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# Dog assisted activities, as a group activity – a measure for increased engagement among residents in nursing homes

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# Forord

Så er denne fantastiske tiden over. Det var opprinnelig ikke min plan at jeg skulle skrive en masteroppgave. Jeg skulle bare ta 15 studiepoeng i folkehelse, men det viste seg fort at faget var så interessant at jeg bare fortsatte.

Takk til NMBU og alle forelesere, dere har lært meg masse, men jeg er også blitt klar over alt jeg ikke kan, noe som inspirerer til å dykke inn i nye temaer.

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**Turid Sælid**

# Sammendrag


**Bakgrunn**

Mangelen på meningsfulle aktiviteter og sosiale og kulturelle opplevelser er et stort problem for mange beboere på norske sykehjem. Ikke sjelden fører det med seg ensomhet, inaktivitet, depresjon, apati eller mangel på fysisk aktivitet. Besøkshundtilbud kan være en mulig måte for å redusere problemet.

**Problemstilling**

I denne studien har målet vært å undersøke om hundeassisterte aktiviteter, som gruppe-aktivitet, kan øke engasjementet hos beboere på sykehjem.

**Metode**

I denne studien er observasjon benyttet som metode sammen med observasjonsverktøyet Group Observational Measurement of Engagement («GOME»), Verktøyet måler hver enkelt deltaker individuelt utfra 5 skalaer, varighet i deltakelse i aktiviteten, engasjement i aktiviteten, aktiv deltakelse i aktiviteten, holdning til aktiviteten og grad av søvn under aktiviteten. Observasjonene er gjort før og under hundeaktiviteten.

**Resultat**

Resultatene fra denne studien viste statistiske signifikante resultater i 4 av 5 variabler., engasjement i aktiviteten, aktiv involvering i aktiviteten, holdning til aktiviteten og grad av søvn under aktiviteten. Variabelen varighet i aktiviteten viste ikke statistisk signifikante resultater.

**Konklusjon**

Resultatene viser at dyre/hundeassisterte aktiviteter, som gruppeaktivitet, kan være med å øke engasjement blant sykehjemsbeboere.



**Nøkkelord:** Dyreassisterte intervensjoner, dyreassisterte aktiviteter, hundeassisterte intervensjoner hundeassisterte aktiviteter, gruppeaktivitet, engasjement, eldre, sykehjem, demens

# Abstract

**Background**

The deficiency of meaningful activities, social and cultural experiences is a major problem for many of the residents in Norwegian nursing homes. Loneliness, inactivity, depression, apathy, or lack of physical activity is often the consequences. Visiting dog teams could contribute to reduce the problem.

**Objective**

In this study the aim has been to explore whether dog-assisted activities, as a group activity, may increase engagement among residents in nursing homes.

**Method**

In this study, observation is used as a method together with the observation tool Group Observational Measurement of Engagement («GOME»). The tool measures each participant individually based on 5 subscales, duration in participating in the activity, engagement in the activity, actively involving in the activity, attitude towards the activity and the amount of sleep during activity. The observations took place before and during the dog assisted activity.

**Results**

The results from this study showed statistically significant results in 4 out of 5 variables, engagement in the activity, actively involving in the activity, attitude towards the activity and the amount of sleep during activity. The variable duration in participating in the activity did not show statistically significant results.

**Conclusion**

The results showed that animal/dog assisted activities, as a group activity, may increase the engagement among residents in nursing homes.

**Key words:** Animal assisted interventions, animal assisted activities, dog assisted interventions, dog assisted activities, group activity, engagement, elderly, nursing home, dementia

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## The structure of the thesis

This thesis is divided in two parts, a journal article and a “kappe”. The “kappe” presents a wider range of information than the article, about theory and earlier research. We hope to publish the article in Scandinavian Journal of Occupational Therapy and the article therefore follows their guidelines.

## 1.0 Introduction

In Norway approximately 32000 persons are long-term residents in nursing homes, furthermore approximately 9000 people have short-terms stay (Statistics Norway (SSB), 2020). For long-term residents, the average period of time residents live in a nursing home is 2 years (Kjelvik & Jønsberg, 2017). But the variation differs from a few months up to several years.

It is a political goal in Norway to ensure that elderly will experience a daily life which is perceived having good quality of life, even after the elderly need to start using public care services, like for instance nursing homes (Meld. St. 15 (2017-2018)). But even if the solutions for achieving this goal are already there, the solutions may be used too seldom and too random, and the variation regarding the services and the quality associated with the services differ too much (Meld. St. 15 (2017-2018)). In Haugland (2012), Vik (2012), Slettebø (2008), it is shown that the biggest weaknesses of today's care services in Norway are the lack of appropriate activities and social and cultural conditions for the users. This is also essential for the resident’s wellbeing (Cohen-Mansfield, 2018, Vik, 2012). Around 84 % of the residents in nursing homes suffer from some form of dementia and the number of people suffering from dementia in Norway may double in the period 2030-2050, mainly because of increased life expectancy (Norwegian Institute of Public Health, 2021). This illness impacts on people's initiative and engagement (Nasjonalforeningen for folkehelsen, 2021). A study from USA revealed that nursing home residents, that were able to walk, during the day spent 94 % of their time in sedentary (Telenius et al., 2017).

In Meld. St. 15 (2017-2018) it is highlighted that “Physical, social and cultural activity must be adapted to the individual’s interests, wishes and needs". According to Cohen Mansfield (2018), the content of the activities that are offered plays a big role for how interesting the residents finds the activities, and this is not affected by the resident’s cognitive function. As an example of this both Cohen-Mansfield (2018) and Haugland (2012) points that poetry or reading aloud for the elderly does not seem to create a higher level of engagement by the elderly. The elderly wish to be active themselves (Haugland, 2012, Vik, 2012) and the authorities want to encourage that elderly in general should experience a minimum of 1 hour per day with activity that the elderly wish to perform (Meld. St. 15 (2017-2018).

The authorities have registered activities that can serve as an inspiration for those municipalities that still need to improve their effort regarding offering meaningful activities to elderly, among those the residents in nursing homes (Meld. St. 15 (2017-2018). These suggested activities are already used and approved by elderly themselves, staff, relatives, volunteers, and researchers in other municipalities.

One possible activity could be animal assisted interventions, in a governmental report dogs are mentioned specifically as part of the public health initiative through the Folkehelsemeldingen, Meld. St. 19 (2014-2015). It is emphasized that the interaction between humans and animals can be both motivating and health-promoting.

The number of residents living in nursing homes is a large group of people. When the variation between what is offered and the quality in what is offered differ regarding physical, social, and cultural activity, it must be seen as a challenge regarding public health. Not only for the individual, but also for their families and the society as both families and the society share a common goal that includes a best possible quality of life for the residents (Meld. St. 15 (2017-2018).

## 2.0 Background

In this chapter different aspects regarding the background for the study will be presented. First it is presented how residents may be affected by living in a nursing home, especially related to activity. Then the importance of meaningful activities in people’s life will be presented. Furthermore, the term of engagement, animal assisted interventions and The Red Cross and their organisation and activity offers regarding dog assisted activities, will be presented.

### 2.1 To live in a nursing home, residents, and activities

The transition to move from your own home to live in a nursing home will for most people represent a major change in life (Berry et. al., 2012). For some people it will appear as a positive change, but for others it will represent a negative change in life. For many, the quality of life will be perceived worse than before (Johannessen, 2018, Berry et. al., 2012). The loss of functions, autonomy and other important aspects of life is not necessarily offset by the care/nursing and safety a nursing home may provide (Johannesen, 2018). Apathy and inactivity are consequences people often experience when they become residents in nursing homes (Johannessen, 2018, Friedman et al., 2019).

Surveys show that elderly express satisfaction with the physical care and nursing they receive in the nursing home, but it is a lack of meaningful activities and social contact (Haugland, 2012, Vik, 2012, Slettebø, 2008). Furthermore, both Haugland (2012) and Vik (2012) refers to the fact that most of the elderly want to participate in activities where the elderly can be active themselves. It is therefore important that the residents' wishes, and needs are mapped by the health and care service by gaining insight into the individual's background and areas of interest Meld. St. 15 (2017-2018). There is also a requirement laid down in the Norwegian Directorate of Health's (2020) guidelines: "that municipal enterprises shall facilitate psychosocial measures and activities among recipients of health and care services, including people with dementia". In those cases where the residents' wishes and needs for more meaningful days are mapped, it is often the case that people with dementia are excluded from the surveys and these surveys is very much characterized by the fact that only a small number of residents are asked (Haugland, 2012).

As earlier mentioned around 84 % of the residents in nursing homes suffer from some form of dementia (Norwegian Institute of Public Health, 2021). Dementia is the result of a disease related to the brain (Nasjonalforeningen for folkehelsen, 2021). The symptoms are various, but among the most common are problems with daily life activities, short term memory, expressing themselves, attention and concentration, mood swings, behavioural changes and loss of initiative and engagement (Nasjonalforeningen for folkehelsen, 2021). The personal strain when one experiences loss of mental and physical function will be experienced as major and may give a perceived sense of insecurity and mental anxiety for many (Norwegian Institute of Public Health, 2021). Because of these changes a lot of them find it hard to

participate in social occasions or participate in activities (Johannessen, 2018). There are also a large number of dementia sufferers without a formal diagnosis therefore, the municipality will be unable to offer them a nursing and care offer adapted to their needs (Nasjonalforeningen for folkehelsen, 2021).

