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Social network analysis of a health organization with
focus on the social educators with medical
competencies role for communication flow

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Author note

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Abstract

This thesis aims to identify the role of social educators with medical competence in the communication flow in a health organization. There is a demand for social educators with medical competence in care homes, but few studies have examined their role by using social network analysis (SNA). SNA was used to investigate the relations and centrality within actors in different network structures, focusing on the social educators with medical competence role for communication flow. The areas examined were the following: (a) communication for carrying out daily work tasks, (b) professional communication of knowledge and questions, and (c) communication in crisis situations. These areas were analyzed using the software UCINet. Data collection was done by conducting a questionnaire and semi-structured interviews. Data regarding communication with relatives, collaboration with colleagues, challenges, and potential improvement were also obtained. The results indicated that the social educators with medical competence had a central role concerning the communication flow regarding the implementation of daily work tasks and communication of professional conversations and questions. But all the social educators with medical competence in the organization were also employed as care service managers. Whether the centrality is related to their role as social educators with medical competence or care service managers is therefore unknown. In the discussion, it was also discovered that certain behaviors in the organization may have been maintained by social reinforcement and that the organizational structure could impact the actor's centrality and behavior. Further research will be relevant based on a lack of studies of social educators with medical competence and to gain a deeper understanding of their role for the communication flow.

Key words: Social network analysis, UCINet, Complex systems, Social educators with medical competence, Communication flow.

**Social network analysis of a health organization with focus on the social educators with
medical competencies role for communication flow**

The present thesis offers a network analysis focused on social educators with medical competence. Social educators with medical competence are both health and social workers, and their job focuses on people with developmental and/or cognitive disabilities (Fellesorganisasjonen, n.d). A report from Fellesorganisasjonen and Nasjonalt kompetansemiljø om utviklingshemming (2020) states a great need for more social educators with medical competence, especially in the sector for home-based services for people with disabilities. One of the reasons the report believes that there is a growing need for more social educators with medical competence in the sector for home-based services is that people with developmental disabilities are constantly victims of human rights violations. One of the main reasons for human rights violations is a lack of competence and knowledge within staff working with people with developmental disabilities. The study program that educates social educators with medical competence is the only education in Norway that focuses on people with developmental disabilities and their rights (Fellesorganisasjonen, 2017). However, only 10,7% of the employees who work in home-based services for people with disabilities have an education as a social educator with medical competence (Fellesorganisasjonen & Nasjonalt kompetansemiljø om utviklingshemming, 2020). Social educators with medical competence also work within specialist health services, schools, elderly care, mental health work, and child welfare services (Fellesorganisasjonen, n.d). Those kinds of organizations can all be considered complex systems.

Several researchers point out that it is difficult to agree on a definition of a complex system (Axelrod & Cohen, 2008; Ladyman et al., 2013). Axelrod and Cohen (2008) support an explanation that a complex system is something difficult to predict. One of the reasons it is difficult to predict is that it cannot easily explain the regularity of the system because the

system is not a simple linear term where A leads to B. Another reason why it is difficult to predict is that a complex system considers multiple actors and factors. The parts cannot be taken apart and then predict what will happen when the parts are reassembled (Axelrod & Cohen, 2008). A complex system contrasts with something complicated, where one can expect what happens when the parts are reassembled (Ladyman et al., 2013).

Concerning social educators with medical competence and their role in home-based services for people with disabilities, it can be hard to be entirely sure what will happen if one social educator with medical competence is removed from the system and replaced with another. It is not the individuals themselves that form a complex system, but the interactions between them (Axelrod & Cohen, 2008). Replacing an employee with another could lead to a change in interaction and communication. It can therefore be problematic to predict the outcome of the change, which can assume that the sector for home-based service functions as a complex system. The formal organizational structure co-exists with an informal, emergent web of interactions in a complex adaptive system. These are what we call social networks. In a social network, nothing will be random, and nodes in the network will vary (Sandaker, 2009). A complex system can be related to developing patterns of interactions that have an emerging structure. In organizations, the formal structures exist simultaneously with informal, emergent structures that also can be called networks in complex systems (Bento & Garotti, 2019).

This study aims to map the role social educators with medical competence have within a health organization for people with disabilities. This with an overall focus on the flow of communication. The research question in the study are thus as follows: *What role do social educators with medical competence have concerning the communication flow in a health organization for people with disabilities?* To investigate the research question, social network theory, complexity theory, behavioral science, and previous empirical research will be used.

Regarding the communication flow, it is desirable to examine different situations to see if the role of social educators with medical competence is the same in various situations at the workplace or if the role is situation-specific. Several areas will therefore be investigated. In three of the areas, the network structures will be investigated. Those three areas are communication for daily work tasks, professional communication of knowledge and questions, and communication in crisis situations. In addition, communication with relatives and potential weaknesses and challenges will also be investigated.

Fields of selection and studies

Social network analysis

A social network can be described as a set of relatively lasting, informal connections between people (Schiefloe, 2015). The social network perspective focuses on the relationship between social units and how the implications of these relationships are (Wasserman & Faust, 1994). In Otte and Rousseau (2002), SNA is described as a broad strategy for studying of social structures but not a formal theory. In this case, SNA helps to form a visualization of the social structure as a network with ties that connect the members and channel the resources. The focus is not on the individuals but on the characteristics associated with the connections in the network (Otte & Rousseau, 2002). One of the oldest criticism of SNA is that the field has a shortage of theoretical understanding and that SNA is just descriptive or methodology (Borgatti et al., 2009). It is a method, but SNA can also contribute to analysis of different theoretical perspectives (Borgatti et al., 2009). Social network theory contributes, among other things, to answer big questions which have been topics in philosophy over time. One of those questions is questions related to social order and how autonomous individuals are connected to create stable, functioning societies. SNA also contributes to answering many of other social phenomena, which can be everything from individual creativity to profitability in organizations (Borgatti et al., 2009).

A social network can be defined as a set of nodes, also called network members, that are connected to one or more actors in the network (Wasserman & Faust, 1994). The nodes in the network also have different characteristics, and within SNA, the relationship between the nodes is named ties or links (Borgatti et al., 2018). Ties can be both weak and strong. Strong ties can be explained as solid relationships and often deal with interaction within smaller groups. The weak ties can, in contrast, be described as less binding and fragile relationships and thus often deal with relationships that go beyond the small solid groups (Granovetter, 1973). Within research on social networks, attempts are usually made to investigate how different ties influence each other (Borgatti et al., 2009).

Social network history

Network research has gained a growing interest over the last few decades, both in physics, social sciences, and natural science. In social science, network theory has led to the explanation of social phenomena within a broad subject area (Borgatti et al., 2009; Christakis & Fowler, 2013).

In the publishing by Moreno (1934), he found a way of making the social structure understandable. Hudson School for Girls in New York had an increasing tendency for girls to run away from school. Moreno claimed that the run-away had little to do with individual factors but that it was a connection with positions in an underlying social network. Because of this, the social network at Hudson was mapped using "sociometry". "Sociometry" is a technique for graphically depicting individuals' connections with each other. The result showed that it seemed like the girls had escaped due to their position in the social network, without even being aware of it (Borgatti et al., 2009).

During the past three decades, researchers have devoted a lot of time and attention to networks in organizational contexts. Antecedents and implications related to networks have then been part of the focus area. In this kind of works, researchers define a network as a social

phenomenon that is a buildup of units connected by ties reflecting interaction and mutuality (Carpenter et al., 2012). SNA has also evolved from a quite nontechnical structure to something more technical. Mathematical tools and computer simulations have been developed to make visible models to display the relations between agents in the networks (Scott & Carrington, 2011).

The use of network analysis

Social networks can be examined through a diversity of perspectives. Which contributes to the complexity of research on social networks. In some cases, the network can be a context where the actors' interaction impacts on the actors' actions, and in other cases, the network alone can be the study phenomenon (Carpenter et al., 2012). In Carpenter et al. (2012), two broad classes of network studies are presented. The first class of studies focuses on recognizing the outcome and consequences for the actors in the network. This helps the researcher describe the network outcomes' fundamental mechanisms and the network constructs, which later will serve as predictors in the network. This class is named "social capital research", because social capital is a well-used concept to get the outcomes and effects the social network has on its participants. The second class of studies focuses on recognizing the pattern and antecedent to the network, both when the network is made and when it later changes. Because of this, this class is named "network development research". Social capital research and network development research can also be classified into two further classes. Those two classes are describing the level of analysis in the study and are named interpersonal level research and inter-organizational level research. Interpersonal level research concerns research where the actors in the network are people in the organization. Inter-organizational level research concerns research where the actors are organizations or organizations' representatives (Carpenter et al., 2012).

The relationship between network and structure

A structure can be referred to as a network of the relationship that carries information about a system's adaptive history (Sandaker et al., 2019). Structure, function, and process are three elements that are considered when predicting future occurrences of behavior when using system theory. In this case, structures are components, and their relationships function is the outcomes that are produced, and the process is the sequence of activities and knowledge that is needed to get the outcomes. It is also worth mentioning the context, which is the environment where the unique system takes place (Sandaker et al., 2019). A system is a whole consisting of different parts which are tied together. If it is a change in one part of the system this will influence other parts in the system. Because of this kind of structure in the system, the whole is more than just the sum of the single parts (Schiefloe, 2015).

System theory can also be linked to behavior analysis (BA). A sub-discipline of BA is behavioral system analysis, which is a combination of principles from BA and system theory. The behavioral system analysis focuses on maintaining and improving processes, interactions in systems, and improving persons and organizations' behavior (Brethower, 2004). Sandaker et al. (2019) claim that social structure matters when it is a desire to explain behavior. The relationship between network and structure can therefore be important if it is a desire to get information about and explain the behavior within the network. The structure can provide an understanding of how the components of a whole stand about each other. Important elements of the social structure include division of labor, hierarchy, and distribution of power (Schiefloe, 2015).

The relationship between network analysis and behavior analysis

In SNA, it is focus on emergent phenomena which have taken place in the past, before the phenomena are observed. Applied BA is the opposite, where strong control and focus on prediction of behavior are characteristics (Bento et al., 2020). As mentioned earlier, social

structure matters when it is a desire to explain behavior. Because of that, it will be natural to assume that BA and SNA can enrich each other. New studies also promote the importance of social reinforcement in situations where behavior and complex information spreads (Bento et al., 2020). Within the field SNA, social reinforcement is defined as "the situation in which individual requires multiple prompts from neighbors before adopting an opinion or behavior" (Zheng et al., 2013, p. 2). In BA, social reinforcement is defined as "an increase in the likelihood of future behavior as a function of the interaction with other individuals or groups" (Bento et al., 2020, p. 68). Examples of situations that lead to social reinforcement are physical contact, proximity, attention, and praise (Cooper et al., 2014). Attention from coworkers can therefore work as a social reinforcers in the workplace, where the attention coworkers give can make space for conversations and cooperation that would not have taken place if it was a lack of attention. Social reinforcement increases the probability of upcoming behavior. This can happen in situations where individuals require multiple prompts or responses from contacts in the network before they can evolve an opinion or behavior (Bento et al., 2020). Adoption and spread of behavior within the network involve normative and informational signals originating from social reinforcement. Social reinforcers can help the network to maintain the social and cultural practice and desired behavior because of positive consequences which are delivered by actors within the network (Bento et al., 2020).

