



Norwegian University of Life Sciences  
Faculty of Landscape and Society  
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# **Prevocational training on care farms for people outside the work force – the self-determination theory perspective**

Arbeidsforberedende trening på gård for mennesker utenfor arbeidslivet – perspektiver fra selvbestemmelsesteorien

Lina H. Ellingsen-Dalskau



# Prevocational training on care farms for people outside the work force – the self-determination theory perspective

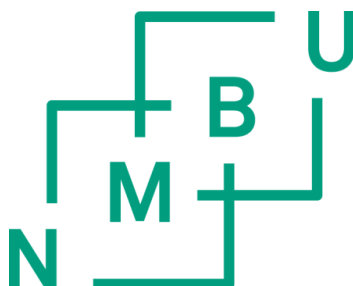
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Department of Public Health Science  
Faculty of Landscape and Society  
Norwegian University of Life Sciences

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## Summary

*Background and aim.* There is a concern in Norway that a large part of the population is out of work. Having the possibility to participate in working life, is important for ensuring good health, well-being and an acceptable standard of living. The two most commonly reported diagnoses for long-term sick-leave and disability pension in Norway are related to musculoskeletal and psychological subjective health complaints. People that have been outside the workforce for a long time, is one of the groups with the absolute highest number of subjective health complaints. A high degree of such complaints, may lead to low function and health related problems.

According to the World Health Organization, health promotion should enable people to increase control over their own health. Prevocational training specifically aims to help people that have been outside the workforce for a long time return to work. In Norway, several care farms offer prevocational training as a health promoting service based on normal farming activity. However, there is little systematic knowledge about possible health promoting elements in the prevocational training context on care farms. In addition, there is a need for research that describes clients participating in prevocational training on care farms, and that give a better understanding of how subjective health complaints may be related to satisfaction with life for these individuals. New insight about the clients and possible health promoting elements in the prevocational training context, could contribute to the development of these services, which essentially also could facilitate return to work for the clients. The self-determination theory describes underlying psychological mechanisms important for motivation, function and well-being. This theoretical framework therefore, can give useful insight for understanding the relationship between subjective health complaints and satisfaction with life, and for understanding possible health promoting elements in the prevocational care farm context. The main aim of the thesis therefore, was to gain a better understanding of clients in prevocational training on care farms and of the possible health promoting elements in the care farm context by using the self-determination theory.

*Methods.* A mixed method design was used. First, a national cross-sectional study, was conducted where 201 adult participants in prevocational training on care farms answered a questionnaire including questions providing demographic and background information, questions about the stay on the care farm, perception of being a useful colleague, the social community on the farm, experiencing nature and animals, and standardised instruments on subjective health complaints, basic psychological need satisfaction, and satisfaction with life. Structural equation models were constructed to investigate

relationships between variables. Next, ten semi structured qualitative interviews with adult participants attending prevocational training on care farms were conducted. Transcripts were analysed using a modified version of systematic text condensation.

*Results.* Results showed that participants in prevocational training on care farms were relatively young, most were unmarried, had a low level of education and had been out of work for a long time. They had a high prevalence of subjective health complaints and a low level of satisfaction with life. Further, the results showed that experiencing psychological health complaints was negatively associated with satisfaction with life, and basic psychological need satisfaction was found to be one important mediator in this relationship. Next, the combination of findings presented in Paper II (including 194 participants answering the survey), and Paper III (including 10 interviews), showed that feeling like a useful colleague, was positively associated with satisfaction of the basic psychological need for competence. Working with animals was the most commonly performed task on the farm for the majority of participants, and both working with animals and being in nature were described as activities that decreased stress and offered a sense of peace for the participants in the qualitative interviews. However, working with animals and being in nature was unrelated to any of the three basic psychological needs in the structural equation model. Further, results showed that client group belonging was positively associated with the basic psychological needs for relatedness and autonomy. The qualitative study showed that participants experiences of receiving understanding and being acknowledged, as well as having the possibility to support others, was described as important in the relationship amongst the clients. Last, support from the farmer was positively associated with the satisfaction of all three basic psychological needs, and the farmer was also described in the qualitative study as a person who provided understanding, acknowledgement, guidance, and positive feedback to the participants.