### 2.2 The need of meaningful activities in people's life

From a biological perspective there are signs that indicate that people are born with the need of being active (Lindahl-Jacobsen & Jessen-Winge, 2017). In that way activity unconsciously has an impact on both health and survival. Research on the significance of social and productive activities for human health shows that these have the same effect on mortality as physical activity (Lindahl-Jacobsen & Jessen-Winge, 2017). Activities performed in everyday life often take place unconsciously and it can therefore be difficult to see and measure the effect of them. The fact that many tasks that the resident did when living in their own home, are done by others when moving into a nursing home, gives even less activity on a daily basis for the residents (Telenius et al., 2019). The Norwegian Institute of Public Health (p. 11, 2020) says in its report on "Quality of life in Norway 2019" that: "……. access to meaningful activities and social arenas are prerequisites for a good quality of life and measures aimed at strengthening these factors should be given priority."

The environment is one of the determinants that influence people's participation in meaningful activities and social gatherings (Lindahl-Jacobsen & Jessen-Winge, 2017, Cohen-Mansfield et al., 2009). Environments can promote or limit or even preclude participation in meaningful activities and socializing. This is something that one is aware of in relation to institutions, such as nursing homes (Lindahl-Jacobsen & Jessen-Winge, 2017).

But activity alone is not enough (Lindahl-Jacobsen & Jessen-Winge, 2017). It must be put in a context where the person, the environment and the activity are working together (Lindahl-Jacobsen & Jessen-Winge, 2017, Cohen-Mansfield et al., 2009). Self-care, productivity, and leisure time must be balanced appropriately (Lindahl-Jacobsen & Jessen-Winge, 2017). This is evident if there is a change in people's life, a change that can include giving up meaningful activities. It is then important not only to focus on the activity itself, but it must be set in a wider context that includes the persons total life situation, if it is meant to affect both health and the quality of life for the person (Lindahl-Jacobsen & Jessen-Winge, 2017).

### 2.2.1 Engagement in activities

The term engagement is used in many ways, we are engaged in work, leisure activities, politics, religion and for instance our local community. Cohen-Mansfield et. al. (2017) defines the term engagement as:" "the act of being occupied or involved with an external stimulus".

Cohen-Mansfield et al. (2017), state that the term engagement, should have been a part of Maslow's hierarchy of needs, as it in some way represents a form of fundamental human necessities. A need which if not met in an adequate way could lead to several negative effects, like for instance, in worst cases aggression, but very often boredom.

The "Flow Theory" could also be seen as a form of engagement (Csikszentmihalyi et al. 2014). The flow theory describes the feeling one has when one is completely occupied with something, like for instance reading an interesting book, and are in a state where time flies unnoticeably. It is related to the feeling of having control, mastering the activity one is performing. This sense of control could make one less anxious. One's attention is focused on the activity, and one invests all one's capabilities in the activity. Csikszentmihalyi et al. (2014) states that the positive feelings the activity gives one is of vital importance, but this is closely related to how well one is mastering the activity. Most people independently are able to engage in different aspects of their life, included activities, but vulnerable individuals or groups, like residents in nursing homes, may not have that possibility (Cohen-Mansfield et. al., 2017).

## 2.3 Animal assisted interventions and its significance for the elderly

Focus on animal-assisted interventions (AAI) has increased worldwide (Enders-Slegers et. al., 2019). According to the International Association of Human-Animal Interaction Organizations (IAHAIO, 2018) definition Animal Assisted Intervention (AAI) is "a goal oriented and structured intervention that intentionally includes or incorporates animals in health, education, and human services (e.g., social work) for the purpose of therapeutic gains in humans", - and includes the sub-groups Animal Assisted Therapy (AAT), Animal Assisted Education (AAE) and Animal Assisted Activity (AAA)".

To what extent nursing homes include or offer animal assisted interventions are difficult to say. A Dutch study showed that of 165 returned surveys from nursing homes only 40 did not

offer any animal assisted interventions (Schuurmans et al., 2016). A study from Norway (Myren, 2010) showed that out of 292 nursing homes, 80 had animals in the nursing homes, 27 of them were visiting dogs. When it comes to acceptability of animal assisted activities, among residents, relatives and staff, a study by Machova et. al. (2020) showed that more than 90 % expressed a positive attitude towards animal assisted interventions and the outcome of it. In Wesenbergs et al. (2018) it is also highlighted that the high level of participation indicates a high grade of acceptance of the animal assisted interventions. Johannessen (2018) underlines that it is vital that visits at institutions are supported and encouraged by the leaders of the institution.

Johannessen (2018) claims that a dog's biggest advantage over humans is that the dog meets humans without prejudice. Further, Beck cited in Fine & Beck (2019) has said that loneliness reduces, and conversations increase in the company of animals. An animal can in some way offer a link between the humans and the world outside, give hope and provide meaning to life (Fine & Beck, 2019).

The dogs often get in the middle of the attention and may create social interactions among people (Johannessen, 2018, Wesenberg et al., 2018, Yakimicki et.al., 2019, Marks & McVilly, 2020). Furthermore, human senses are stimulated in encounters with the dog. They get to see, feel, and hear and the meeting can trigger joy, affection (Johannessen, 2018, Friedman, et. al., 2019).

The positive interactions between humans and animals may have a good influence on both physical and mental health, learning, self-efficacy and may also increase quality of life (Berget et. al., 2018, Wesenberg et. al., 2018, Kårefjärd & Nordgren, 2018, Fine et al., 2019, Marks & McVilly, 2020, Friedman et al., 2019, Yakimicki et.al., 2019,). Levels of depression, apathy etc. have also shown significant results regarding decreasing symptoms (Friedman et al., 2019, Olsen et al., 2016, Yakimicki et. al., 2019). A dog can also contribute to an increased level of physical activity if the resident can take the dog for a walk (along with the dog handler) (Johannessen, 2018, Friedman et al., 2019). In Wesenberg et al. (2018) their research indicated that the dog made the difference, even if the activity in both the AAI and the control group (without a dog) gave positive results for the wellbeing of the residents in the nursing home.

Marks & McVilly (2020), Yakimicki et al. (2019), Zafra-Tanaka et al. (2019), has done systematic reviews/meta-analysis about the effect of animal assisted interventions and elderly with dementia. Yakimicki et, al. (2019) showed an increased level of activity and status regarding nutrition among the residents in nursing homes. These findings regarding increased levels of activity and increased levels of nutrition, included the use of dogs, horses and aquarium fishes. Marks & McVilly (2020) refers to a study showing a clear decreasing level of mental stress using animal assisted interventions on elderly with dementia.

In total these reviews show various outcomes, but especially in Yakimicki (2019) and Marks & McVilly (2020) positive statistically significant results are reported regarding prosocial behaviour, reduction in depression or other mood related conditions such as aggression and agitation, increased physical activity and better quality of life.

Both animal assisted interventions (AAI) and animal assisted activities (AAA) require that the animal and the animal handler have adequate training (IAHAIO, 2018). The animal handler also needs to be trained in handling both animals and people and knowledge of good animal welfare, such as behavioural issues, needs, health and how to handle stress of the animals participating. And both animal assisted interventions and animal assisted activities need to be seen in a wide-ranging perspective (IAHAIO, 2018).

### 2.3.1 The Norwegian Red Cross and their activity with visiting friend with dog service

The Red Cross is an international and political neutral organisation that works to help people all over the world and in their local communities. Their main focus is primary health, social inclusion and to help with disaster management (Red Cross, n.d.).

Among all the areas The Norwegian Red Cross are involved in, are an activity called visiting friend with dog service (“Besøksvenn med hund”) (Red Cross, n.d.). This visiting friend with dog service is an animal assisted activity which is defined by IAHAIO (2018) as “a planned and goal oriented informal interaction and visitation conducted by the human-animal team for motivational, educational and recreational purposes. In Norway the Red Cross has around 600 visiting friends with dog service teams. To become a visiting friend with dog service team both the owner and the dog need to fulfil some formal demands (Red Cross, n.d.). The dog needs to be calm, friendly and handle different kinds of situations, such as sharp and loud noises or movements, and in general have good health. The dog also needs to pass a test to be

certified as a visiting dog. All kinds of dogs and breeds can become visiting dogs. The owner must have attended all the courses required by the Norwegian Red Cross before the visiting friend with dog service team is approved (Red Cross, n.d.).

A visiting friend with dog service team includes a person with a dog visiting some form of institution, typically a nursing home, prison or a school, people's homes, or other places where there is a need for more social interactions or closeness. The visits can be on an informal basis, or it can be part of a more formal setting which may include that the dog comes on a regular basis, as once a week. On an average level the visits take places 2 times a month and lasts up to 1 hour each time (Red Cross, n.d.). Both groups and individuals can be a part of the activity and it can take place both indoors and outdoors. For the Norwegian Red Cross, it is underlined that the visits must be adapted to both the one who wishes to be part of the activity and to the dog and its handler (Red Cross, n.d.).