Complexity theory

A system can be defined as complex when strong interactions among its elements take place and lead to the probability for many variations of later events within the system (Axelrod & Cohen, 2008). To understand, change, or convey a culture in an organization, which is a complex system, network analysis can be used as a tool (Bento et al., 2020). When we talk about agents in a system, and those agents aim to adapt, the term complex adaptive systems can be used (Axelrod & Cohen, 2008). All the agents can have their strategies of how

to act within the system, and all the agents are important for the context. This makes it hard for agents to predict the consequences of the actions, because the context will be constantly changing (Axelrod & Cohen, 2008). The goal in a complex system can be to always use the knowledge of complexity to improve. This means that it is better to try to deal with complexity and take advantage of it, instead of fighting against the system (Axelrod & Cohen, 2008).

This study is conducted in a health organization, which previously mentioned can be referred to as a complex system. Outcomes in a complex system can be difficult to predict, and there will therefore be several variables that should be considered and investigated. Complexity does not consist of many simple parts, where changes can be easily controlled. Complexity deals with systems that contain different parts that interact with each other in different ways, and in different ways affect the possibilities for later events. Studies of complex systems can help to provide insight into which points can be utilized as well as identify key trade-offs in the complex system (Axelrod & Cohen, 2008)

Scoping review: previous applications of network analysis in the health sector

Scope reviews are a relatively new approach to use, but have become increasingly more popular during the last decades (Pham et al., 2014). This approach is used to map already existing literature within a field of interest. Scope reviews of the literature are often used to examine the scope and amount of research activity within an area before a study. It can also be used to conduct complete reviews, summarize and disseminate previous results, as well as identify shortcomings and weaknesses in existing research (Pham et al., 2014). Arksey and O'Malley (2005) suggest four usual reasons for why a scoping review might be completed. The first reason is to examine the scope, range, and the grade of the research activity. The second reason is to assess the value for a later complete systematic review. The third reason is to share and summarize previous research results. The fourth reason is to

identify weaknesses and the gaps in literature that already exists. The scoping review in this study aims to obtain previous empirical data that uses network analysis in studies of health organizations, to investigate which methods and variables that have been examined in previous studies, and whether any of this can be transferred to this study.

Identifying relevant studies

To collect previous empirical articles, a literature search was conducted from the following databases: Academic Ultimate Search and Business Source Elite. The research terms "network analysis" and "health services" were used in both databases, and this constituted the following search string: "Network analysis" AND "health services". Both terms had to be part of the abstract in the articles. The search was conducted in January 2021 and was restricted to full-text articles and scholarly (peer-reviewed) journals in English. 2011 was used as a starting point of the publication period to get the articles from the last 10 years. This is to narrow the search, as well as obtain new and current empirical data.

Study selection and exclusion criteria

After the restrictions were added, the search gave access to 251 abstracts. All those abstracts were screened. Most of the studies in this phase were eliminated under the following exclusion criteria:

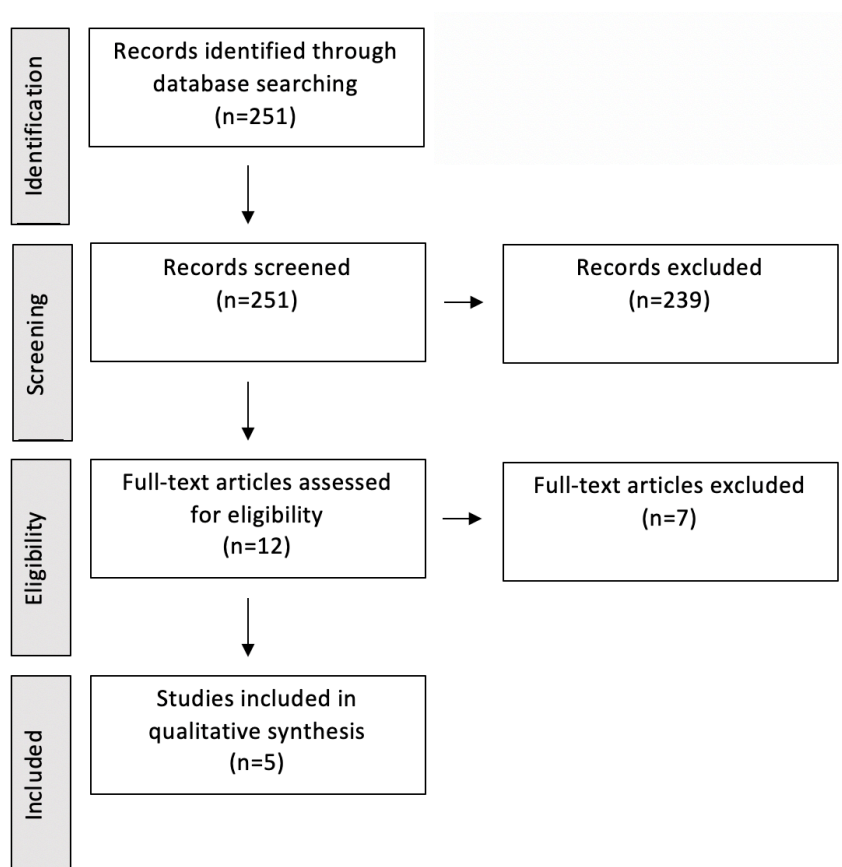
- Articles that did not focus on healthcare organizations
- Articles that did not have an organizational perspective
- Articles that focused on economic factors
- Articles that studied social media platforms
- Articles that focused on specific and limited health cases which were not relevant to answer the research question

After all the exclusion criteria were considered, the number of full-text articles for eligibility went down to twelve. All twelve articles were read, and after this phase, seven

articles were excluded. Two of the articles were excluded because they were review articles, and five were excluded because their focus was economic circumstances, which had not been detected in the initial screening. Thus, five articles were assessed as eligibility for qualitative analysis. Figure 1 shows a flowchart that depicts the different search phases and selection process. The flowchart is inspired by the flowchart from PRISMA (n.d).

Figure 1

Flowchart from scope review



Findings

Table 1 provides an overview of findings from the articles in the literature search. All articles deal with the health sector and have SNA as part of the method. The table is giving a short overview of the author/year, participants, methods, purposes, variables, and results in the five studies.

Table 1*Overview of findings*

Authors/Year	Participants	Method	Purpose	Variables	Results
Kemper-Koebrugge et al. (2016)	Not defined	Quantitative survey, semi-structured interview, SNA using UCINet	This study aimed to describe and explore care organizations, and their potential for effective collaboration.	Which groups/ organizations are most important, how information is given and received, how finances and activities are organized together, how the groups refer to each other	There is a need for networking across health organizations. Navigation to resources between health organizations is a relevant topic.
Mundt and Zakletskaia (2019)	Doctors, Clinical staff. (N=143)	Structured interview, work environment survey, SNA using UCINet	The degree to which professional communication networks contribute to job satisfaction among health personnel in the primary health service.	Face-to-face communication, digital communication, amount of responsibility, freedom of work, physical working conditions, opportunity to use one's abilities, income, recognition, working hours	The average job satisfaction was 5.8. Participants at the core of the network had significantly higher job satisfaction than those who were in the periphery. Female doctors had less overall job satisfaction than other clinic employees. Interventions aimed at communication networks can improve job satisfaction.
Sibbald et al. (2013)	Nurses, Doctors, Users, Allied health personnel. (N=28)	Questionnaire, SNA using UCINet, semi-structured interviews analyzed using NVivo8	This study examined how clinically-oriented research knowledge is exchanged through interdisciplinary primary health care teams, and how this knowledge influences clinical decisions.	Who you give research information and new knowledge to, who you get or apply for research information and new knowledge from, the participants' role about giving and seeking knowledge.	Acquisition of research knowledge was perceived as a shared responsibility among the participants. concerning the application of knowledge inpatient treatment, this was the responsibility of team leaders and chief physicians. Information sharing in interdisciplinary teams is a complex and multifaceted process.
Smit et al. (2021)	GPs, Nurses, Social workers, Pharmacists, Physiotherapists. (N=55)	Questionnaire and SNA using UCINet	Implementation of an interdisciplinary collaboration program. Investigate the potential for increasing interprofessional collaboration between primary health care professionals	Calculate the number, reciprocity, value, and diversity of contacts between professionals	The implementation was successful, and the knowledge and skills that emerged were applicable. This helped to increase interprofessional collaboration.
Spitzer-Shohat et al. (2018)	Doctors, Nurses, Administration, Pharmacists, Coordinator, Medical/nursing/administrative directors, Coordinators. (N=107)	Semi-structured in-depth interviews, self-evaluating questionnaires, SNA using UCINet	The study examined how organizational structure and social relations could be associated with their perceptions of effectiveness in leading and implementing interventions to reduce undesirable conditions to improve health care services.	Team effectiveness (access to information), team skills (ability to manage change), participation (unity), support (motivation and resources)	Strong internal clinical ties and management support are key factors in a high assessment of team effectiveness. Understanding the interplay between the organizational network, information flow and team performance are important for organizations to reduce disparities and to achieve success.

Research methods. All the studies used a mix of various methods, where all five studies used SNA as part of their method (Kemper-Koebrugge et al., 2016; Mundt & Zakletskaia, 2019; Sibbald et al., 2013; Smit et al., 2021; Spitzer-Shohat et al., 2018). To visualize and document network characteristics, all the five studies used the SNA software UCINet, which is a comprehensive software for the analysis of social network data (Borgatti et al., 2002).

Three studies also used semi-structured interviews as their method (Kemper-Koebrugge et al., 2016; Sibbald et al., 2013; Spitzer-Shohat et al., 2018) and one study used a structured interview as a part of the method (Mundt & Zakletskaia, 2019). Three of the studies used questioners to collect data for their studies (Sibbald et al., 2013; Smit et al., 2021; Spitzer-Shohat et al., 2018). And one study did a survey where questioners and interviews were conducted to get data about the work environment (Mundt & Zakletskaia, 2019).

Purpose and variables. All the findings in the analysis deal with communication within the health sector, but the form and purpose of communication in the studies vary. Three of the studies focus on communication concerning collaboration (Kemper-Koebrugge et al., 2016; Smit et al., 2021; Spitzer-Shohat et al., 2018). One study focused on professional communication to who it communicates with and what relationship there is between those who communicate (Mundt & Zakletskaia, 2019). And another study focused on communication related to how clinically-oriented research knowledge is communicated through interdisciplinary primary health care teams (Sibbald et al., 2013).

The study by Kemper-Koebrugge et al. (2016) explored the potential for effective collaboration in care organizations. About the collaboration, they categorize collaboration into three categories. The first category deals with navigation to resources, which includes how the communication between individuals and organizations works. The second category deals with negotiations, which concerns the planning and coordination of activities and tasks. The

final category deals with the transmission, which addresses how ideas and practices spread in organizations. To examine if it is an effective collaboration in the organizations, based on the three categories for communication, they handed out questionnaires that aimed to give insight into which variables that could lead to effective collaboration. They used the data from the questionnaire to map and characterize the organization by using SNA. The network mapped the following variables: the number of network ties, one-step reached organizations, two-step reached organizations, reciprocity, density, and centralization.