*Conclusion.* Participants in prevocational training on care farms seem to be a vulnerable group that may have a challenging return to work process ahead of them. In addition, their high degree of psychological health complaints influence basic psychological need satisfaction negatively, which was positively associated with satisfaction with life. Based on the theoretical understanding of SDT, enhancing basic psychological need satisfaction could therefore, be important for counteracting some of the negative consequences related to having a high degree of psychological health complaints for the clients. Further, it appears that a supportive farmer may hold an autonomy supportive role for the clients, which implies that the farmer may be the most important element in the prevocational training context supporting basic psychological need satisfaction for the clients. From a theoretical standpoint, experiencing

satisfaction of basic psychological needs not only has the potential to facilitate function and well-being for the clients, but can also lead to a more autonomous motivation towards resuming work. Further, basic psychological need satisfaction may create opportunities for clients to engage freely in activities enabling them to follow interest, grow and develop. Overall, experiencing basic psychological need satisfaction therefore reflect resources that may enable clients to have a higher degree of control over their own health, which is the main aim of health promotion. Therefore, strengthening elements in the prevocational training context that are positively associated with basic psychological need satisfaction, may be important to facilitate health promotion for the clients, thereby also aiding the possibly challenging return to work process for these individuals.



## Sammendrag

*Bakgrunn og formål.* Det er bekymringsfullt at en stor andel av den norske befolkningen står utenfor arbeidslivet. Muligheten til å delta i arbeidslivet er viktig for å sikre god helse, livskvalitet og gode levekår. De to vanligst diagnosene som fører til langtidssykefravær og uførhet i Norge er relatert til de subjektive helseplagene muskel- og skjelettplager og psykologiske plager. Mennesker som har vært lenge utenfor arbeidslivet og som er avhengige av trygdeytelser, er en av gruppene med høyest forekomst av symptomer i befolkningen. En høy forekomst av slike plager kan lede til dårlig funksjon og livskvalitet.

I følge Verdens Helseorganisasjon er helsefremming prosessen som gjør folk i stand til å bedre og bevare sin egen helse. Arbeidsforberedende trening har som målsetting å hjelpe mennesker som har vært lenge ute av arbeidslivet med å komme tilbake i arbeid. I Norge er det en rekke gårder som tilbyr arbeidsforberedende trening som et helsefremmende tiltak, basert på deltakelse i vanlige gårdsaktiviteter. Imidlertid er det i dag lite systematisk kunnskap om mulige helsefremmende elementer i den arbeidsforberedende treningskonteksten på gård. I tillegg er det et behov for forskning som beskriver brukerne som deltar i arbeidsforberedende trening på gård, og som kan gi en bedre forståelse av forholdet mellom subjektive helseplager og tilfredshet med livet. Ny innsikt om brukerne og mulige helsefremmende elementer i den arbeidsforberedende konteksten, kan bidra til en videre utvikling av disse tilbudene, som også kan være viktig for å fremme tilbakeføring til arbeidslivet for brukerne. Selvbestemmelsesteorien beskriver viktige underliggende psykologiske mekanismer for motivasjon, funksjon og livskvalitet (well-being). Dette teoretiske rammeverket kan derfor gi nyttig innsikt for å forstå forholdet mellom subjektive helseplager og tilfredshet med livet, og for å forstå mulige helsefremmende elementer i den arbeidsforberedende konteksten på gård. Formålet med denne forskningen var derfor å få en bedre forståelse av brukerne i arbeidsforberedende trening på gård og av de mulige helsefremmende elementene i gårdskonteksten ved å bruke selvbestemmelsesteorien.

*Metode.* En kombinasjon av metoder (mixed methods) ble benyttet. Først ble en nasjonal tværnittstudie gjennomført, der 201 deltakere i arbeidsforberedende trening på gård besvarte et spørreskjema med spørsmål som omfattet demografisk og bakgrunnsinformasjon, spørsmål om deltakelsen på gården, opplevelsen av å være en nyttig arbeidskollega, de sosiale relasjonene, og opplevelsen av natur og dyr, i tillegg til standardiserte instrumenter for å måle subjektive helseplager, tilfredstillelse av grunnleggende psykologiske behov og tilfredshet med livet. Strukturelle

ligningsmodeller ble benyttet for å undersøke sammenhenger mellom variabler. Videre ble det også gjennomført ti semistrukturerte intervjuer med voksne deltakere i arbeidsforberedende trening på gård. Transkripsjonene ble analysert med en modifisert versjon av systematisk tekstkondensering.