## 3.0 Theory on human-animal interaction

There are several theories that describe the relationship between animals and humans, and the possible impact on human health (Berget & Braastad, 2018). The biophilia hypothesis suggests that there are links between humans, animals and nature that are closely connected to survival outcomes, in our evolutionary history, causing a genetic connection among these aspects (Berget & Braastad, 2018). Different theories about bonding and belonging, like social support or Bowlby's attachment theory, could also be connected to describing the relationship between humans and animals. And mastering theories, like Banduras self-efficacy theory, may also describe important aspects of this relationship (Berget & Braastad, 2018). In this study I have chosen to focus on the Salutogenic Model of Health (SMH) as I see this as a holistic and important theory regarding health.

### 3.1 The Salutogenic Model of Health

Aaron Antonovsky developed the theory about how people manage to stay healthy under various life conditions (Walseth & Malterud, 2004). The theory was named the Salutogenic Model of Health, saluto meaning health and genese meaning origin (Vinje et. al., 2016) and the salutogenic model of health is an important model regarding health.

The theory describes how the same stressors can influence differently on different persons and it wants to change the view from patogenese to salutogenese, meaning that instead of focusing on what causes illness one should focus on what keeps us healthy (Vinje et al., 2016). Health regarding Antonovsky (1987) is wide ranged and includes more than just the physiological elements. It also includes ”fantasy, love, playing, meaning, will and the social structures that promote these” (Antonovsky, 1987, p. 9).

The theory implicates that there is a link between the resources people have to handle with the stressors and how it affects them (Vinje et al., 2016) Also the resources an individual has to deal with different kinds of life strain is not equally distributed (Walseth & Malterud, 2004). Economical resources, social support such as being part of a community, religion etc may influence. Earlier experiences in life are also one of the determinants that can affect one's sense of coherence. Furthermore, how the individuals are facing/acting upon this life strain may come from their sense of coherence (Antonovsky, 1987)

As a result of these aspects the theory about the term sense of coherence was developed (Vinje et. al., 2016). The sense of coherence is mainly developed during early life (Walseth & Malterud, 2004) and remains relatively stable throughout life (Vinje et al., 2016). The term Sense of coherence (SOC) is divided in 3 areas and focus on how human expectations affect “whether the new situation is comprehensible”, “whether the situation appears logical and predictable” and “whether we think what is required in new situations is manageable.” (Vinje et. al., 2016, p. 32). In a way the sense of coherence may be seen as the origins of health (Vinje et. al., 2016).

The theory states that in one way or another we are all in some way healthy and the state of a human is never 100 % healthy or unhealthy (Antonovsky, 1987). But how we describe the situation may impact the outcome. The determinants that lead to health are several different determinants and include buffer determinants (Antonovsky, 1987). People who have resources, and are aware of their resources, and know how to use them, may to greater extent avoid unhealthy situations/ill health (Vinje et. al., 2016.)

The theory claims that we all have “general resistance resources (GRR)” (Vinje et. al., 2016). These resources can be used to meet a broad range of challenging situations. The actual

definition that describes GRR is *"any characteristic of the person, the group, or the environment that can facilitate effective tension management"* (Vinje et. al., 2016, p. 29).

The theory also includes the term specific resistance resources ("SRR)" (Vinje et. al., 2016.). These are special resources that are useful in a certain situation. The definition of SRR is *"They (SRRs) are many and are often useful in particular situations of tension. A certain drug, telephone lifelines of suicide-prevention agencies or an understanding look in the eyes of an audience to whom one is lecturing can be of great help in coping with particular stressors. But these are all too often matters of chance or luck, as well as being helpful only in particular situations."* (Vinje et. al., 2016, p. 29).

The connection between sense of coherence and GRR/SRR is whether a person is able to identify which type of GRR or SRR that are useful in a stressed situation, relies on how strong his sense of coherence is (Antonovsky, 1987). A strong sense of coherence may lead to that the person can be able to release his GRR/SRR. Antonovsky describes it as a behaviour quality to be able to release a person's GRR/SRR. But he also underlines that this is not a way to determine how a person will behave in a certain situation (Antonovsky, 1987).

Even if Antonovsky (1987) states that your sense of coherence and general resistance resources are established in early years and remain relatively stable throughout life, the ability to release these resources may be more difficult as one gets older (Quehenberger & Krajic, 2017). With the loss of functions, autonomy, and other capabilities one can become more dependent on others (Johannessen, 2018, Friedman et al., 2019, Vik. 2012, Slettebø, 2007). That could lead to a greater loss of engagement/apathy and inactivity (Cohen Mansfield, 2017, Vik, 2012, Slettebø, 2007) and by that your sense of coherence may decrease as you no longer experience that things are manageable (Antonovsky, 1987). As the research concerning dog/animal assisted interventions (see chapter 2.4) seem to generate some results according to these aspects (Berget et. al., 2018, Wesenberg et. al., 2018, Kårefjärd & Nordgren, 2018, Fine et al., 2019, Marks & McVilly, 2020, Friedman et al., 2019), it is likely to think that this also makes life more meaningful as well as wellbeing among residents in nursing homes increases (Wesenberg et al., 2018). The well-being paradox, meaning that some people in a high age are able to find acceptability and value in life even if physical functions may decrease, could be seen as a form of sense of coherence (Quehenberger & Krajic, 2017).

Being part of “something bigger», like being part of a community and being able to care for someone are underlined from Antonovsky (Vinje et al., 2016) as an important determinant of general resistance resources/sense of coherence (the meaningfulness). When the nursing homes do not include activity that provides interactions with others these needs for being part of a community are not met adequately and could therefore increase less engagement (Cohen Mansfield, 2018, Slettebø, 2008, Vik, 2012) and meaningfulness. Furthermore, by moving into a nursing home one can experience that the environmental determinants do not invite activity (Vik, 2012) and environmental determinants are a vital source in creating engagement as pointed out by Cohen Mansfield et al. (2017). As Wesenberg et al., (2018) states the dog/animal may create a connection between the residents and the rest of the world/outside world and that may create more engagement as you meet a more varied group of people/animals then what the nursing home can provide for itself (Vik, 2012, Slettebø, 2008).

## 4.0 Objective

As approximately 40000 people at any time live in nursing homes in Norway, both on long- and short-terms stay (Statistics Norway (SSB), 2020), the lack of meaningful activities and social and cultural experience for the residents is a major challenge (Haugland, 2012, Vik, 2012, Slettebø, 2008). Furthermore, the challenge is even more serious as approximately 84 % of the residents suffer from some form of dementia, which reduces the residents' own possibilities to participate in activities and social settings, because of the illness's impact on engagement and inactivity (Norwegian Institute of Public Health, 2021, Nasjonalforeningen for folkehelsen, 2021).

Based on this knowledge, the aim of this study is to explore whether group activity with a visiting dog, may increase the engagement among the residents in the nursing homes.

I have therefore chosen the objective for my study:

**Does the use of a dog assisted activity, as a group activity, increase engagement among residents in nursing homes?**

## 5.0 Method

This chapter will present the design of the study, the participants, the observation tool, data collection, statistical analysis and ethical considerations related to this study and its objective.

Akershus Røde Kors and Norwegian University of Life Sciences (NMBU) have had a collaboration regarding conducting and evaluating the project «BESØKSVENN MED HUND - GLEDE FOR ELDRE 2015-2017». The project was funded by ExtraStiftelsen (now DAM). This study is based on data collected from that project.

### 5.1 Study design

As the objective. presented in chapter 5, in this study is to explore whether using a dog assisted activity in a group activity may increase engagement by residents in nursing homes, a quantitative approach is suitable as it allows us to measure results before and during group activity and compare these to see if there has been an increase. A quantitative method provides us with data that allows us to measure them (Dalland, 2017). The data is collected by observation of each individual participant before and during the group activity and is then allowing us to see if there are any changes from before the group activity with a dog assisted activity, to during this group activity (Baldi & Moore, 2018).

### 5.2 The participants

The participants in this study are recruited from 4 different nursing homes in the area Follo and Romerike in Akershus county (now Viken county) (Pedersen, 2017). Several nursing homes wards were invited to participate, and 28 residents distributed in 7 groups participated. 75 % of the participants were female (Pedersen, 2017).

### 5.3 The observation tool

The observation tool GOME, used for collecting data, was developed by Cohen-Mansfield from the model “The Comprehensive Process Model of Group Engagement", and the tool in this study is a translated (to Norwegian) version (Cohen-Mansfield, et al., 2017). The tool comprises five subscales where the participants in the group activity are observed individually related to each subscale.

The subscales had a rating between 0-7. The first subscale, duration in the activity refers to how long the residents participate during the activity session. The subscale here went from 0 meaning not attending at all to 6 attending the whole session. Engagement during activity or in the activity refers to how much the residents actively involve themselves in the activity or during activity. The subscale here went from 0 meaning not engaged to 5 meaning engaged most of the time or all the time. How active the residents are during activity is measured in subscale 3. This subscale went from 0 meaning not at all to 4 very much. Subscales 4 and 5 are describing the resident's attitude towards the activity and if they fell asleep during activity. For subscale 4 the rating went from 0 indicating very negative to 7 indicating very positive. For subscale 5 the rating went from 0 meaning not at all to 6 meaning the whole session.