In the study by Mundt and Zakletskaia (2019), they explored the extent to which professional communication networks could lead to job satisfaction among healthcare professionals in primary care clinics. They measured the overall job satisfaction and job satisfaction related to nine aspects linked to the work. The nine aspects examined whether the following variables could have an impact on job satisfaction; the amount of responsibility, freedom of working methods, amount of verity in work, colleagues and fellow workers, physical working condition, opportunity to use abilities, income, recognition of work, and working hours. They also investigated the communication flow in the organization, and then how the communication was face-to-face or electronically. To measure this, they asked the participants to enter how often they communicate face-to-face and electronically during the last six months. They used SNA to calculate the core-periphery to identify if the participants were in a dense cohesive core or scattered in the organization.

Sibbald et al. (2013) investigated how clinical research knowledge is exchanged through interdisciplinary primary health care teams, and how this knowledge influences clinical decisions. How clinical research knowledge is exchanged represents two types of information relationships, giving and seeking research knowledge. Questions that were asked to investigate the exchange of research were; to who you typically give research information/knowledge and to who you typically seek research information/knowledge from.

They used SNA to investigate the team density and to see if the density influenced the flow of research information/knowledge.

In the study by Smit et al. (2021), they implemented an interdisciplinary collaboration program, the purpose of which was to investigate the potential for increasing interprofessional collaboration between primary health care professionals. A questionnaire was used to measure if the participants had a learning experience and if they had any acquisition of knowledge and skills after the implantation of the program. 5,5 months after implementing, a network survey among the participant attending the program was handed out. The network was determined by measuring variables which concern the number of contacts, reciprocity, and the value and diversity of contacts.

The last study, by Spitzer-Shohat et al. (2018), examined how teams work together and how structure and social relationships can be associated with their perception of effectiveness in leading and implementing interventions to reduce adverse conditions to improve healthcare as is delivered. The questionnaire they used to investigate if the structure and social relationship could be associated with team effectiveness were split into four domains. The four domains consisted of; team effectiveness, team skills, participation, and support. In the domain for team effectiveness, variables connected to access to information were investigated. In the domain for team skills, they investigated variables connected to the ability to handle change. In the domain for participation, they investigated variables connected to unity. In the last domain support, they investigated variables connected to motivation and resources. They used SNA to measure the density, the type of relationships, group betweenness, and centrality.

Variables concerning Carpenter et al. (2012). About the classification form for network research in an organizational context by Carpenter et al. (2012), all studies from the scoping review will be included in the category for network development research at the

interpersonal level. All five studies aim to examine variables that map patterns and factors that determine the course of formation and development of networks created by the individual members. In network development research, predictors illustrate the predecessors and the reasons for networking and change in organizations (Carpenter et al., 2012). By studying the structural properties of the network, network structure constructions can indicate available possibilities. The mapping of the network can also help to visualize the presence and absence of social ties in the actors' networks. The patterns that emerge can be sources of different attributes for network structure. Because of this, network ownership can be an important indicator of the opportunities inherent in the network (Carpenter et al., 2012).

Results. The results show that the use of SNA can be a helpful method to use when studying relations and communication in healthcare organizations.

The study by Kemper-Koebrugge et al. (2016) shows that it is a need for more research and that a solid network and navigation to resources between health organizations are important topics that are relevant for future studies.

In the study by Mundt and Zakletskaia (2019), the results showed that people in the core of the network have significantly higher job satisfaction than those who are in the periphery of the network. The results also showed that interventions for improving communication can lead to higher job satisfaction. This visualizes that solid networks with good communication can be important for workplace satisfaction.

The results in the study by Sibbald et al. (2013) show that employees consider the acquisition of research knowledge as a shared responsibility. When it came to using research knowledge in the treatment and presence of patients, the participants in the study believed that these were tasks that belonged to team leaders and chief physicians. Information sharing can therefore be considered complex, and there are several ideas about the responsibilities associated with the acquisition and application of research knowledge.

In Smit et al. (2021) the results showed that the implementation of an interdisciplinary collaboration program was successful. The purpose of the implementation was to investigate if there were a potential for increasing inter-professional collaboration between the health care professionals.

In the study by Spitzer-Shohat et al. (2018), the results showed that solid internal ties and support from management are important factors for team efficiency. The results also show that it is important to understand the interplay between the organization's network, the flow of information, and team effectiveness to reduce differences within the organization, and for the organization to be able to achieve success.

Summary

To study the communication flow in a health organization, SNA, knowledge about complexity theory, and previous empirical data can be helpful tools. SNA can be used to determine characteristics that are associated with the connections in the network (Otte & Rousseau, 2002). As seen in the scoping review, SNA contributed with mapping characteristics and participant's role in the networks. The results from the scoping review showed that SNA is a good method to use to determine the communication flow in a complex organization.

As earlier mentioned, social networks can be described as a set of relatively lasting, informal connections between people (Schiefloe, 2015). A complex system, like a health organization, will always be subject to change. Different network structures can either facilitate or restrain the emergence of change (Centola, 2018). Employees leave the organization, new employees are hired, and there may be changes related to the user group in the organization as well. Health organizations often have many partners, where changes can occur, such as the replacement of key personnel in the partner organization. In a health organization, not all connections will be equally long-lasting and changes will occur. There

are some factors that make health organizations complex. It can therefore be assumed that it is important to quickly establish good procedures for establishing good communication with new actors in the network, to optimize the collaboration and communication in the organization. A good basic co-operation between all actors in the organization can therefore be assumed to be important for changes to take place, without the changes affecting communication and co-operation negatively.

SNA is focusing on the past, and which phenomena and events have already taken place (Bento et al., 2020). In the study on complex systems, it is of interest to study the interactions among elements that take place and later leads to a variation of later events within the system (Axelrod & Cohen, 2008). And in BA it is desired to gain strong control and focus on the prediction of behavior and characteristics which take place now (Bento et al., 2020). These three fields can be assumed to enrich each other, where the knowledge from SNA and the study of complex systems can help to predict behavior in BA.

The scoping review showed that SNA is a useful method to use when studying interactions and communication within healthcare organizations. Other methods were also used to get a deeper insight into the five studies' research questions. There was a variation of several variables that were examined in the different studies, and SNA was used to map and investigate different factors. The density and the centrality was, among other things, something that several of the studies examined (Kemper-Koebrugge et al., 2016; Sibbald et al., 2013; Spitzer-Shohat et al., 2018).

The relation between previous research and this study

SNA, complexity theory and elements from the scope review will be included further in the implementation and analysis in this study. SNA will be used as a tool to analyze data and visualize the connections between individuals in the networks to be studied. Complexity

theory will be used in the discussion of the results since the study is carried out in a health organization that is assumed to be complex.

The scoping review in this study aim to analyze previous empirical studies that uses network analysis in studies of health organizations. This is to investigate which methods and variables have been investigated in previous studies and whether any of this can be transferred to this study. Some elements from the scope review will be continued in this study, and inspiration will be drawn from the previously completed studies. Concerning the method, this study, like several of the studies in the scope review, will use questionnaires to collect network data, and qualitative semi-structured interviews to enrich the findings of the questionnaire, as well as obtain more thorough data about the social educators with medical competence in the organization. Like all the studies in the scope review, the software UCINet will be used as a tool in the analysis of network data.

Unlike all the studies from the scoping review, this study will have social educators with medical competence as participants. The social educators with medical competence will not only be part of the participants, but this study will also have an overall focus on this occupational group. On the basis that none of the studies from the scoping review examines or had participants who were social educators with medical competence as participants, it can be assumed that more studies of the social educators with medical competence are both important and necessary. This also means that there is no basis for comparing the role of social educators with medical competence in this study with the studies from the scoping review.

Concerning Carpenter et al. (2012), and the classes and levels network studies can be conducted at, then this paper will use network development research at an interpersonal level. The actors in the network will be employees in the organization, and the purpose is to investigate the patterns and factors of formation and the evolution of network formed by the

employees in the organization. It will be of interest to investigate if there are several networks within the organization and if the different networks are connected to certain situations.

Method

In this study, an experimental design with mixed methods was used to answer the research question. First, previous empirical data were collected through a scoping review, as already described. After this, questionnaires were handed out to collect data about the networks in the organization. Then, qualitative semi-structured interviews were conducted to highlight the answers from the questionnaire and get a deeper insight into the role social educators with medical competence have for the communication flow (Tjora, 2017). About the communication flow, it was desirable to gain an insight into how communication in the organization takes place, with an overall focus on the social educators with medical competencies role. The questionnaire was completed before the qualitative semi-structured interviews. This is to form a fundamental insight into the importance of social educators with medical competence for the flow of communication before they participated in the qualitative semi-structured interviews.

Network measures

When analyzing a social network as a system, it is relevant to map the various components, connections, activities, processes, and the entirety of the network, which involves forming an overview of the actors and relationships in the network. This can be done using various networking measures. Which network measures and representations are used depends on the purpose of the analysis (Schiefloe, 2015). Density, distance, accessibility, and centrality are some standard measures to analyze networks.

The density in an organization indicates how many actors in the network directly connected (Schiefloe, 2015). The network density can be measured in percent, with a network density range between 0-100%. A low value indicates a network with low density and few

relationships, while a high value indicates a high degree of density and an increased number of connections (Parise, 2007). If there are actors in the network without any relation to other actors, these actors are called isolates (Schiefloe, 2015).

The distance can be explained as the distance between two nodes or actors and then the number of nodes passed to reach another node (Schiefloe, 2015). And the availability in the network is an expression of the extent to which actors in the network can reach other actors. These may be relevant areas to investigate in studies that, for example, address how effectively information can be disseminated in a network (Schiefloe, 2015).

The centrality describes the actors' relative placements in the network and can be seen through the number of direct relationships between one actor and all other actors in the network. Actors with a high degree of centrality can be referred to as key actors in the network (Schiefloe, 2015). However, there may also be weaknesses related to key actors, one of the weaknesses is the risk of overloading information requests from the network (Parise, 2007).

Network measures for this study

In this study, the density and the centrality within the organization will be investigated. The purpose of examining the density in this study is to investigate how the collaboration in the organization is, and then in terms of how many relationships there are with other actors in the network. Concerning centrality, it will be investigated whether there are key actors who stand out in the network. This with a focus on the centrality of social educators with medical competence. Suppose it turns out that the social educators with medical competence are key actors in the network. In that case, it will be relevant to investigate in more detail how the collaboration with other actors is.

Setting and sample

The main inclusion criteria for this study were that it had to be a health organization with a minimum of one social educator with medical competence. An agreement was entered with a health organization to carry out the study in a relatively new care home for disabilities. The user group in the organization was young with a varying need for assistance. At the time the research was conducted, the organization consisted of 19 employees and ten users. Out of the 19 employees, seven were full-time employees, where three of those full-time employees were social educators with medical competence. The staff otherwise consisted of either environmental therapists or environmental workers on part-time contracts from 0-56% positions or night guards on 39% positions. The social educators with medical competence also functioned as care service managers for the users who received services in the organization.

Data collection

Data collection started at the end of April 2021 and was completed at the beginning of May 2021. All the 19 employees in the organization were invited to complete the self-developed questionnaire. In addition, for the qualitative interview, the three social educators with medical competence were invited to participate.

The invitation with information about the study and a consent form was handed out to all employees before the investigation could occur. It was made two different consent forms, one for the questionnaire and one for the qualitative interview. The information and consent form were given on paper to most of the employees. Some of the employees who were not scheduled to work or were away from work in the period where the data were collected got the consent form sent on their e-mail.

Data collection for the questionnaire

Before the participants got access to the questionnaire, it was tried out in a small pilot study. The participants who participated in the pilot were fellow students from the master program for behavioral science. The students in the pilot also had experience from working in healthcare organizations. After the pilot study, no changes were made since the participants showed a good understanding of the questions by their answers.

