explored. Several possible aspects could need further research.

It would be interesting to map out the use of dentists in OSA treatment across Norway. This could for example be executed by a cross-sectional study, by sending a survey to all hospitals treating OSA patients. The survey could encompass questions regarding whether they are using dentists, how it is organized and how satisfied they are.

Perhaps trying to see if the cooperation has been challenging in other countries could be an idea. In addition, investigate how cooperation is organized and how it works in other countries. It seems like dentists in Sweden are not located at the hospital (Tegelberg &
Lindberg, 2015). Thus, it could be useful to gain knowledge about this kind of organization where it is likely to be more established, due to the longer period of OA therapy use for OSA patients.

A study of medical and dental graduates may be executed to explore attitudes towards each other, and what they think of interprofessional collaboration. This could be performed by a study with focus group interviews or surveys. Also, it could be useful to study medical specialists’ and dentists’ attitudes on a more representative basis, for example by surveys.

Research exploring patients’ experiences with OA treatment at a hospital, and experiences at an external dental facility, could potentially yield interesting data.

Costs of OA treatment might be favorable to clarify. Investigating what is more cost efficient, the integrated or external model could help determine how it should be organized. However, due to the lack of established collaborations in Norway, it might be useful to look at other countries. But then again, there are various challenges with transferability and it might be an intricate endeavor.
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Appendix

1. Approval from the Norwegian Social Science Data Services (NSD) (In Norwegian)

2. Information and consent letter (In Norwegian)

3. Interview guide: doctors

4. Interview guide: dentists
Appendix 1.

Norsk samfunnsvitenskapelig datatjeneste AS
NORWEGIAN SOCIAL SCIENCE DATA SERVICES

Ivan Spehar
Institutt for helse og samfunn Universitetet i Oslo
Postboks 1130 Blindern
0318 OSLO

Vår skrd. 22.02.2015
Vårt ref. 47318 / 3
Deler cato.
Deler ref.

TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 15.02.2016. Meldingen gjelder prosjektet:

47318 The relationship between physicians and dentists in Obstructive Sleep Apnea Syndrome treatment: a qualitative study

Behandlingsansvarlig: Universitetet i Oslo, ved institusjonens øvrste leder

Daglig ansvarlig: Ivan Spehar

Student: Anna Lien Espeland

Personvemombudet har vurdert prosjektet og finner at behandlingen av personopplysninger er meldeplichtig i henhold til personopplysningsloven § 31. Behandlingen tilfredsstiller kravene i personopplysningsloven.

Personvemombudets vurdering fortsetter at prosjektet gjennomføres i tråd med opplysningene gift i meldeskjemaet, korrespondanse med ombudet, ombudets kommentarer samt personopplysningsloven og helseregistreforen med forskrifter. Behandlingen av personopplysninger kan settes i gang.


Personvemombudet vil ved prosjektets avslutning, 30.09.2016, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

Vigdis Namtvedt Kvalheim

Hanne Johansen-Pekovic

Kontaktperson: Hanne Johansen-Pekovic tlf: 55 58 31 18

Dokumentet er elektronisk produsert og godkjent ved NSDs rutiner for elektronisk godkjenning.

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Appendix 2.

Samtykke om å delta i mastergradsprosjekt «Forholdet mellom leger og tannleger ved behandling av obstruktiv søvnapné: en kvalitativ studie»

Som mastergradsstundet ved Avdeling for helseledelse og helseøkonomi skal jeg gjennomføre et prosjekt med mål om å utforske forholdet mellom leger som diagnostiserer og behandler obstruktiv søvnapné og kvalifiserte tannleger som tilbyr skinnebehandling for denne tilstanden.

Prosjektet blir veiledet av Ivan Spehar, førsteanumuensis ved Avdeling for helseledelse og helseøkonomi, Universitetet i Oslo. Prosjektet er godkjent av Personvernombudet ved NSD.

Deltagelse i mastergradsprosjektet «Forholdet mellom leger og tannleger ved behandling av obstruktiv søvnapné: en kvalitativ studie» innebærer at du vil bli intervjuet i om lag en times tid. Intervjuene foretas av mastergradsstundet Anna Lien Espeland og vil være en åpen dialog.


Det er helt frivillig å delta i prosjektet du kan på hvilket som helst tidspunkt trekke deg uten å måtte begrunne beslutningen nærmere.

Er det spørsmål i forbindelse med denne henvendelsen kan undertegnende kontaktes på telefon eller epost.

Med vennlig hilsen
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Samtykkeerklæring
Jeg har mottatt informasjon om mastergradsprosjektet «Forholdet mellom leger og tannleger ved behandling av obstruktiv søvnapné: en kvalitativ studie» og er villig til å delta i prosjektet.

Dato: ............

Signatur: ........................................... Telefonnummer: .................
Appendix 3.

**Interview guide: doctors**

- Could you tell me about your background?
  - Education and work
- What is your experience with OSA?
- Could you tell me about the volume of OSA patients diagnose and treat?
- How is the patient pathway after you have diagnosed the patient?
  - Mild, moderate and severe patients
- Do you use dentists for OA therapy?
- How is it organized?
  - Why have you chosen this way of organization?
- Do you have any thoughts regarding OA therapy?
- What is your opinion about the organization of OSA treatment in Norway to this day?
- What do you think would be the optimal solution for cooperation with dentists?
- Are there any challenges in cooperation with dentists?
- What do you think the dentists think about collaboration with medical specialists?
- Are there economic interests involved in this field?
- Is there anything you wish to add?
Appendix 4.

Interview guide: dentists

- Could you tell me about your background?
  - Education and work

- What is your experience with OSA?

- Could you tell me about the volume of OSA patients you treat?

- Could you tell me the reason OSA patients come to you?
  - Are you in contract with the regional health authorities?
  - Do many have a requisition from a medical specialist?
  - If not, what do you think could be the reason?

- Do you refer many patients to specialist care?

- What do you think about cooperation with medical specialists?

- What is your opinion about the organization of OSA treatment in Norway to this day?

- What do you think would be the optimal solution for cooperation with medical specialists?

- Are there any challenges in cooperation with medical specialists?

- What do you think the medical specialists think about collaboration with dentists?

- Are there economic interests involved in this field?

- Is there anything you wish to add?