The scales are translated from English to Norwegian by Master student Dani Evensen (Master study in Empowerment and Health Promotion at Oslo Metropolitan University) and Associate Professor Ingeborg Pedersen, Norwegian University of Life Sciences (NMBU) (appendix 3).

### 5.4 Data collection

The data in this study are collected through observation of each individual participant before and during the group activity with the dog assisted activity (Pedersen, 2017). The duration of the observation lasted 15 minutes before and 15 minutes during the activity. For 3 of the groups the activity was performed in the morning and for 4 of the groups it was performed in the afternoon. Master student Dani Evensen (Master study in Empowerment and Health Promotion at Oslo Metropolitan University and Associate Professor Ingeborg Pedersen, Norwegian University of Life Sciences (NMBU) performed the first observation together. Each of them individually observed the same participants before the dog assisted activity started, and then again during the dog assisted activity. Comparing the observations were done afterwards, in that way one could be sure the observations were done in the same way, even if the observations should be performed by others. The remaining observations were conducted by the student alone, using a form (appendix 4). The observations were collected during autumn 2017.

### 5.5 Statistical analysis

The data were sorted in EXCEL and then the data was tested for normality, and I found that the data varied between being normal distributed and not normally distributed. Variable 1, duration in participating in activity/the activity and variable 5, sleep during the activity, were not normally distributed. Variable 2, engagement (during) in activity/the activity, variable 3, active participating in the activity and variable 4, attitude regarding the activity, were all normally distributed. The significance level for all statistical tests were set to 0.05 %.

In this study it is used a matched paired t-test and a Wilcoxon signed rank test. The matched pair t-test are suitable when you are comparing before and after results for the same individual (Baldi & Moore, 2018). The Wilcoxon signed rank test is a non-parametric test (Field, 2005). It is useful for comparing data that are not normally distributed and when the sample sizes are small.

The statistical program JMP Pro 15 (JMP Statistical Discovery from SAS, n.d.) was used.

### 5.6 Ethical considerations

This study is based on The Helsinki declaration which states that "the responsibility for the protection of research subjects must always rest with the physician or other health care professionals and never with the research subjects, even though they have given consent." (The World Medical Association (WMA), 2018). The Norwegian Helseforskingslov also states that it is its aim to promote ethical, professional, and good medical research (Helseforskningsloven, 2008, § 1).

Before the project started a message was sent to Norwegian Centre for Research Data (NSD), and the present study was approved by the Norwegian Centre for Research Data (NSD) nr. 44751.

The nursing homes in this study that wanted to participate informed each department and the residents and their relatives so that all were given the opportunity to decline participation (appendix 1 and 2) (Pedersen (2017). Age, gender, or other demographic variables were not noted, as a precaution regarding anonymity (Pedersen (2017).

## 6.0 Results

### 6.1 The results

See table 1.0 on the next page.

**Table 1.0 Results from the matched paired t-test and the Wilcoxon signed rank test**

| Variables/ observations | Before the activity<br>Mean (SD)<br>N=28 | During the activity<br>Mean (SD)<br>N=28 | Difference<br>During-before<br>Mean<br>N=28 | Standard error | Confidence interval | Matched paired t-test<br>P-value | Wilcoxon signed rank test<br>P-value |
|---|---|---|---|---|---|---|---|
| **Duration** | 5,85 (0,59) | 5,78 (0,56) | -0,07 | 0,13539 | -0,3492-0,20636 | 0,6021 | 0,6511 |
| **Engagement** | 2,14 (1,07) | 3,92 (1,18) | 1,78 | 0,26406 | 1,24391-2,32752 | < ,0001* | < ,0001* |
| **Activity** | 1,75 (0.92) | 3,17 (1,05) | 1,42 | 0,23247 | 0,95158-1,90557 | < ,0001* | < ,0001* |
| **Attitude** | 4,28 (0,71) | 5,92 (1,05) | 1,64 | 0,18697 | 1,25922-2,02649 | < ,0001* | < ,0001* |
| **Sleep** | 0,39 (0,91) | 0,10 (0,41) | - 0,28 | 0,15307 | -0,5998- 0,02837 | 0,0729 | 0,0225* |

***The result is statistically significant, $p \leq 0,05$**

There was a high grade of participation in the group activity with a score of 5,85 (the subscale having 7 as the highest score) before activity and minor reduction to 5,78 during the activity. With a mean difference of -0.07 and the p-value were 0,6021 which means that the result was not statistically significant. The result from the Wilcoxon signed rank test did not show statistically significant results (see table 1.0).

This result regarding engagement changed from a score of 2,14 to 3,92 (the subscale went from 0-5 as the highest). This means that the scores changed from less than 50 % of the time to more than 50 % of the time. The results showed a mean difference of 1,78 and the p-value were < 0.001* meaning the result showed a strong statistical significance. The Wilcoxon signed rank test also gave statistically significant results (see table 1.0).

The active participation in the activity improved from a mean score of 1,75 to a mean score of 3,17 (the subscale went from 0-4 as the highest). Just like the results from det term engagement it was an increase in the active participation among the residents, The results changed from the score some activity to a lot of activity. As the results showed a mean difference of 1,42 and the p-value were < 0.001*, the result showed a strong statistical significance. The Wilcoxon signed rank test also gave statistically significant results (see table 1.0).

Attitude measured before and during activity also showed a higher score during the activity than before, with scores 4,28 before the activity and 5,92 during the activity (the subscale went from 0-7 as the highest). This shows that the residents went from being neutral towards the activity to become positive towards the activity. The mean difference was 1,64 and the p-value were < 0.001* which indicates a strong statistical significance. The Wilcoxon signed rank test also gave statistically significant results (see table 1.0).

The variable sleep showed a score of 0.39 before the activity and a score of 0,10 during activity (the subscale went from 0-7). This result showed a minor reduction regarding sleep. The mean difference was - 0,28. In this variable it was a difference regarding statistically significant results between the matched paired t-test and the Wilcoxon signed rank test. The result from the matched paired t-test were not statistically significant, the p-value was 0,0729, but the result from the Wilcoxon signed rank test showed a statistically significant result, the p-value were 0,0225.

## 7.0 Discussion

The aim of this study has been to explore whether animal assisted interventions such as using dog assisted activities as a group activity may lead to increased engagement among residents at nursing homes. In our study we have shown that there is a statistically significant increase in 4 of 5 variables, engagement, actively involving in the activity, attitude towards the activity and sleep. Duration in participating in the activity did not give statistically significant results.

The numbers for engagement increased from a mean score of 2.14 to a mean score of 3,92, meaning that the results changed from showing engagement less than 50 % of the time to more than 50 % of the time. The mean score for attitude increased from 4,28 to 5,92 and the mean score for actively involving in the activity increased from a mean score of 1,75 to 3,17. For attitude this indicates that there is a positive change from residents being neutral to the activity and to ending up scoring positive towards the activity. The mean score for sleep decreased from 0,39 to 0,10. The score 1 represented very little sleep.

The high scores in the variable, duration in participating in the activity, may indicate that the dog assisted activity was an activity that the residents wanted to participate in. The minor reductions in this variable could come from various reasons as illness or other appointments.

The positive change related to engagement and decreased sleep in our study could be explained by the Flow Theory (Csikszentmihalyi et al. 2014), which describes activities where your attention is so focused on the activity that you are not aware of how time flies. The increased level of engagement and actively involving in the dog assisted activity in our study, may interpret that the activity creates a form of flow by the residents in the nursing homes.

An increased level of engagement as shown in our study, also corresponds well with other studies such as Friedman et al. (2019), Olsen et al. (2016), Yakimicki et. al. (2019) and Wesenberg et al. (2018), Marks & McVilly (2020), Zafra-Tanaka et al. (2019). In these studies, different behavioural issues such as depression, apathy, and mental stress, have shown a decline. In Marks & McVilly (2020) it was an evident decrease in mental stress/salivary CgA in the experimental group compared with the control group. Friedman et. al. (2019), found that the residents looked, touched, and talked to the dog and the more they looked at the dog it affected the score for depression in a positive direction. In Olsen et al

(2016) the score for depression decreased most in the group involving animals. But this study also showed most effects on those with severe dementia. For Wesenberg et al. (2018), the positive effects took place in the group using animals, meaning an increase in positive moods and prosocial actions and for Yakimicki et al. (2019), 11 of 12 studies had positive results regarding prosocial behaviour. Zafra-Tanaka et al. (2019), on the other hand, reported that they in their systematic review, only found one study showing reduced level of apathy.

In Bernstein et al. (2015), Kårefjärd & Nordgren, (2018) it is shown that an increase in social interaction using animal assisted interventions for residents in nursing homes also could lead to an increased level of touching the dog. Touching is an important social stimulus (Bernstein et al., 2015) and may also be seen as an increase in how residents engage and actively involve themselves in the activity. In our study the score for actively involving in the activity increased and may therefore be seen as corresponding with both Bernstein et al. (2015) and Kårefjärd & Nordgren, (2018).