After the pilot was completed and all the consent forms of those who wanted to participate had been signed and returned, the employees received an invitation to the questionnaire. The invitation was sent to their e-mail address, which they stated when they signed the consent form. The questionnaire was answered digitally and sought information about four categories: (a) participant information and communication for daily work tasks, (b) professional communication of knowledge and questions, (c) communication in crisis situations, and (d) communication with relatives. For a more thorough description of the categories' function and purpose, see Table 2. Different types and number of relationships and interactions between employees could be identified by using the four categories. Based on this, the questionnaire could provide several various networks within the same organization with the same participants. Concerning crisis situations, the participants were informed that this involved unforeseen events. For example, illness/injury (for both users and staff) and unwanted incidents (i.e., acting out).

In total, the subjects had to answer nineteen questions, consisting of both free-text and multiple-choice assignments (see Appendix A). In the free-text questions, the participants were asked to state the names of colleagues they communicated with for the different situations. This data was obtained specifically for the analysis of the social networks in the organization. The multiple-choice questions received information about how often the actors interacted with social educators with medical competence, how often the actors experienced

different situations, and how often and how it is communicated with relatives of the users in the organization. The first part of the questionnaire also received information about the actors' role and identity in the organization, such as their job title, position percentage, and how long they have been employed. Participants were asked to answer the questions in the survey based on the last three months.

For the creating of the questionnaire, the research tool "Nettskjema" (webform) by the University of Oslo was used. Nettskjema is a secure solution for data collection via the internet (UIO, n.d.). All participants in the study were identified with numeric codes to keep their names and answers anonymous. The responses obtained from the survey were also transformed into numerical codes to process the answers in the software for data analysis. All the numeric codes for both participants and answers were put into tables in Excel.

Table 2*Overview of investigated categories in both SNA and interviews*

Category	Function	Purpose
Data collection questionnaires		
Participant information, and communication for daily work tasks	Obtaining general information about the participants (gender, position percentage, position title and length of employment), and the names of the actors the participants communicate with the most for carrying out daily tasks.	Create a perspective of who the participants are to categorize them. Get data about who the actors communicate with to carry out daily tasks, to be able to analyze the data in UCINet.
Professional communication of knowledge and questions	Obtain information about who the actors in the network communicate with in concerning professional conversations, or questions that are professionally related.	Get data on how often the actors communicate with social educators with medical competence, and how it is generally communicated in connection with professional communication. Get data about who the actors have professional communication with, to be able to analyze the data in UCINet.
Communication in crisis situations	Obtain information about who the actors turn to if they need assistance or have questions related to crisis situations.	Examine whether the actors have been in crisis situations, and possibly how often. Get data on who is being communicated within crisis situations to be able to analyze data in UCINet.
Communication with relatives	Obtain information about how often it communicates with relatives. This also examines how often the actors contact the relatives, and how often the relatives contact the actors.	Investigate how many, and how often it is communicated with relatives who are a group of external actors in the network.

Data collection from interviews

The social educator with medical competencies role and area of responsibility	Obtain information about the responsibilities of the social educators with medical competence in the organization, and what opinion the social educators with medical competence have of their role.	Get deeper information about what the role of the social educators with medical competence entails, which can be used to provide a more thorough description of their position in the network.
Communication with colleagues	Obtain information about how the social educators with medical competence communicate with each other, and how they communicate with colleagues who are not social educators with medical competence.	Investigate whether the social educators with medical competence make use of their colleagues' skills and strengths. Investigate the communication between the social educators with medical competence, and how they assist each other.
Communication with relatives	Obtain information about how and what the social educators with medical competence communicate with relatives	Investigate how much and how the social educators with medical competence and the relatives communicate.
Crisis situations	Obtain information about the social worker's role concerning crisis situations.	Investigate the centrality social educators with medical competence think they about handling crisis situations, and how they handle/would have handled this type of situation.
Challenges related to securing and processing information	Obtain information about the challenges the social educators with medical competence experience with securing and processing information from both internal and external actors.	Investigate what may be the cause of the possible challenges and whether challenges can be linked to communication in organizations.
Potential for improvement in the organization	Obtain information about what the social educators with medical competence think about the potential for improvement in the organization.	Try to find solutions to any challenges, as well as what measures can be taken to generally improve communication and operations in the organization.

Data collection for the qualitative interviews

For the qualitative interview, an interview guide was developed (see Appendix B). The interview guide was built upon the following categories: (a) the social educator with medical competencies role and area of responsibility, (b) communication with colleagues (c) communication with relatives, (d) crisis situations, (e) challenges related to securing and processing information, and (f) potential for improvement in the organization. See Table 2 for an overview of the investigated categories with their function and purpose. When the consent form was signed, and returned, dates for the interview were determined. The interviews started and ended at the beginning of May 2021 and were conducted in person. Due to Covid-19, meeting rooms were booked where a 2-meter distance could be maintained to follow restrictions for reasonable infection control.

All the questions were open-ended questions, where there was an opportunity for further discussion. Participants were also informed that they were free to decide if they wanted to answer the questions or not and that follow-up questions could arise. Before the interviews started, the researcher read the complete interview guide to the participants. This to prepare the participants for the questions that would be presented and make the opportunity to ask for elaboration if something was unclear or not understandable.

The interviews were recorded on a tape recorder to ensure everything that was said. After the interviews were done, the audio files were transcribed into text before the audio files were deleted. The interviews lasted 48, 24, and 32 minutes, which gave a total interview time of 106 minutes, and an average interview time of 34 minutes. It took two full days to transcribe from audio to text format.

Data analysis

To answer the research question, a questionnaire and qualitative semi-structured interviews were conducted.

Data analysis of questionnaires

Using SNA, structural relationships between individuals can be identified. The participants' response to three of the questions in the following categories provided a basis for identifying three different networks in the organization: a) network for communication of daily work tasks, b) network for professional communication of knowledge and questions, and c) network for communication in crisis situations. In the first category, the network for communication of daily work tasks, the following questions were asked to obtain SNA data: "Who do you communicate with the most to complete daily work tasks?". In the second category, which referred to professional communication of knowledge and questions, the following question was asked: "Who do you most often ask for help and advice?". In the last category for network identification, which referred to communication in crisis situations, the following question were asked: "Who do you contact/would contact in crisis situations?". The answers to these three questions were obtained to visualize the networks and to identify the density and centrality within the networks in the three different situations.

To analyze the data that emerged in the questionnaires, the answers, which were converted into numerical codes in Excel, were transferred to the software UCINet (Borgatti et al., 2002). In this study, UCINet version 6 was used, and it was used to get information about the density and centrality from the data to make the visualizations of the networks.

Data analysis of qualitative semi-structured interviews

After the semi-structured interviews were transcribed verbatim, the interviews were analyzed using thematic analysis. In the thematic analysis, statements that deal with key topics and relevant information were marked, also referred to as coded (Svartdal, 2015). All markings were thoroughly reviewed to detect patterns and trends in the answers given in the interviews. The transcription was done verbatim to obtain accurate data within significant threats to the accuracy of the transcript. If actors were mentioned in the transcript, they were

cited as the participant number, which was distributed after the consent form to participate in the study had been obtained. If actors who were not participants in the study were cited, these were also anonymized. For example, the relatives' names were written as only "relatives" if names were mentioned. A thorough analysis was conducted to identify findings and topics relevant to the study's areas of interest and the categories investigated to answer the research question.

Limitations related to the method

This study collected data from only one health organization, and there is no basis for comparison and generalization. This is a limitation in this study, but the data that emerges is still necessary because this study may open up opportunities for further discussion and research on the topic.

The absence of observations is also a limitation and weakness related to the method in the study. Through observations, important knowledge about the communication flow could have been captured.

In questionnaires and interviews, participants are also not guaranteed to answer honestly. Dishonest answers can have their origins in the participants answering what they think is desirable to be answered. This relates to both the researcher's purpose and what they think the researcher wants to get from the data, and what the participants think are beneficial answers for the organization and their colleagues.

Ethical approval

Approval had to be applied from the Norwegian Center for Research Data (NSD) before data could be obtained for the study. A data management plan (DMP) was prepared on NSD's web pages. The DMP describes, among other things, the following areas: who is responsible for the data during and after the project, how to secure, organize and document the data, how large and what type of data set is to be used, the data's ethical and legal

compatibility, storage and securing of data, further plan preservation and availability of data after the project is completed (NSD, n.d). The consent forms that were handed out to the participants before the data were collected were prepared using NSD's template for consent forms. When collecting information about individuals, there is a duty to provide information to them as well (NSD, n.d.). NSD approved to implementation of the study on the 12th of April 2021. See Appendix C for the approval which was given.

Results

The number of participants who participated in the questionnaire ended up with seventeen (one leader, three social educators with medical competence, three full-time environmental therapists, seven part-time environmental therapists/workers, three night guards), which corresponded to a response rate of 89%. The three social educators with medical competence also participated in the qualitative semi-structured interviews. Among the participants who participated in the study, there were eleven females and six males. See Table 2 for an overview of invited and participating participants for both the questionnaire and the qualitative semi-structured interview. The overview also states the participants' job titles and employment times in the organization. Nineteen participants were originally invited to participate. One of the invited participants never responded to the invitation, even when a reminder was given. Another participant answered the invitation and wanted to be part of the study but never answered the questionnaire, although several reminders were given. Neither of those two participants was mentioned as key actors in the network.

Table 3

Overview of invited participants with the job title and employment time

	Questionnaire		Semi-structured interview	
	n	(%)	n	(%)
Total invited employees	19		3	
Participated employees	17	(89%)	3	(100%)
Role profession				
Leader	1	(5%)		
Social educators with medical competence	3	(16%)	3	(100%)
Full-time environmental therapists	3	(16%)		
Part-time environmental therapists/workers	7	(36%)		
Night guards	3	(16%)		
Year employed				
<1	4	(21%)		
1-2	4	(21%)	1	(33%)
>2	9	(47%)	2	(67%)

Not all the data from the two data collections will be included in the results. But all data that is relevant to shed light on the research question will appear and be presented. Therefore, the results will address the following overarching category: the social educators with medical competencies role for the communication flow. The different under categories from the questionnaire and the interviews will be included in this overarching category, Table 2.

The flow of communication

Based on the results, the key actors concerning communication may vary in different situations. But the social educators with medical competence seem to be generally centered concerning the communication flow in the organization where the study was conducted.