The change in attitude among the residents in our study, going from residents being neutral towards the preceding activity to become more positive towards the dog assisted activity, may also be connected to a greater acceptance of the activity as highlighted in Machova et. al. (2020), Schuurmans et al. (2016), Myren (2010) and Wesenberg et al. (2018). A greater acceptance and improved attitude may be seen as important regarding engagement as it is likely that one would not engage in an activity where one had a negative attitude towards.

As underlined by Lindahl-Jacobsen & Jessen-Winge, (2017), activity alone is not enough. It must be seen in a wider context (Lindahl-Jacobsen & Jessen-Winge, 2017, Cohen-Mansfield et al., 2009). Antonovsky (1987) and Cohen-Mansfield et al. (2009), Cohen-Mansfield (2018) states that there are certain characteristics that are related to a connection with the society, such as the person itself, the group characteristics, and the environmental characteristics. In our study it is shown that the residents engage in the activity, have a strong attitude towards the activity, a high grade of duration in participating in the activity, they are actively involved in the activity and there is very little sleep during activity. This could be interpreted as both the personal characteristic; the characteristics of the group and the environmental characteristics are present. In that way activity can provide value in life. Cohen-Mansfield (2018) also claims that the content of the activity is important for how the residents engage

and involve in the activity and regarding to our statistically significant results this could be a sign that the dog assisted activities are an activity with the right content.

As a part of your sense of coherence, the general resistance resources one has, may decrease by getting older and when having to move into a nursing home (Haugland, 2012, Vik, 2012, Slettebø, 2008, Berry et al. 2012), even if Antonovsky (1987) claims that general resistance resources are stable throughout life. The loss of functions and being more dependent on others (Haugland, 2012, Vik, 2012, Slettebø, 2008, Berry et al., 2012) may lead to the fact that you are not able to release your general resistance resources without help from others. Introducing a dog assistive intervention may counteract this negative development as it could lead to a connection between the residents and the world outside the nursing homes (Wesenberg et al., 2018). A connection with the community is highlighted from Antonovsky (1987) as an important part of your sense of coherence and the ability to use your general resistance resources. As a dog may increase social interactions among people (Johannessen, 2018, Wesenberg et al., 2018, Yakimicki et.al., 2019) it can also be a part of this bridging between the residents and the community outside or inside the nursing home (Wesenberg et al., 2018, Slettebø, 2008).When engagement increases as a result of finding the right activity with the right content (Cohen Mansfield, 2018 Haugland, 2012), it could lead to an decrease in loneliness and sadness and also increase autonomy (Slettebø, 2008, Vik, 2012, Haugland, 2012, Bernstein et. al, 2015, Berry et al., 2012). This may also relate to a better quality of life for the residents (Bernstein et. al., 2015, Kårefjärd & Nordgren, 2018, Marks & McVilly, 2020).

The significant increase in engagement, actively involving in the activity, attitude, and the significant decrease in sleep from our study may give several positive impacts on health and wellbeing. Lindahl-Jacobsen & Jessen-Winge (2017), The Norwegian Institute of Public Health (2020), Haugland, (2012), Slettebø (2008), Vik, (2012), Berry et al. (2012), Kårefjärd & Nordgren (2018), underlines the importance of having access to meaningful activities and social arenas and its impact on quality of life, and in that way the impact on people's health.  Lindahl-Jacobsen & Jessen-Winge (2017) and Cohen-Mansfield (2009) are also expressing a view on the need for humans to be active and engaged, as a basic need. As residents in nursing homes often experience boredom and loneliness as a result of a lack of meaningful activities (Berry et. al. 2012, Cohen-Mansfield 2018, Haugland, 2012, Slettebø,

2008), results from our study shows that introducing dogs assisted activities may create engagement.

As Machova et. al. (2020), Schuurmans et al. (2016), Myren (2010) and Wesenberg et al. (2018) indicate, there seems to be a high grade of acceptability towards using animal assisted activities, among both residents, relatives, and staff in nursing homes. This makes a good starting point for those who are willing to try these interventions as part of the activity offers for residents in nursing homes. On the other hand, Johannesen (2018) highlights that it seems to be essential that the leaders at the nursing home both encourage and support these interventions to make it a success. That could make it harder to implement the animal/dog assisted activities as one gets very much dependent on one leader or the group of leaders at the nursing home and if they are giving their acceptance towards the intervention. As the residents in nursing homes have a wish to do activities themselves (Haugland, 2012, Vik, 2012), the fact that the dog assisted activity requires more efforts, like for instance that the dog must be brought to the nursing homes by a dog handler, could make it more difficult to start using the activity. In that way research showing significant results regarding the use of animal assisted interventions, like our study, may be a help to create a greater acceptance among those who may be less positive. When dogs as a measure regarding public health initiative and health promotion, are also mentioned in government documents such as Meld. St. 19 (2014-2015), it could lead to a greater acceptance by those who are still sceptical.

### 7.1 Methodological discussion

In research it is important to be aware of one's preconception (Dalland, 2017). In this case my interpretation could be influenced by the fact that I am an animal lover and a dog owner.

The fact that the observations the first time were conducted from both the student and the supervisor, and that the observations were compared afterwards is a strength as it increases the chances of getting a valid result (Pedersen, 2017).

The size of the sample in this study is small, 28 participants. Despite this there are significant results for most of the outcome. The strength of this study is that there are statistically significant results on 4 of 5 variables, engagement, activity, attitude towards the activity and sleep. The fact that it is conducted two different tests, the matched paired t-test, and the

Wilcoxon Signed Rank test, and that they have given comparable valid results in most of the outcome measures, may also be seen as a strength.

Another aspect that is highlighted in different articles is the fact that many of the studies regarding animal assisted interventions use different methods which makes it difficult to compare studies (Yakimicki et al., 2019, Marks & McVilly, 2020). None of the articles that are used in this study uses the same method/tool as this study. The tool GOME that is used in this study is relatively new (Cohen- Mansfield et al., 2017), and that could be a reason for why there have not been found studies that have used this tool before.

The literature review includes articles in Scandinavian or English. There may be a risk of selection bias as there have been articles in other languages, such as French and Spanish, that could have been interesting to further explore. This could have given other and valuable information, but both translation resources and economic resources made it difficult to implement these articles. Nuances in a possible translation could also have given a false impression of the articles.

Key words may be interpreted differently, that could give interpretation bias (Malterud, 2017). For instance, could the word engagement be interpreted in different ways as shown by Cohen-Mansfield (2018). The same goes for the word activity which has another meaning in Scandinavian languages then in English language where activity is included in the term occupation (Jonsson & Asaba, 2017). In this study the key words were used in several combinations using or/and in different combinations. The key words included truncation. In that way it should give a more varied result regarding key words. Originally, I did not want to include the word therapy dog as that has a different definition than animal/dog assisted activities (IAHAIO, 2018), but I saw that the term therapy may occur in some articles, so I may have used articles which use the word therapy or therapy dog.

## 8.0 Conclusion

With statistically significant results in 4 out of 5 variables, this study shows that there seem to be a connection between the aim of the study and the results. The aim of this study was to explore whether the use of a dog assisted activity, as a group activity, would increase the engagement among residents in nursing homes. This result may give hope to both residents, their relatives, staff, and society, that it is possible to achieve engagement, good quality of life

and meaningful days with activity, with the right content. And that there is a need for an attitude where one sees activity as a basic need among humans, not only a way that make times go by. This knowledge may also be used in other places then nursing homes.

The studies from animal assisted interventions have in general small sample sizes and the methods and tools used in the studies, vary, which makes it difficult to compare the different studies (Marks &McVilly, 2020). This is also the fact when it comes to this study as it was used a relatively new tool, “GOME”. Furthermore, it could be useful to look closer on some of the terms that are used, such as engagement, activity, and environmental factors. These are all factors that may be interpreted in different ways.

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**Appendix**

1. Informasjon sykehjem, personalet
2. Informasjon sykehjem, beboere og pårørende
3. Oversettelse av begreper
4. Skjema for registrering av GOME

Røde Kors
Besøkshund

# Til personalet

## Evaluering av besøksvenn med hund-tjenesten

Akershus Røde Kors gjennomfører i samarbeid med Norges miljø- og biovitenskapelige universitet (NMBU) en evaluering av besøksvenn med hund-tjenesten ved sykehjem i Akershus. Besøksvenn med hund er et tiltak der frivillige fra Akershus Røde Kors besøker beboere på sykehjem. Hovedmålet med evalueringen er å undersøke om dette har en betydning for hverdagslivet til den som mottar tiltaket, ved å undersøke engasjement, glede og sosial kontakt som tiltaket kan legge til rette for.

Det er allerede besøk av en besøksvenn med hund på denne avdelingen en gang i uken. Dette vil fortsette som vanlig, og gi mulighet for kontakt og kos med hunden, samt samtale med den frivillige og andre i gruppen. Ved å delta i evalueringen vil forsker og/eller en masterstudent vurdere engasjement og deltakelse i aktiviteter for hver enkelt beboer i perioden før besøksvenn med hund-besøket begynner (ca. en halv time) og mens besøksvenn med hund er på avdelingen (også en halv time).

Observasjonene vil bli gjort **en gang** og gjøres etter en standardisert metode som er utviklet for å vurdere engasjement hos eldre personer på sykehjem. Observasjonene vil forgå i fellesareal (dagligstuen) og er anonym. Det vil si at det ikke noteres navn, alder, kjønn eller andre opplysninger som gjør at observasjonen i etterkant kan tilbakeføres til den de er gjort på. Det vil heller ikke noteres navn på sykehjem. Observasjonene vil bli nedtegnet på et skjema, og det vil ikke bli gjort lyd- eller bildeopptak.

Det er laget et tilsvarende informasjonsskriv til beboer og pårørende, og vi ønsker at personalet informerer beboere på den måten dere finner hensiktsmessig og at pårørende gis informasjonsskrivet. Det er frivillig å delta og beboer, eller pårørende på vegne av beboer, kan reservere seg fra å bli observer. Da må personalet notere dette og gi beskjed til den som kommer for å observere.

Dato for observasjon vil bli satt i samarbeid med personalet på avdelingen og hundefører. Personen som skal gjøre observasjonen vil hilse på beboerne og fortelle hva som skal skje, før vedkommende sitter litt på avstand for å observere.

Dersom du har spørsmål til evalueringen, kan du kontakte forsker ved Institutt for folkehelsevitenskap, NMBU, Ingeborg Pedersen eller Naomi Masuda, Akershus Røde Kors

Med vennlig hilsen
Ingeborg og Naomi

ingeborg.pedersen@nmbu.no, telefon: 90502902

Røde Kors
Besøkshund

naomi.masuda@redcross.no

Røde Kors
Besøkshund

# Til beboere og pårørende,

## Evaluering av besøksvenn med hund-tjenesten

Akershus Røde Kors gjennomfører i samarbeid med Norges miljø- og biovitenskapelige universitet (NMBU) en evaluering av besøksvenn med hund-tjenesten ved sykehjem i Akershus. Besøksvenn med hund er et tiltak der frivillige fra Akershus Røde Kors besøker beboere på sykehjem. Hovedmålet med evalueringen er å undersøke om dette har en betydning for hverdagslivet til den som mottar tiltaket, ved å undersøke engasjement, glede og sosial kontakt som tiltaket kan legge til rette for.

Det er allerede besøk av en besøksvenn med hund på denne avdelingen en gang i uken. Dette vil fortsette som vanlig, og gi mulighet for kontakt og kos med hunden, samt samtale med den frivillige og andre i gruppen. Ved å delta i evalueringen vil forsker og/eller en masterstudent vurdere engasjement og deltakelse i aktiviteter for hver enkelt beboer i perioden før besøksvenn med hund-besøket begynner (ca. en halv time) og mens besøksvenn med hund er på avdelingen, (også en halv time).

Observasjonene vil bli gjort **en gang** og gjøres etter en standardisert metode som er utviklet for å vurdere engasjement hos eldre personer på sykehjem. Observasjonene vil forgå i fellesareal (dagligstuen) og er anonym. Det vil si at det **ikke** noteres navn, alder, kjønn eller andre opplysninger som gjør at observasjonen i etterkant kan tilbakeføres til den de er gjort på. Observasjonene vil bli nedtegnet på et skjema, og det vil ikke bli gjort lyd- eller bildeopptak.

Dato for observasjon vil bli satt i samarbeid med personalet og hundefører. Personen som skal gjøre observasjonen vil hilse på beboerne og fortelle hva som skal skje, før vedkommende sitter litt på avstand for å observere.

Det er frivillig å delta i evalueringen, og hvis det er ønske om å ikke bli observert kan du/dere si ifra til personalet. Dette vil ikke få konsekvenser for deltakelse i besøksvenn med hund-tjenesten.

Dersom du har spørsmål til evalueringen, kan du kontakte forsker ved Institutt for folkehelsevitenskap, NMBU, Ingeborg Pedersen.

Med vennlig hilsen
Ingeborg Pedersen

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**Vedlegg 4**

## Oversettelse av begreper fra GOME av Cohen-Mansfield 2017

**Oppmøte varighet:** Skår raten av deltagelse for deltageren for den aktuelle gruppeaktiviteten. (0=ingen av tiden, 1=en liten del av tiden av hele gruppeaktiviteten, 2=mindre enn halvparten, 3=omtrent halvparten, 4=mer enn halvparten, 5=meste parten av tiden, 6=hele tiden)

**Engasjement:** Hvor mye av gruppetiden var deltageren engasjert i gruppeaktiviteten? (Deltager må ikke være aktiv deltagende. Deltager må vise engasjement ved å svare passende på spørsmål, ved å ta gjenstander når det blir gitt, ved øye bevegelser, ved å ikke gjøre noe annet, osv.) (0=ingen av tiden, 1=liten del av tiden, 2=mindre enn halve tiden, 3=omtrent halve tiden, 4=mer enn halve tiden, 5=nesten hele eller hele tiden)

**Aktiv deltagelse:** I hvilken grad var deltager aktiv deltagende i gruppa? Aktiv deltagelse inkluderer: lesing, svar på spørsmål (passende eller ikke), diskutering, synging, motta gjenstander, prøving, osv. Raten bestemmes etter hva som er gjennomførbart for aktiviteten (0=ikke i det hele tatt, 1=litt, 2=moderat mengde, 3=mye, 4=veldig mye)

**Holdning mot aktivitet:** (1=veldig negativ, 2=negativ, 3=noe negativ, 4=nøytral, 5=noe positiv, 6=positiv, 7=veldig positiv)

**Verbal atferd:** Rettet mot seg selv, besøksvenn og/eller hund mens hunden er hos vedkommende. Dette innebærer alt av lyder og språk. Host, grynt, plystring og ord. Jeg tenker at dette kan måles etter positivt/negativt fra 0 – 6. 0 = veldig negativt, 1 = negativt 2 = litt negativt, 3 = nøytralt, 4 = litt positivt, 5 = positivt, 6 = veldig positivt.

**Kroppsspråk:** Jeg tenker at denne kanskje kan byttes med holdninger. Snu seg vekk, vifte med hånden, riste på hodet, lene seg fremover, stryke med hånden på hunden, nikke med hodet, hendene i kors. Måles f.eks. fra 0 – 6 på samme måte som verbal atferd.

**Søvn eller søvnige symptomer:** (0=ikke noe av tiden, 1=liten del av hele gruppetiden, 2=mindre enn halvparten, 3=omtrent halvparten, 4=mer enn halvparten, 5=meste parten av tiden, 6=hele tiden)

*Gruppe engasjement måles på gruppenivå:*

Hvor mange personer deltok i gruppa? (ingen skala, nummerering av antall)

**Skåre av positive interaksjoner** (e.g. smiling, oppmuntre hverandre i gruppa) (0=ingen, 1=litt, 2=Noe, 3=moderat mengde, 4=mange, 5=veldig mange)

**Skåre av negative interaksjoner** (e.g. sinte kommentarer til hverandre i gruppa) (0=ingen, 1=litt, 2=noe, men mindre enn halvparten av interaksjonene, 3=omtrent halvparten, 4=mer enn halve tiden, 5=nesten hele eller hele tiden)

**Antall i gruppa ved start: _____**

**Interaksjoner: positive_____negative_____**

**Før besøksvenn med hund-aktivitet**

**Antall i gruppa ved start: _____**

**Interaksjoner: positive_____negative_____**

**Under besøksvenn med hund aktivitet**

**Vedlegg 5**

| Deltagernr. og beskrivelse | Oppmøte varighet | Engasjement | Aktiv deltakelse | Holdning | Søvn | Oppmøte varighet | Engasjement | Aktiv deltakelse | Holdning | Søvn | Merknad |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Deltager 1 | | | | | | | | | | | |
| Deltager 2 | | | | | | | | | | | |
| Deltager 3 | | | | | | | | | | | |
| Deltager 4 | | | | | | | | | | | |
| Deltager 5 | | | | | | | | | | | |
| Deltager 6 | | | | | | | | | | | |

**Sykehjem nummer: _____ Avdeling: _____ Dato: _____ Tidspunkt: _____**

## Article

# Does dog assisted activities, as a group activity, increase the level of engagement for residents in nursing homes?

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## Abstract

### Background

The deficiency of meaningful activities, social and cultural experiences is a major problem for many of the residents in Norwegian nursing homes. Loneliness, inactivity, depression, apathy, or lack of physical activity is often the consequences. Dogs assisted activities could contribute to reduce the problem.

### Objective

In this study the aim has been to explore whether dog-assisted activities, as a group activity, may increase engagement among residents in nursing homes.

### Method

In this study, observation is used as a method together with the observation tool Group Observational Measurement of Engagement («GOME»). The tool measures each participant individually based on 5 subscales, duration in participating in the activity, engagement in the activity, actively involving in the activity, attitude towards the activity and the amount of sleep during activity. The observations took place before and during the dog assisted activity.

### Results

The results from this study showed statistically significant results in 4 out of 5 variables, engagement in the activity, actively involving in the activity, attitude towards the activity and the amount of sleep during activity. The variable duration in participating in the activity did not show statistically significant results.

### Conclusion

The results showed that animal/dog assisted activities, as a group activity, may increase the engagement among residents in nursing homes.

### Significance

The results may provide a better knowledge about the animal/dog assisted activities and its impact on health and wellbeing.