Network measures

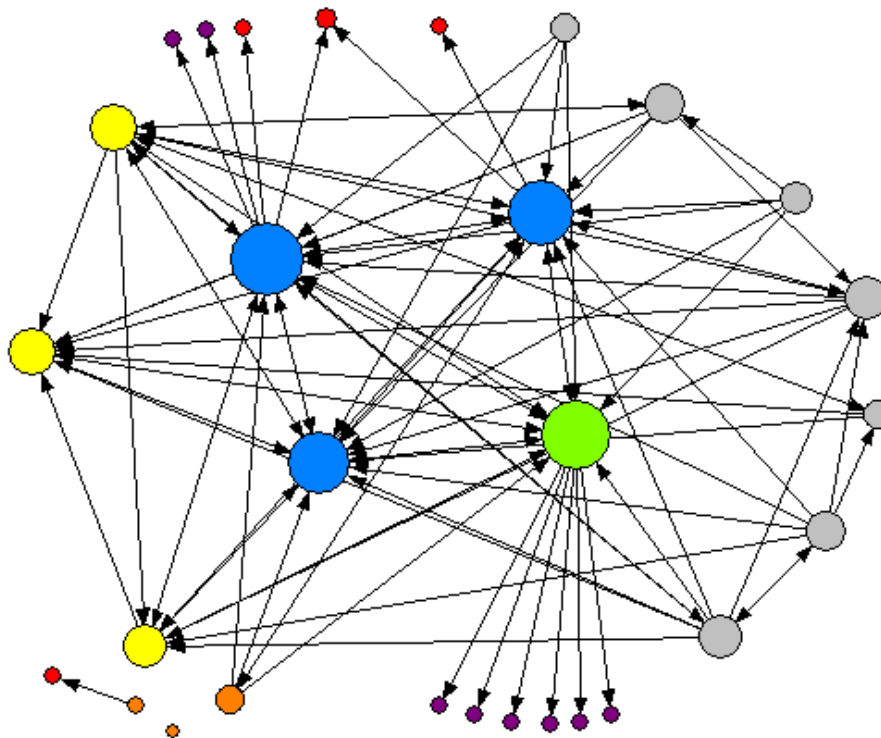
The network measures density and centrality were identified in the following three categories: communication for daily work tasks, communication of knowledge and questions, and communication in crisis situations

Communication for daily work tasks. In the first category examined, communication for daily tasks gave a density score of 12.1%. This corresponds to a relatively low score, where there is a low degree of density in the network for communication of daily chores. The number of ties in the network was 98, but the number of direct contacts was low, which resulted in a low density. This can be seen in Figure 2. Where there are ties between two nodes, and arrows pointing to both nodes, there is direct contact between the two actors in the network. In most cases, there are ties in the network without direct contact, where only one of the two actors with contact has mentioned that they communicate with each other to implement daily tasks. One of the night guards has no connections to other actors in the network and is isolated from the network.

Figure 2 also helps to visualize the actors' centrality within the network. The size of the circles indicates the centrality of the actors in the network. Larger circles describe central actors, while smaller circles indicate less central actors. The blue circles visualize the social educators with medical competence, who are also among the most central along with the green circle, which indicates the organization's leader. Based on the network visualizations, it may seem that the centrality of the rest of the employees is almost even concerning to the communication for daily tasks. Full-time employees may seem to be a little more central than part-time employees, while night guards are the ones that stand out as least central. The red and purple circles indicate external actors and relatives.

Figure 2

Visualizing of the connections and centrality for communication for daily work tasks



Note: Meaning of the colors: green = leader, blue = social educators with medical competence, yellow = full-time environmental therapists, grey = part-time environmental therapists/workers, orange = night guards, purple = external actors, red = relatives

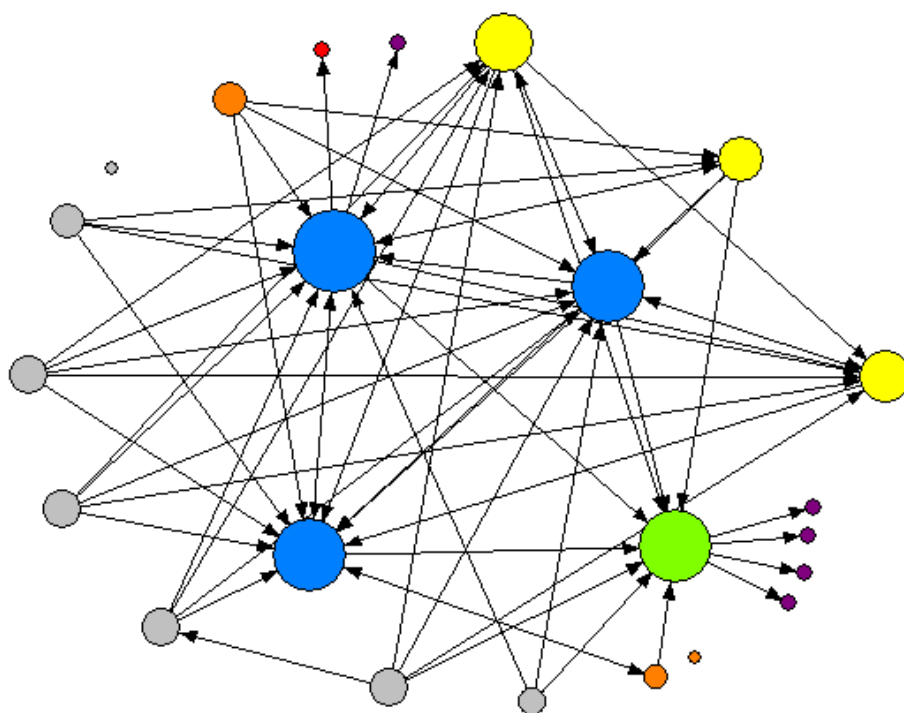
Communication of knowledge and questions. The density score in the following category, communication of professional knowledge and questions, was 12,1%, which is the same as in the category for communication for carrying out daily work tasks. In contrast, the number of ties here was 61. But the number of nodes with direct contact with each other was the same in the two categories. In this network, there are two isolators without connection to other nodes, a part-time employee and a night guard. The relationships between the actors can be seen in Figure 3.

Concerning the centrality in this category, the social educators with medical competence functioned as key actors here as well, together with the leader, which also has a

central position in this network. Full-time employees also appear to be more prominent in this category, while part-time employees may appear to be somewhat less central. The night guard position is not very central in this category either. The actors' centrality can also be seen in Figure 3.

Figure 3

Visualizing of the connections and centrality for professional communication of knowledge and questions



Note: Meaning of the colors: green = leader, blue = social educators with medical competence, yellow = full-time environmental therapists, grey = part-time environmental therapists/workers, orange = night guards, purple = external actors, red = relatives

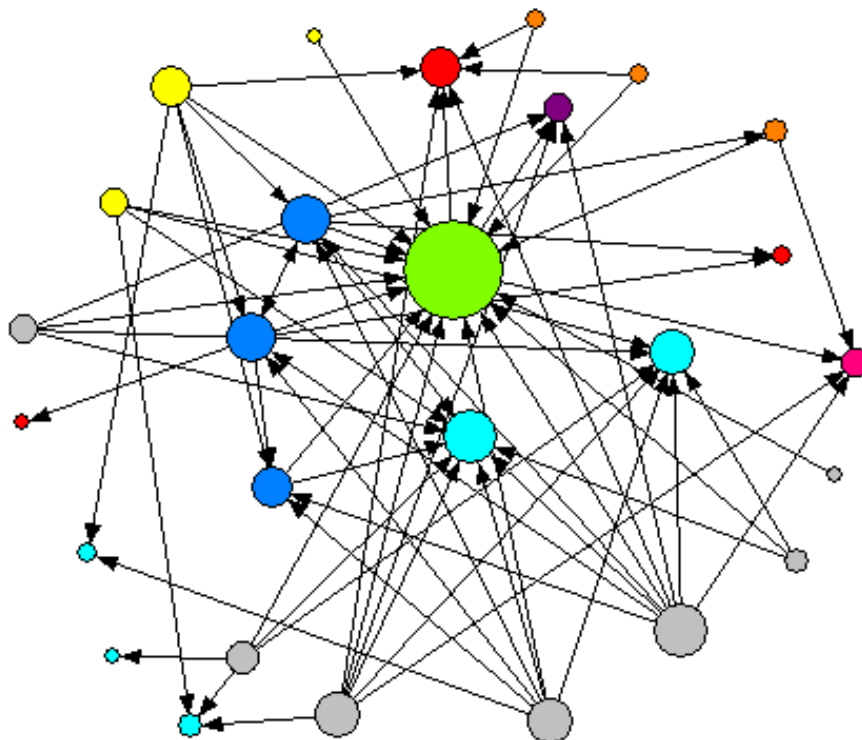
Communication in crisis situations. Communication in crisis situations was the last category analyzed by using UCINET. The density score was 9.7% in this category, which corresponds to an even lower density than in the other two categories. The number of ties between the actors in this network was 68. A visualization of the connections between the

actors can be seen in Figure 4. There are no isolates in this network as all actors have mentioned that they communicate with at least one other actor.

Figure 4 also visualizes the centrality of the actors in the network. In this category, the leader is far more central than the other actors. Most of the actors mention the leader as the one they communicate with/would have communicated within crisis situations. In this category, the external actors (health and emergency services and relatives) are just as central as the social educators with medical competence.

Figure 4

Visualizing of the connections and centrality for communication in crisis situations



Note: Meaning of the colors: green = leader, blue = social educators with medical competence, yellow = full-time environmental therapists, grey = part-time environmental therapists/workers, orange = night guards, purple = external actors, red = relatives, pink = undefined intern workers, turquoise = emergency or health agencies.

Results from the multiple-choice questions

The results that appear in the multiple-choice questions indicated how often the participants communicate with other actors and how often the participants experience different situations. The multiple-choice questions were presented in the questionnaire. The first category in the questionnaire obtained only participant information that has already submitted.

Professional communication of knowledge and questions. Five multiple-choice questions were presented to the participants in the category for professional communication of knowledge and questions. Table 3 gives an overview of the questions and answers.

Question 1, "How often do you ask colleagues for help/advice/guidance?" indicates that the communication, in general, seems to be good between the employees. Almost all the participants answered that they have weekly or daily communication with their colleagues, asking for help, advice, or guidance. Only two part-time employees and one night guard answered monthly or rarer contact with other colleagues.

Question 2, "How often do you contact social educators with medical competence for professional questions and conversations?" gave a result where 11 out of 17 participants said they had daily or weekly contact with social educators with medical competence for professional questions and conversations. Four part-time employees, said they had monthly contact, and two night guards said they had rarer contact with the social educators with medical competence.

Question 3, "How often are you included in discussions/mapping of professional decisions?". On this question, the leader, two social educators with medical competence, two full-time employees, and one part-time employee said that they were included in the discussion or mapping of professional decisions weekly or daily. Most of the employees, as many as eight participants, answered that they were included in discussions or mapping of

professional decisions monthly. And three participants responded rarer or never on the question.

Questions 4 and 5 investigated how it is communicated with colleagues in the organization. Question 4 examines how often professional communication takes place face-to-face, while question 5 examined how often professional communication takes place digitally. Most of the participants answer that they have professional conversations face-to-face, as opposed to digital. Eleven participants responded that they had professional face-to-face conversations weekly or daily, five participants answered monthly, and only one participant answered rarer. About digital communication of professional conversations, four participants answered weekly, one participant responded monthly, while the remaining 12 responded rarer or never.