**Key words:** Animal assisted interventions, animal assisted activities, dog assisted interventions, dog assisted activities, group activity, engagement, elderly, nursing home, dementia

## Introduction

The lack of meaningful activities and poor social and cultural conditions (Haugland, 2012, Vik, 2012, Slettebø, 2008), for the approximately 40000 residents in nursing homes in Norway (Statistics Norway (SSB), 2020), is a major challenge for the persons in question. A large group of the residents in nursing homes, approximately 84 %, suffers from some form of dementia (Norwegian Institute of Public Health, 2021). Dementia is an illness that has an impact on one's ability to be active, affect one's ability to engage and participate in activities and social settings (Nasjonalforeningen for folkehelsen, 2021). As a result, their next of kin are concerned about their relative's wellbeing (Meld. St. 15 (2017-2018), and for society it is a concern since the quality of life for elderly should not be reduced as the elderly starts using public care systems (Meld. St. 15 (2017-2018).

Even if the safety and care that are offered in the nursing home are appreciated by the residents, apathy, inactivity, and loneliness is often something the residents experience when they move from their own home to a nursing home (Berry et. al., 2012, Johannessen, 2018, Friedman et al., 2019, Slettebø. 2008). Even if they are able to walk, a study of residents in nursing homes in USA, showed that the elderly is inactive 94 % during daytime, (Telenius et al., 2017). The fact that residence time in a nursing home can vary from a few weeks to several years, with an approximately average of 2 years (Kjelvik & Jønsberg, 2017), underline the importance of offering meaningful activities and appropriate social and cultural conditions to the residents (Meld. St. 15 (2017-2018), Haugland, 2012).

Both Lindahl-Jacobsen & Jessen-Winge (2017) and Cohen-Mansfield et. al (2017) states that one should see the need of meaningful activities and engagement in life as a basic need for humans. Activity in general has an impact on human health and mortality that could be compared with physical activity (Lindahl-Jacobsen & Jessen-Winge, 2017). Often activity is integrated as a part of people's everyday life, and it can be hard to set a value on its impact (Lindahl-Jacobsen & Jessen-Winge, 2017). When moving into a nursing home, one will experience that even these everyday tasks are taken over by others, like for instance making the bed and preparing meals (Telenius et al., 2019). It is also important to acknowledge the impact environmental factors may have on people's ability to perform activities, as environmental factors can make it harder to participate in activities for some than for others, for instance residents in nursing homes (Lindahl-Jacobsen & Jessen-Winge, 2017). Cohen

Mansfield, (2018), Haugland, (2012) and Vik, (2012) also underline that the content of the activities that are offered matters. For instance, are poetry and reading aloud reported less interesting activities according the residents. In Haugland, 2012 and Vik, 2012 the residents express their wish to perform in activities they can actively involve in by themselves.

In a report from the Norwegian Institute of Public Health (2020), it is highlighted that ability to perform activities and take part in social settings is likely to create good quality of life and therefore should have high priority. The government encourages the different municipalities in Norway to work for an improvement of their activity offers to their elderly population, also including the residents in nursing homes (Meld. St. 15 (2017-2018). The authorities suggest that the elderly at least should experience 1 hour pr. day with activities that elderly choose themselves (Meld. St. 15 (2017-2018).

Animal assisted interventions (AAI) and the subgroup animal assisted activities (AAA) as a part of possible solutions regarding activity offers is already highlighted in Folkehelsemeldingen, Meld. St. 19 (2014-2015). The ability dogs can have to create interactions that can affect humans positively and therefore be health promoting, is especially mentioned in this report. A dog meets humans without prejudice, and they offer humans tactile stimulation, through seeing, hearing, and feeling (Johannessen, 2018, Friedman, et. al., 2019, Bernstein et. al., 2015). Social interactions may also be created as the dog creates attention (Johannessen, 2018, Wesenberg et al., 2018, Yakimicki et.al., 2019).

Several studies have shown beneficial outcomes for various groups, such as residents in nursing homes (Berget et. al., 2018, Wesenberg et. al., 2018, Kårefjärd & Nordgren, 2018, Fine et al., 2019, Marks & McVilly, 2020, Friedman et al., 2019). Animal assisted activities and the results of animal assisted activities have a high grade of acceptance among residents, their relatives, and staff (Machova et. al., 2020). But the number of nursing homes offering animal assisted activities vary (Myren, 2010, Schuurmans et al., 2016).

A number of studies have shown that the often-experienced effects of living in a nursing home, depression, apathy, inactivity (Johannessen, 2018, Friedman et al., 2019, Slettebø. 2008), decreases by using animal assisted interventions/activities (Friedman et al., 2019, Olsen et al., 2016, Yakimicki et. al., 2019). Animal assisted interventions/activities may also

lead to more physical activity among residents when they, together with the dog handler, are able to take the dog for a walk (Johannessen, 2018, Friedman et al., 2019).

The Norwegian Red Cross has animal assisted activities as a part of their activity offers and they have approximately 600 visiting friends with dog service teams ("Besøksvenn med hund") (Red Cross n.d.). These teams are used in both informal and formal settings where there is a wish for more social interaction or closeness. Nursing homes or prisons are often users of these activities, but also private homes could be a part of the activity. Both the dog and the dog handler must attend courses and be certified by the Norwegian Red Cross to become a part of the organisations vising friend with dog service team activity (Red Cross n.d.).

Based on this knowledge our aim has been to explore whether dog-assisted activities as a group activity increases engagement among residents in nursing homes.

**Material and method**

This study is part of the project «BESØKSVENN MED HUND - GLEDE FOR ELDRE 2015-2017» (Pedersen, 2017) where there has been a collaboration between Akershus Røde Kors and Norwegian University of Life Sciences (NMBU). Data has been collected through the project and then the results has been evaluated. ExtraStiftelsen (now DAM) funded the project.

**Study design**

A quantitative approach, using observation, has been used in this study as the aim is to measure possible improvements of engagement among residents in nursing homes before and during group activity including a visiting friend with dog service.

**The participants**

Different nursing homes wards were given the opportunity to participate in the project. 28 participants from 4 nursing homes in the area Follo and Romerike in Akershus county (now Viken county) agreed to participate in the project (Pedersen, 2017). The participants were divided in 7 groups whereas 75 % were women (Pedersen, 2017).

## The observation tool

“The Comprehensive Process Model of Group Engagement" (Cohen-Mansfield et al. 2017), and its observational tool (GOME) were used in this study. The tool is divided into five subscales where each participant separately/independently is observed related to each subscale (Cohen-Mansfield et al. 2017). The subscales are *(duration in) participating in activity/the activity, engagement (during) in activity/the activity, active participation in the activity, attitude regarding the activity and sleep during the activity* (Cohen-Mansfield et al. 2017).

The original English document explaining the subscales has been translated into Norwegian by Master student Dani Evensen (Master study in Empowerment and Health Promotion at Oslo Metropolitan University and Associate Professor Ingeborg Pedersen, Norwegian University of Life Sciences (NMBU) (appendix 3).

The subscales had a rating between 0-7 (Turid Sælid, from the kappe). The first subscale, *duration in the activity* refers to how long the residents participate during the activity session. The subscale here went from 0 meaning not attending at all to 6 attending the whole session. Engagement during activity or in the activity refers to how much the residents actively involve themselves in the activity or during activity. The subscale here went from 0 meaning not engaged to 5 meaning engaged most of the time or all the time. How active the residents are during activity is measured in subscale 3. This subscale went from 0 meaning not at all to 4 very much. Subscales 4 and 5 are describing the resident’s attitude towards the activity and if they fell asleep during activity. For subscale 4 the rating went from 0 indicating very negative to 7 indicating very positive. For subscale 5 the rating went from 0 meaning not at all to 6 meaning the whole session (Turid Sælid, from the kappe).

## Data collection

The procedure for observation included observation 15 minutes before the dog assisted activity and 15 minutes during the dog assisted activity (Pedersen, 2017). Observing the group activity before and during activity made it possible to see if there were any changes between these two observation times. The observation took place in the morning (3 of the groups) and in the afternoon (4 of the groups) (Pedersen, 2017).

Conducting the first observations were done together by master student Dani Evensen (Master study in Empowerment and Health Promotion at Oslo Metropolitan University [TS49]) and Associate Professor Ingeborg Pedersen, Norwegian University of Life Sciences (NMBU) (Pedersen, 2017). The observations were performed separately by the master student and the Associated Professor, observing each participant both before and during the dog assisted activity. Comparing the observations after the activity were done to ensure that the observations were interpreted alike, if replicated by others. The master student then did the following observations alone. A special form was used to gather the results from the observations (appendix 4) (Pedersen, 2017). Conducting the data took place autumn 2017.

**Statistical analysis**

As the first task sorting the data in EXCEL were done and furthermore it was performed tests regarding normality. The tests regarding normality showed that the different variables differed between normal and not normal distribution. The variables that were not normally distributed were variable 1, duration in participating in activity/the activity and variable 5, sleep during the activity. The remaining variables were normally distributed. This includes variable 2, engagement (during) in activity/the activity, variable 3, active participating in the activity and variable 4, attitude regarding the activity.

The study includes 2 different tests, a matched paired t-test (for normal distributed variables), and a Wilcoxon signed rank test (for non-normal distributed variables). As the study is comparing results measured before and during activity for each participant the use of a matched paired t-test is considered useful (Baldi & Moore, 2018). Furthermore, using a non-parametric test, as the Wilcoxon signed rank test, is suitable as the study has a small sample size and includes not normally distributed variables (Field, 2005). This allows us to compare the data.

The study used the statistical program JMP Pro 15 (JMP Statistical Discovery from SAS, n.d.). All the statistical tests had a significance level of 0.05 %.

## Ethical considerations

The basis for the study is The Helsinki Declaration (The World Medical Association (WMA), 2018), the Norwegian Helseforskningslov (Helseforskningsloven, 2008, § 1) and the study is authorised by the Norwegian Centre for Research Data (NSD), nr. 44751.

An information letter was presented for all participants, their relatives, and the nursing homes administration (Pedersen (2017). This made it possible to reject participation. The study included anonymity for all involved (Pedersen (2017).

## Results

See table 1.0 on the next page.

**Table 1.0 Results from the matched paired t-test and the Wilcoxon signed rank test**

| Variables/ observations | Before the activity<br>Mean (SD)<br>N=28 | During the activity<br>Mean (SD)<br>N=28 | Difference<br>During-before<br>Mean<br>N=28 | Standard error | Confidence interval | Matched paired t-test<br>P-value | Wilcoxon signed rank test<br>P-value |
|---|---|---|---|---|---|---|---|
| **Duration** | 5,85 (0,59) | 5,78 (0,56) | -0,07 | 0,13539 | -0,3492-0,20636 | 0,6021 | 0,6511 |
| **Engagement** | 2,14 (1,07) | 3,92 (1,18) | 1,78 | 0,26406 | 1,24391-2,32752 | < ,0001* | < ,0001* |
| **Activity** | 1,75 (0.92) | 3,17 (1,05) | 1,42 | 0,23247 | 0,95158-1,90557 | < ,0001* | < ,0001* |
| **Attitude** | 4,28 (0,71) | 5,92 (1,05) | 1,64 | 0,18697 | 1,25922-2,02649 | < ,0001* | < ,0001* |
| **Sleep** | 0,39 (0,91) | 0,10 (0,41) | - 0,28 | 0,15307 | -0,5998- 0,02837 | 0,0729 | 0,0225* |

***The result is statistically significant, $p \leq 0,05$**

The matched paired t-test (p-value 0,6021) and the Wilcoxon signed rank test (p-value 0,6511) showed the same not statistically results for the variable duration in participating in the activity. But the matched paired t-test results indicated that the duration in participating in the activity were big as the results showed a mean score of 5,85 before the activity and 5,78 during the activity. The reduction regarding the score during activity was small. The mean difference was -0,07. The subscale went from 0-7, where 7 was the highest score.

For both the matched paired t-test (< ,0001*) and the Wilcoxon signed rank test (< ,0001*) the results regarding the variable engagement showed a strong statistically significant result. In the matched paired t-test the result increased from a mean score of 2,14 to 3,92. The subscale had a rating from 0 to-5 as the highest. This shows that the results changed the participants' engagement to more than 50 % of the time, increasing from less than 50 % of the time. The mean difference was 1,78.

The active involving in the activity also showed a statically significant result for both the matched paired t-test (< ,0001*) and for the Wilcoxon signed rank test (< ,0001*). The mean score increased from 1,75 to 3,17. The subscale scores went from 0-4, where 4 were the highest. As in the variable engagement, in this variable the participants increased their activity from participating in some activity to participating a lot in the activity. The mean difference was 1,42.

The matched paired t-test (< ,0001*) and the Wilcoxon signed rank test (< ,0001*) regarding attitude towards the activity had also strong statistically significant results. Measuring attitude towards the activity showed a change in attitude towards the activity before the activity, mean score 4,28, to a mean score of 5,92 during the activity. The subscale ratings were 0-7, with 7 as the highest. This increase in attitude towards the activity among the residents, means that the residents changed their attitude towards the activity to positive, when earlier feeling neutral towards the activity. Mean difference was 1,64.

In the variable sleep there was a difference between the matched paired t-test and the Wilcoxon signed rank test regarding statistical significance. The matched paired t-test gave a not statically significant result, 0,0729, but the Wilcoxon signed rank test gave a statistically significant result, 0,0225*. The remaining results from the matched paired t-test gave a mean

score of 0,39 before the activity and a mean score of 0,10 during the activity. The mean difference here was -0,28.

## Discussion

In this study the intension has been to look into if animal assisted interventions could increase engagement among residents in nursing homes, using dog assisted activities as a group activity. The results from our study gave statistically significant results for most of the variables. That include the variable engagement, actively involving in the activity, attitude towards the activity and sleep. In the variable duration in the activity the results were not statistically significant.

The one variable showing not statically significant results, duration in participating in the activity, had a mean score of 5,85 before the activity and a mean score of 5,78 during the activity. As the highest score on the subscale were 6 for this variable, this high mean score may indicate that the residents had a wish to participate in the activity.

The variable engagement changed from residents being engaged less than 50 % of the time before activity, to more than 50 % of the time during activity. This may relate with other studies such as Friedman et al. (2019), Yakimicki et. al. (2019) and Wesenberg et al. (2018). In these studies, it was found that prosocial behaviour increased using animals. For instance, did Yakimicki et. al. (2019), in their systematic review, get a positive result on prosocial behaviour in 11 of 12 studies. Friedman et al. (2019), had an increase in residents' interaction trough looking, touching, and talking to the dog. This also gave a lower score for depression.

As in Friedman et al. (2019), Bernstein et al. (2015) and Kårefjärd & Nordgren, (2018), reports that when social interaction elevates, as a result of using animal assisted interventions, one could see a possibly positive change in residents touching the dog. Bernstein et al. 2015 states that touching is an important social stimulus. This may therefore be interpreted as an increase in how residents actively involve in the activity. And in that way, it could be corresponding with the results in the variable actively involving from our study. In this variable the results changed from residents being actively involving some of the time to a most of the time.

For the variable attitude, in our study, the residents changed from being neutral towards the activity to being positive towards the activity. This result may correspond with Machova et. al. (2020), which reports a high acceptance towards animal assisted activities. In Machova et. al. (2020), 92 % of the responders actually reported their interest of participating in an animal assisted interventions using a dog. In Schuurmans et al. (2016), it is highlighted that the number of nursing homes refusing animal assisted activities has decreased. This may be seen as a change in the attitude towards the animal assisted interventions.

For the result in the variable, sleep, it was a minor reduction. The result was statistically significant. It is likely to interpret that a decrease in sleep may be connected to more positive scores for attitudes towards the activity, how much one actively involves in the activity and how one engages in the activity.

The Norwegian Institute of Public Health (2020) states the importance of being able to participate in activities and social occasions for residents in nursing homes, as it is a premisses for good quality of life. Lindahl-Jacobsen & Jessen-Winge (2017) and Cohen-Mansfield et. al (2017) highlights how meaningful activities and engagement in life may be a basic need for humans. Cohen-Mansfield, (2018), Haugland, (2012) and Vik, (2012) refers to the importance of being aware that the content of the activities that are offered matters and Haugland (2012) and Vik (2012), also underlines how important it is to respect the residents wishes of being able to actively involve in the activities themselves.

**Strengths and limitations**

The findings of statistically significant results in 4 out of 5 variables, engagement, activity, attitude towards the activity shows a strength regarding this study.

The use of two different test, the matched paired t-test, and the Wilcoxon signed-rank test, may be seen as a strength, as they have provided us with comparable valid results in 4 out of 5 variables, engagement, activity, attitude towards the activity and sleep. On the other side, a sample size of 28 participants, are considered as a small sample size, but then statistically significant results for most of the outcome is a strength.

Studies of animal assisted interventions varies regarding the use of methods which makes it harder comparing studies (Yakimicki et al., 2019, Marks & McVilly, 2020). As the tool "GOME" used in this study were relatively new (Cohen- Mansfield et al., 2017), we did not find other studies that made it possibly to compare with our study when it comes to the use of tool.

The risk of selection bias may be present as we only included articles in Scandinavian and English. Interpretation bias because of the use of key words is also something one should be aware of (Malterud, 2017, Cohen-Mansfield, 2018). In this study the words engagement, activity and environmental could have different meaning for others then us. The key words, in this study, are used in different combination with or/and.

**Conclusion**

As the aim of this study were to investigate if a dog assisted intervention, as a group activity, may increase engagement among residents in nursing homes, our statistically significant results may give positive signals in that direction. An increased level of engagement could have a positive impact of resident's health and wellbeing. Engaging in meaningful activities is related to a good quality of life (The Norwegian Institute of Public Health, 2020). This requires offering activity with the right content and activities that the residents could actively involve in themselves, as this is a wish among the residents (Cohen-Mansfield, 2018), Haugland, 2012 and Vik, 2012)

There is a need for more research regarding this subject as the different tools and models makes it hard to compare the various studies, and the sample sizes in general are small (Marks & McVilly, 2020).

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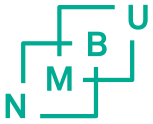


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