Table 3

Answers from multiple-choice questions from category 2 in the questionnaire: professional communication of knowledge and questions

	Leader		Social educators with medical competence		Full-time environmental therapists		Part-time environmental therapists/workers		Night guards	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Total participated	1	(100%)	3	(100%)	3	(100%)	7	(100%)	3	(100%)
Question 1										
Daily					1	(33%)				
Weekly	1	(100%)	3	(100%)	2	(67%)	5	(71%)	2	(67%)
Monthly							2	(29%)		
Rarer									1	(33%)
Never										
Question 2										
Daily			1	(33%)	1	(33%)				
Weekly	1	(100%)	2	(67%)	2	(67%)	3	(43%)	1	(33%)
Monthly							4	(57%)		
Rarer									2	(67%)
Never										
Question 3										
Daily					1	(33%)				
Weekly	1	(100%)	2	(67%)	1	(33%)	1	(14%)		
Monthly			1	(33%)	1	(33%)	4	(57%)	2	(67%)
Rarer							1	(14%)	1	(33%)
Never							1	(14%)		
Question 4										
Daily			1	(33%)	1	(33%)				
Weekly	1	(100%)	2	(67%)	1	(33%)	4	(57%)	1	(33%)
Monthly					1	(33%)	3	(43%)	1	(33%)
Rarer									1	(33%)
Never										
Question 5										
Daily										
Weekly	1	(100%)	1	(33%)			1	(14%)	1	(33%)
Monthly			1	(33%)						
Rarer			1	(33%)	1	(33%)	3	(43%)	1	(33%)
Never					2	(67%)	3	(43%)	1	(33%)

Note: Question 1: "How often do you ask colleagues for help/advice/guidance?". Question 2:

"How often do you contact social educators with medical competence for professional questions and conversations?". Question 3: "How often are you included in

discussions/mapping of professional decisions?". Question 4: "How often do you have

professional face-to-face conversations with colleagues?". Question 5: "How often do you

have professional conversations digitally with a colleague/colleagues?".

Communication in crisis situations. In the category for communication in crisis situations, two multiple-choice questions were presented to the participants. See Table 4 for an overview of questions and answers. Based on the answers to the questions, it seems like crisis situations rarely occur in the organization. Only one participant had experienced a crisis situation during the last three months. The rest of the participants answered that they had experienced a crisis situation rarer or never. Three out of 17 participants responded that they had a debrief after the crisis situation they had experienced.

Table 4

Answers from multiple-choice questions from category 3 in the questionnaire: communication in crisis situations

	Leader		Social educators with medical competence		Full-time environmental therapists		Part-time environmental therapists/workers		Night guards	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Total participated	1	(100%)	3	(100%)	3	(100%)	7	(100%)	3	(100%)
Question 6										
Daily										
Weekly										
Monthly					1	(33%)				
Rarer	1	(100%)	2	(67%)	1	(33%)	1	(14%)	1	(33%)
Never			1	(33%)	1	(33%)	6	(86%)	2	(67%)
Question 7										
Yes	1	(100%)			2	(67%)			1	(33%)
No			3	(100%)	1	(33%)	7	(100%)	2	(67%)

Note: Question 6: "How often have you been in crisis situations where you have had to seek assistance?". Question 7: "If you have been in a crisis situations, has there been a professional conversation about the situation afterward?".

Communication with relatives. In the category "communication with relatives", three multiple-choice questions were given. See Table 5 for an overview of questions and answers. On question 8, " How often do you communicate with relatives?" the leader, the social educators with medical competence, and the full-time environmental therapist

answered that they had weekly or daily contact with relatives. The Part-time employees had less contact, either weekly, monthly or rarer. And all the night guards had weekly contact with relatives.

On question 9, "Have you ever contacted relatives to map/handle a situation?", only the leader, one social educator with medical competence, and one full-time environmental therapist answered weekly. Ten of the participants responded monthly, and four answered rarer or never. And on question 10, "Have relatives ever contacted you directly for professional assessments/decisions?", most of the participants responded monthly, rarer, or never. Only one participant answered weekly.

Table 5

Answers from multiple-choice questions from category 4 in the questionnaire: communication with relatives

	Leader		Social educators with medical competence		Full-time environmental therapists		Part-time environmental therapists/workers		Night guards	
	n	(%)	n	(%)	n	(%)	n	(%)	n	(%)
Total participated	1	(100%)	3	(100%)	3	(100%)	7	(100%)	3	(100%)
Question 8										
Daily			1	(33%)	1	(33%)				
Weekly	1	(100%)	2	(67%)	2	(67%)	4	(57%)	3	(100%)
Monthly							2	(29%)		
Rarer							1	(14%)		
Never										
Question 9										
Daily										
Weekly	1	(100%)	1	(33%)	1	(33%)				
Monthly			2	(67%)	2	(67%)	4	(57%)	2	(67%)
Rarer							2	(29%)	1	(33%)
Never							1	(14%)		
Question 10										
Daily										
Weekly			1	(33%)						
Monthly	1	(100%)	1	(33%)			1	(14%)		
Rarer			1	(33%)	3	(100%)	4	(57%)	1	(33%)
Never							2	(29%)	2	(67%)

Note: Question 8: "How often do you communicate with relatives?". Question 9: "Have you ever contacted relatives to map/handle a situation?". Question 10: "Have relatives ever contacted you directly for professional assessments/decisions?".

Results from the semi-structured interviews

The answers from the interviews help to provide a deeper insight and more detailed answers around the key topics in this study. A summary of the data obtained in the semi-structured interview can be seen in Table 6.

Table 6*Summary of data from the qualitative semi-structured interview*

Main theme	Sub-themes	Question number	Main findings
Identification of the social educators with medical competencies role and area of responsibility	<ul style="list-style-type: none"> - Responsibilities outside the social worker with medical competencies role - Perception of own role for communication flow - Care service managers/ primary contact 	1-4	<ul style="list-style-type: none"> - Care service managers for 3-4 users each, eventually 4 users per social educator with medical competence - The care service manager's role involves: making action plans, estimation of time on tasks, communication with relatives and partners, follow-up, responsibility for disseminating information and messages related to users - Medical liability - Former safety representative, a union representative, responsible for cardiopulmonary resuscitation, responsibility for sign language, responsibility for assistive technology - Not fixed time for office and administrative work - Hard to say if they are central because of their role as a social educator with medical competence or if is because they all are care service managers for the users
Communication with colleagues	<ul style="list-style-type: none"> - Delegation of responsibility - Inclusion in professional conversations - Contributions from colleagues - Social educators with medical competencies role concerning providing help and guidance - Covid-19 and communication flow - Communication between social educators with medical competence 	5-12	<ul style="list-style-type: none"> - Good teamwork and communication - Still in the start-up phase, in the long run, more work can be delegated; establishment of secondary contacts - Requires time to provide training concerning tasks that can be delegated to colleagues - It can be challenging to delegate tasks and correct what is being done, it is important to formulate oneself clearly and separate work and friendship in such situations - Delegate responsibilities and tasks based on users 'needs and employees' competence - Feedback from colleagues is very useful - The use of colleagues' expertise leads to a strong and interdisciplinary collaboration - It is difficult to distinguish whether the social educators with medical competence are central due to their education or the role of care service managers for the users - Communication between social educators with medical competence is good, but few shifts together. Recently started with professional meetings once a month

Communication with the relatives	<ul style="list-style-type: none"> - Processing of information from relatives - Dissemination of information - Information from relatives and establishment of new measures 	13-17	<ul style="list-style-type: none"> - Communication with relatives is in most cases good. In cases where the communication has not been fully so good, this is largely based on accessibility and misunderstandings related to written formulations - Difficult to let go of control over own children - Information is passed on through notes in the duty book, record-keeping in Gerica, presentation of information at staff meetings, and meeting minutes. - Information from relatives is useful in establishing new measures. - Unwanted situations have taken place due to a lack of information from relatives
Crisis situations	<ul style="list-style-type: none"> - Own role in handling and processing crises 	18	<ul style="list-style-type: none"> - Very few major crisis situations, but if a crisis should arise when the social worker is at work or with one of the users of the social worker, then everyone would have assumed responsibility in the crisis - Central but not as central as the leader, but hopes and believes colleagues turn to the social educators with medical competence if there is a crisis and the leader is not available - In crises related to medicine, the role as a social worker with medical competence is central, and in relation to users, the role as a care service managers are central
Challenges	<ul style="list-style-type: none"> - Challenges related to processing and securing information 	19	<ul style="list-style-type: none"> - If you are in the middle of something and must move on to another task or user, then it is easy to forget important details and what you intended to write - Lack of time, much to follow up - Journals and minutes are not always read at the beginning of the shift, and this can lead to employees losing important information. For part-time employees, it is extra important to do this to update themselves on the users and process
Potential for improvement	<ul style="list-style-type: none"> - Potentials for better communication flow in the organization 	20	<ul style="list-style-type: none"> - Become even better at delegating tasks to get a little more time yourself - Establish good routines that allow everyone to update and read up on new and important information. - Things are so complex, and it is difficult to predict exactly what a day will be like, therefore it is difficult to know exactly what can be improved
Other			<ul style="list-style-type: none"> - All participants mention that the leader is crucial for good communication and cooperation in the organization.

The social educators with medical competencies area of responsibility. In the interviews with the social educators with medical competence, they all said that one of the biggest areas of responsibility is the role of the care service manager for the users in the organization. That role involves making action plans, estimating time on tasks, communicating with relatives and collaboration partners, follow-up, and responsibility for disseminating information and messages related to users. The responsibility of care service managers is divided between all the social educators with medical competence in the organization. Social educators with medical competence also have medical liability.

Communication with colleagues. In the interviews, the social educators with medical competence said that communication is generally reasonable. But because the organization is still in the beginning phase, several tasks and areas of responsibility will eventually be delegated to colleagues who are not social educators with medical competence. One participant said that this is easy to postpone because it requires time to provide the training needed to delegate more duties and tasks to coworkers. On the other hand, another participant mentioned that if responsibilities and tasks are delegated to colleagues, this will create more time for the social educators with medical competence.

Otherwise, by all the three participants, it is said that their colleagues' experience and education are beneficial for the organization's operation. The knowledge and skills of colleagues make the whole team suitable, which contributes to an interdisciplinary workplace with a high level of competence among the staff.

The participants also tell that one intervention that has been initiated to increase the communication and cooperation between the social educators with medical competence is monthly professional meetings where they can discuss situations and incidents. Due to few shifts at work together, this is done digitally. Professional competence from the social educator with medical competence education is put in focus and used when situations and

incidents are discussed at these meetings. Staff meetings for all the employees are also held every other week. At these meetings, all the employees who are going to work that day are invited to participate. These meetings are, among other things, an arena for discussions, mapping, and decisions for further operations in the organization.

Communication with relatives. In the interviews, all the social educators with medical competence say that they have overall good communication with relatives, but challenges can also arise. One of the challenges that all have experienced is that undesirable situations have occurred with the users, which could have been avoided if relevant information from relatives had been provided earlier. It is also mentioned that some relatives are more accessible to reach than others and that communication by text in some cases has increased the possibility of misunderstandings.

The social educators with medical competence also say that because the care home is relatively new and the users are young, the parents are more committed and want to contribute. A participant says in the interview that this is one factor that helps to create a good collaboration between the social educators with medical competence and the relatives.

Crisis situations. About crisis situations, all the social educators with medical competence say that it is very few significant crisis situations. Because of that, they have little experience within this field but hope that they will be involved and informed if a crisis would arise with one of the users they are care service managers for. They all also say that they feel that they are central if a crisis would occur, but not as prominent as the leader in the organization.

Challenges and potential for improvement. A recurring challenge is time. It emerges in the interview that it can be difficult to predict whether there is enough time to carry out administrative tasks in addition to daily tasks as the organization is so complex,

which makes it hard to predict situations that may arise. A quiet day can end up being a busy day. One participant says that this makes it hard to figure out how to improve this situation.

It is also a challenge to ensure that everyone reads previous journals and meeting minutes. This to update themselves on the latest news in the organization, which is especially important for the part-time employees since it can be a long time between each day at work. A suggestion for what can be done to improve and ensure that everyone is updated on the latest information is to create good routines and procedures for setting aside time to read journals from the last week as well as meeting minutes.

Other. All the social educators also said that the leader is crucial for good communication and cooperation in the organization in the interviews. The leader contributes to creating a good working environment where everyone can say what they mean, and everyone is heard and seen. The leader always shows up and helps if needed as well.

Summary of results

Overall, there are many indications that the social educators with medical competence in the organization have a central position in most cases. The results from the network analysis and the interviews essentially correspond. But some aspects are contradictory. Concerning handling crisis situations, the information from the interviews indicated that the social educators with medical competence felt they had a central role. In contrast, the data from the network analysis showed a less prominent position.

Concerning communication with relatives, the results from the network analysis did not indicate that there was a high degree of interaction with relatives. But in the interviews, however, answers show a more frequent communication between staff and the relatives. Otherwise, the results from the network analysis and the interviews seemed to match each other.

Discussion

The core of this study was to investigate the social educators with medical competencies role for the communication flow in a health organization. Like the results from the scoping review, the use of SNA was a good method for investigating relations and communication in a healthcare organization. By using SNA in examining the communication flow, several situations were analyzed to determine if the communication in the organization was situation-dependent. A deeper insight into the network structures was formed by the participants' answers to the multiple-choice questions and the social educators with medical competencies response in the interviews. The results from the SNA, multiple-choice questions, and the interviews identified the social educators with medical competencies role for communication flow in three different network structures, which all will be discussed. Other key elements that emerge in the results will also be addressed, such as challenges, weaknesses, and potential areas for improvement, and aspects for limitations and further research.

Discussion of the three network structures

Communication for daily work tasks and identification of responsibilities

Considering the results from the SNA, social educators with medical competence function as key actors in the category for communication for daily work tasks, which was identified through their centrality. In the interviews, the social educators with medical competence also described their role as central to communication in the organization. This description supports the centrality of the social educators with medical competence, which emerged in the network analysis. It was also mentioned in the interviews that the social educators with medical competence might be central because of their role as care service managers and not because of their role as social educators with medical competence. With that in mind, colleagues turn to social educators with medical competence precisely because

they have the knowledge and information that is useful and needed by their colleagues concerning to their expertise related to the role of care service manager. But as mentioned in the introduction, the social educators with medical competence have the only education in Norway that focuses on people with developmental disabilities and their rights (Fellesorganisasjonen, 2017). This expertise gives the social educators with medical competence resources that coworkers do not have, which contributes to their centrality in the network.

It is also worth mentioning the night guards, that did hardly communicate with other colleagues to implement daily tasks. The reason for this is most likely that the night guards are alone at work when they work night shifts. The night guards can seek guidance and knowledge from colleagues who have been at work the night before the night guards start their shifts, or from colleagues who arrive at work in the morning before the night guards go home. But the actual completion of the work tasks is done when the night guards are alone and there are no colleagues available to communicate with at the workplace.

Professional communication of knowledge and questions

As mentioned, social educators with medical competence have unique knowledge due to their education and their role as care service managers. This knowledge can be part of why social educators with medical competence are also central in the network for communication of professional knowledge and questions. A future investigation was conducted through one of the multiple-choice questions. It turned out that most of the participants approached the social educators with medical competence weekly for professional questions and conversations. In the interviews, the social educators with medical competence also tell that they have medical liability. Medical competence and liability are also factors that could make their colleagues ask them for help and knowledge, which contributes to making them central.

The social educators with medical competence also tell that the organization's overall collaboration can be assumed as good. It could seem like the employees specifically communicate with other employees in more significant positions in situations with professional communication of knowledge and questions. One reason for this may be that the employees in more significant positions are more often at work. Because of this, part-time employees probably have more shifts together with colleagues in full-time positions versus colleagues in part-time positions. Therefore, it will be more likely to communicate with coworkers in full-time positions. It can be assumed that participants who answered that they did not communicate with other colleagues more than once a month are the participants employed in the more minor positions. This because those employees are most likely not to work as often as the employees in more significant positions. If they are not at work weekly, it will not be relevant to weekly communication with colleagues.

Communication in crisis situations

In crisis situations, the centrality of the social educators with medical competence was low, in contrast to the centrality in the two other network structures. Within this network structure, the leader of the organization had the most central role. According to the leader, external actors (health and emergency services and relatives) functioned as key actors in the network. But based on the results that emerged in the multiple-choice questions that dealt with crisis situations in the survey, it could appear that crisis situations rarely took place in the organization. This was later confirmed in the interviews with the social educators with medical competence. Experience with crisis situations in the organizations was something the social educators with medical competence did not often experience. But still, it was stated in the interviews that the social educators with medical competence considered themselves central if a crisis should arise, but this was not reciprocated in the answers from the survey.

The reason for this contradiction in the interview and the SNA data may be, among other things, that the topic of crisis situations is comprehensive. The fact that the issue concerning crisis situations is broad can contribute to the participants' difficulty defining whether they have experienced crisis situations. A crisis does not necessarily have to be big, but it is conceivable that it is easy to think that a crisis must be a big event when the words crisis situation is presented. This can then contribute to explain the leader and the health and emergency services' centrality in crisis situations thorough the definition of crises, as well as studies of both smaller and larger crises, could have contributed to more detailed data on how communication in crisis situations is conducted.

Weaknesses and challenges

As mentioned earlier in the thesis, there may also be weaknesses that are related to their role as key actors in an organization. Overloading information requests is one of the weaknesses (Preiser, 2019). This may happen if key actors in the network act as bottlenecks for information in the organization. With the identified centrality of the social educators with medical competence, as well as all the tasks and areas of responsibility the social educators with medical competence state that they have, it is conceivable that they receive a large amount of information and inquiries from both internal and external actors connected to the network. Based on this, it may be a risk that the social educators with medical competence will either be or may be overloaded with information requests. Therefore, a good collaboration with colleagues and a steady working advantage can be considered an essential factor in reducing the risk of overloading information inquiries. To reduce the risk, delegating responsibility can also be an option.

Delegating responsibility and social reinforcement

Time was mentioned as a challenge by the social educators with medical competence. Concerning the organizations' complexity, where unforeseen changes and events can occur at

any time, and the delegation of responsibility and training to colleagues, the time was mentioned as an issue. In situations where behavior and complex information spread, social reinforcement is necessary (Bento et al., 2020). Delegation of new areas of responsibility will involve both the acquisition of new behavior by colleagues who will be given more responsibility and the addition of complex information. In BA, social reinforcement can be explained as an increase in the probability of later behavior based on interaction with other actors or groups (Bento et al., 2020). Examples of interactions with other actors or groups can include physical contact, praise, and attention (Bento et al., 2020). Per the delegation of responsibility to colleagues, training will be able to assist as social reinforcement for colleagues who receive the training since this will, among other things, give a lot of attention. If the training goes well, it can also lead to praise. Social reinforcement received due to training and acquiring new areas of responsibility can lead to a desire for more responsibility. This is because acquiring new knowledge earlier led to social reinforcement, which maintains the behavior of seeking and acquiring new knowledge.

On the other hand, one of the reasons why the necessary training for delegating tasks is postponed can be because the social educators with medical competence receive a lot of social reinforcement to implement those tasks that are meant to be further delegated. The lack of time and the need for delegation of work tasks and responsibility may not be perceived or forgotten due to the delivery of social reinforcement. Because the social educators with medical competence receive social reinforcement for the work tasks they do, the implementation of these work tasks is maintained. A lot of responsibility will also bring a lot of attention. Suppose this attention is positive and the execution of the work tasks is good. In that case, this could lead to social reinforcement that maintains behavior, and making the social educators with medical competence continue the hard work they already are doing. If

this should prove to be the case, then postponed delegation is most likely unconscious and only a result of the behavior being maintained due to social reinforcement.

Structure matter

Concerning delegation of responsibility, behavioral system analysis can be a method to use. Behavior system analysis focuses, among other things, on maintaining and improving processes, as well as enhancing actors and the organization (Brethower, 2004). Therefore, it will be essential to aim to improve work processes when delegating responsibilities, which make the work more efficient—for example, delegating responsibilities to more people in the organization. At the same time, it is essential to maintain what already works, such as the excellent cooperation between the staff mentioned in the interviews.

Good cooperation could also be indicated in the data obtained in the questionnaire. The data from the survey and the visualization of the network can also indicate a hierarchy in the organization. It may seem that it is a hierarchy where the key actors, the social educators with medical competence and the leader, are at the top of the hierarchy. This because they are the ones with most of the responsibility. The social structure is essential when it is desirable to explain the behavior in the system (Sandaker et al., 2019). The fact that most of the actors in the network turn to social educators with medical competence and the leader may have something to do with the structure in the network. The structure can be grounded in the roles that they have that involve responsibility. Therefore, it is conceivable that a behavior has been formed in the organization, where the actors without large areas of responsibility approach the actors with commitment if there is a need for assistance or guidance.

Individual characteristics and complexity

If the study had taken place over a more extended period, there would also have been a greater risk of studying significant changes in the organization. A study that examined the exploitation of key actors could have obtained more data about the organizations' complexity.

Then it would also have been possible to investigate whether centrality was connected to individual characteristics, and not only the roles as social educators with medical competence or the role as care service managers. The complex system is formed by the interaction between the individual and not by the individuals themselves (Axelrod & Cohen, 2008).

Therefore, a replacement of an employee could have been leading to a change in the communication and network structure. All agents in a complex system have their strategy for acting, which makes all the actors important for the context (Axelrod & Cohen, 2008). Data related to the complexity considering the individual characteristics were not identified. To have been able to locate this, more time and more follow-up investigations would have been necessary.

Limitations

One limitation related to the generalization of the findings is that not all care homes have social educators with medical competence in their staff. And if there are social educators with medical competence, these are not necessarily employed as care service managers. As mentioned in the section for further research, it is necessary to map whether the centrality and role of the social educators with medical competence in this study are related to their role as care service managers or the role as social educators with medical competence.

Another limitation connected to this study is that the research was just for a short period. To get an indication of the complexity in the organization, it would have been relevant to conduct follow-up studies to see if changes and developments in the organization also contributed to changes in the communication flow and the connections in the networks. It would also have been relevant to interview more participants and not just the social educators with medical competence. More interviews could gain a deeper insight into what thoughts and experiences other employees have about the social educators with medical competencies role and their role for the communication flow in general and in the various situations examined.

Future investigation

The social educators with medical competencies role for communication flow is a topic that needs more research because little available research focuses on social educators with medical competence. More studies examining the role of social educators with medical competence using SNA are therefore needed. Implementing a similar study in a health organization where not all the care service managers are social educators with medical competence would be of interest for future investigation. A health organization where the social educators with medical competence are hired with and without significant responsibility would make an excellent basis to investigate the essential role they have for the communication flow. To study the care service managers' role for communication flow, where the background and education are varied, would also have been of interest for future investigation. That could serve as a basis for comparison for this study and future similar studies.

It would also be of interest to investigate other network measures, like the distance and the availability in the network. Here, it could be interesting to examine the collaboration between intern key actors and external collaboration partners. And then how the information between those two becomes available and disseminated internally to the network of those actors who do not have direct contact with the external actors.

Conclusion

In the implementation of this study, data were collected by using a questionnaire and semi-structured interviews. The data from the survey helped to carry out an SNA of a complex health organization. Similar to previous studies identified in a scoping review, SNA proved to be a good method to identify network structures and actors' centrality for communication.

The thesis suggests that social educators with medical competence can have a central role in communication and operation in a health organization. In this study, this was the case. Still, it is also conceivable that the centrality of the social educators with medical competence is related to their role as care service managers in the organization. More research is therefore needed to confirm the role of social educators with medical competence concerning the communication flow in a care home.

This study examined a little-studied subject area. When searching for previous empirical data in the social review, no studies examined or focused on the social educators with medical competence in studies where SNA was part of the method. Due to the lack of research, this study can be considered necessary and contribute to further research.

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Appendix A: Questionnaire – Mapping the communication in the care home

Spørreskjema – Kartlegging av kommunikasjon i bolig

Velkommen til spørreundersøkelse.

Undersøkelsen vil ta ca. 10 minutter.

Alle spørsmål må fylles ut. Om du ikke har et svar å angi kan du skrive at du ikke vet for å komme videre i undersøkelsen.

Alle opplysninger og navn som blir gitt i studien vil anonymiseres, og navn vil kun være tilgjengelig for databehandlere i studien (Frida Grønseth og Fabio Bento).

Skulle du angre på din deltagelse i studie/spørreundersøkelsen er det bare å gi beskjed, så blir dine svar slettet og utelatt fra studiet.

Lykke til!

Del 1 – identifisering av nettverk

Hva heter du (fornavn og etternavn)?

- Oppgi navn

Hvilket kjønn er du?

- Mann/Kvinne

Hvilken stillingsprosent har du?

- Oppgi stillingsprosent

Hva er din yrkestittel i boligen?

- Oppgi tittel (Leder, Vernepleier, Miljøarbeider, Miljøterapeut, Nattvakt)

Hvor lenge har du vært ansatt?

- Oppgi hvor lenge du har vært ansatt.

Hvem kommuniserer du oftest med for å gjennomføre arbeidsoppgaver?

Ta utgangspunkt i de 3 siste månedene.

Oppgi 1-10 navn på de du oftest kommuniserer med for å gjennomføre dine arbeidsoppgaver. Både interne og eksterne kontakter kan inkluderes i svaret. Om eksterne kontakter inkluderes opplys hvilken rolle disse har.

- Oppgi navn

Del 2 – Faglig kommunikasjon av kunnskap og spørsmål

Hvor ofte spør du kollegaer om hjelp/råd/veiledning?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Hvem spør du oftest om hjelp?

Svar med utgangspunkt fra de 3 siste månedene, og oppgi opp til 5 navn. Både interne og eksterne kontakter kan inkluderes i svaret. Om eksterne kontakter inkluderes opplys hvilken rolle disse har.

- Oppgi navn

Hvor ofte tar du kontakt med vernepleiere for faglige spørsmål og samtaler?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Hvor ofte blir du inkludert i diskusjoner/kartlegging av faglige avgjørelser?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Hvor ofte har du faglige samtaler ansikt til ansikt med kollega/kollegaer?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Hvor ofte har du faglige samtaler med kollega/kolleger digitalt?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Del 3 – Kommunikasjon i krisesituasjon

Krisesituasjoner omhandler uforutsette hendelser. For eksempel sykdom/skade (hos beboere og personal) og uønskede hendelser (eks. utagering)

Hvem kontakter du/ville du kontaktet i krisesituasjoner?

Svar med utgangspunkt fra de 3 siste månedene. Nevn opp til 5 personer. Både interne og eksterne kontakter kan inkluderes i svaret. Om eksterne kontakter inkluderes opplys hvem disse er.

- Oppgi navn

Hvor ofte har du vært i en krisesituasjon hvor du har måtte søkt bistand?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Om du har vært i en krisesituasjon, har det vært en faglig samtale om situasjonen i etterkant?

Svar med utgangspunkt fra de 3 siste månedene.

- Ja, Nei

Om ja på forrige spørsmål, hvem hadde du denne samtalen med?

Nevn opp til 5 personer.

- Oppgi navn

Del 4 – kommunikasjon med pårørende

Hvor ofte kommuniserer du med pårørende?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Har du noen gang tatt kontakt med pårørende for å kartlegge/håndtere en situasjon?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Har pårørende noen gang tatt direkte kontakt med deg for faglige vurderinger/avgjørelser?

Svar med utgangspunkt fra de 3 siste månedene.

- Daglig, ukentlig, månedlig, sjeldnere, aldri

Tusen takk for at du ønsker å delta i studiet, og tok deg tid til å svare på denne spørreundersøkelsen.

Ved eventuelle spørsmål ta kontakt med Frida på tlf.: 95782633 eller e-post:
s341256@oslomet.no

Appendix B: Interview guide

Intervjuguide – en generell disposisjon

Intervjuene vil gjennomføres med vernepleierne i bolig. Dette er en generell disposisjon til hva intervjuet skal inneholde, og hvordan intervjuet vil struktureres. Oppfølgingsspørsmål og videre diskusjoner av svar kan forekomme. Intervjuene vil bli tatt opp som lydfil, som vil transkriberes etter at intervjuet er gjennomført. Etter at intervjuet er transkribert til tekstformat, så vil lydfilen slettes. Intervjuene vil anonymiseres.

1. Opplyse deltagerne om intervjuets formål og fremgangsmåte
2. Selve intervjuet
 - a. Hva er din (vernepleierens) rolle og ansvarsområde i boligen?
 - i. Har du ansvarsområder som ligger utenfor rollen din som "vernepleier"? Eks. verneombud, tillitsvalgt.
 - ii. Hvilken rolle tenker du selv at du har i forhold til kommunikasjonsflyten i boligen?
 - b. Hvordan er kommunikasjonen med kollegaer?
 - i. Inkluderes kollegaer som ikke er vernepleiere i faglige samtaler, og hvordan blir dette eventuelt gjort?
 - ii. Bidrar informasjon fra kollegaer aktivt til å etablere nye tiltak og/eller forutse fremtidige hendelser og situasjoner som kan oppstå
 - iii. Opplever du at kollegaer søker hjelp og veiledning på grunn av din rolle som vernepleier
 - c. Hvordan er kommunikasjonen med de pårørende?
 - i. Hvordan bearbeides informasjonen som forekommer fra pårørende?
 - ii. Hvordan formidles det til resten av personalgruppen?
 - iii. Bidrar informasjon fra pårørende aktivt til å etablere nye tiltak og/eller forutse fremtidige hendelser og situasjoner som kan oppstå
 - d. Hvordan opplever du din egen rolle i forhold håndtering og bearbeidelse av krisesituasjoner?
 - e. Foreligger det utfordringer relatert til behandling og sikring av informasjon, og hva går disse utfordringene ut på?
 - f. Foreligger det eventuelle forbedringspotensialer i hvordan det kommuniseres i organisasjonen?
 - i. Har du eventuelle tanker om årsaken til disse svakhetene?
 - g. Avslutning
 - h. Oppsummering av intervjuet

Appendix C: Approval from NSD



NSD sin vurdering

Prosjekttittel

Nettverksanalyse av vernepleiernes rolle i en omsorgsbolig

Referansenummer

383277

Registrert

09.02.2021 av Frida Grønseth - s341256@oslomet.no

Behandlingsansvarlig institusjon

OsloMet – storbyuniversitetet / Fakultet for helsevitenskap / Institutt for atferdsvitenskap

Prosjektansvarlig (vitenskapelig ansatt/veileder eller stipendiat)

Fabio Bento , fabben@oslomet.no, tlf: 67236654

Type prosjekt

Studentprosjekt, masterstudium

Kontaktinformasjon, student

Frida Grønseth, s341256@oslomet.no, tlf: 95782633

Prosjektperiode

01.01.2021 - 27.07.2021

Status

12.04.2021 - Vurdert

Vurdering (1)

12.04.2021 - Vurdert

Det er vår vurdering at behandlingen av personopplysninger i prosjektet vil være i samsvar med personvernlovgivningen så fremt den gjennomføres i tråd med det som er dokumentert i meldeskjemaet med vedlegg den 12.04.2021, samt i meldingsdialogen mellom innmelder og NSD. Behandlingen kan

starte.

MELD VESENTLIGE ENDRINGER

Dersom det skjer vesentlige endringer i behandlingen av personopplysninger, kan det være nødvendig å melde dette til NSD ved å oppdatere meldeskjemaet. Før du melder inn en endring, oppfordrer vi deg til å lese om hvilke type endringer det er nødvendig å melde:

https://nsd.no/personvernombud/meld_prosjekt/meld_endringer.html

Du må vente på svar fra NSD før endringen gjennomføres.

TYPE OPPLYSNINGER OG VARIGHET

Prosjektet vil behandle alminnelige kategorier av personopplysninger frem til 27.07.2021.

LOVLIG GRUNNLAG

Prosjektet vil innhente samtykke fra de registrerte til behandlingen av personopplysninger. Vår vurdering er at prosjektet legger opp til et samtykke i samsvar med kravene i art. 4 og 7, ved at det er en frivillig, spesifikk, informert og utvetydig bekreftelse som kan dokumenteres, og som den registrerte kan trekke tilbake.

Lovlig grunnlag for behandlingen vil dermed være den registrertes samtykke, jf. personvernforordningen art. 6 nr. 1 bokstav a.

PERSONVERNPRINSIPPER

NSD vurderer at den planlagte behandlingen av personopplysninger vil følge prinsippene i personvernforordningen om:

- lovlighet, rettferdighet og åpenhet (art. 5.1 a), ved at de registrerte får tilfredsstillende informasjon om og samtykker til behandlingen
- formålsbegrensning (art. 5.1 b), ved at personopplysninger samles inn for spesifikke, uttrykkelig angitte og berettigede formål, og ikke behandles til nye, uforenlige formål
- dataminimering (art. 5.1 c), ved at det kun behandles opplysninger som er adekvate, relevante og nødvendige for formålet med prosjektet
- lagringsbegrensning (art. 5.1 e), ved at personopplysningene ikke lagres lengre enn nødvendig for å oppfylle formålet

DE REGISTRERTES RETTIGHETER

Så lenge de registrerte kan identifiseres i datamaterialet vil de ha følgende rettigheter: åpenhet (art. 12), informasjon (art. 13), innsyn (art. 15), retting (art. 16), sletting (art. 17), begrensning (art. 18), underretning (art. 19), dataportabilitet (art. 20).

NSD vurderer at informasjonen om behandlingen som de registrerte vil motta oppfyller lovens krav til form og innhold, jf. art. 12.1 og art. 13.

Vi minner om at hvis en registrert tar kontakt om sine rettigheter, har behandlingsansvarlig institusjon plikt til å svare innen en måned.

FØLG DIN INSTITUSJONS RETNINGSLINJER

NSD legger til grunn at behandlingen oppfyller kravene i personvernforordningen om riktighet (art. 5.1 d), integritet og konfidensialitet (art. 5.1. f) og sikkerhet (art. 32).

Nettskjema er databehandler i prosjektet. NSD legger til grunn at behandlingen oppfyller kravene til bruk

av databehandler, jf. art 28 og 29.

For å forsikre dere om at kravene oppfylles, må dere følge interne retningslinjer og/eller rådføre dere med behandlingsansvarlig institusjon.

OPPFØLGING AV PROSJEKTET

NSD vil følge opp ved planlagt avslutning for å avklare om behandlingen av personopplysningene er avsluttet.

Lykke til med prosjektet!

Kontaktperson NSD: Kajsa Amundsen
Tlf. Personverntjenester: 55 58 21 17 (tast 1)