*Resultater.* Resultatene viste at brukere i arbeidsforberedende trening på gård er relativt unge, flesteparten var ugifte, hadde et lavt utdanningsnivå og hadde vært ute av arbeidslivet i en lang periode. De hadde en høy prevalens av subjektive helseplager og et lavt nivå av tilfredshet med livet. Videre, viste resultatene at det å ha psykologiske helseplager var negativt assosiert med tilfredshet med live og at tilfredsstillelse av grunnleggende psykologiske behov var en viktig mediator i dette forholdet. Videre, viste de kombinerte resultatene presentert i Artikkel II (basert på 194 besvarelser på spørreundersøkelsen) og artikkel III (basert på 10 intervjuer), at opplevelsen av å være en nyttig kollega var positivt relatert til tilfredsstillelse av det grunnleggende psykologiske behovet for kompetanse. Arbeid med dyr var den vanligste arbeidsoppgaven for flesteparten av brukerne, og både arbeidet med dyr og å oppleve naturen ble beskrevet som stressreduserende og beroligende i de kvalitative intervjuene. Men, arbeid med dyr og opplevelse av nature var ikke assosiert med tilfredsstillelse av noen av de grunnleggende psykologiske behovene i den strukturelle ligningsmodellen. Resultatene viste også at opplevelsen av tilhørighet til gruppen av andre brukere på gården var positivt relater til tilfredsstillelse av de grunnleggende psykologiske behovene for tilhørighet og autonomi. Den kvalitative studien viset også at forholdet brukerne imellom var basert både på å kunne gi, og å kunne få, forståelse og anerkjennelse av andre. Støtte fra gårdbrukeren var positivt relatert til behovstilfredsstillelse av alle de tre grunnleggende psykologiske behovene kompetanse, tilhørighet og autonomi, og gårdbrukeren ble også beskrevet som en person som ga forståelse, anerkjennelse, veiledning og positive tilbakemeldinger til brukerne i den kvalitative studien.

*Konklusjon.* Brukere i arbeidsforberedende trening på gård virker å være en sårbar gruppe som kan ha en utfordrende tilbakeføringsprosess til arbeidslivet foran seg. I tillegg virker det som deres høye forekomst av psykologiske helseplager påvirker tilfredsstillelse av de grunnleggende psykologiske behovene negativt, som igjen var positivt assosiert med tilfredshet med livet. Basert på selvbestemmelsesteorien, kan derfor en økt tilfredsstillelse av de grunnleggende psykologiske behovene være viktig for å motvirke noen av de negative konsekvensen en høy forekomst av psykologiske helseplager medfører for brukerne. Videre, kan det virke som en støttende gårdbruker kan være en autonomistøttende person for brukerne, som også indikerer at gårdbrukeren kan være det viktigste elementet i den arbeidsforberedende treingskonteksten på gården for å støtte tilfredsstillelse av de

grunnleggende psykologiske behovene for brukerne. Fra et teoretisk ståsted, vil tilfredstillelse av de grunnleggende psykologiske behovene ikke bare kunne lede til funksjon og livskvalitet for brukerne, men kan også lede til en mer autonom motivasjon for å komme tilbake i arbeid. I tillegg kan tilfredstillelse av grunnleggende psykologiske behov kunne gjøre det mulig for brukerne å engasjere seg fritt i aktiviteter der de kan følge sine interesser, vokse og utvikle seg. Å oppleve grunnleggende psykologisk behovstfredstillelse reflektere derfor ressurser som kan gjør folk i stand til å bedre og bevare sin egen helse, som er målet med helsefremming. Å styrker elementer i den arbeidsforberedende treningskonteksten som er positivt assosiert med grunnleggende psykologisk behovstfredstillelse, kan derfor være viktig for at brukerne skal oppleve helsefremming, som igjen kan hjelpe brukerne i den vanskelige veien tilbake til arbeidslivet.

## List of papers

- Paper I      Ellingsen-Dalskau, L. H., Berget, B., Tellnes, G. & Ihlebæk, C., (2017). Satisfaction of basic psychological needs as a mediator in the relationship between subjective health complaints and satisfaction with life for people out of work. Manuscript.
- Paper II     Ellingsen-Dalskau, L. H., Berget, B., Pedersen, I., Tellnes, G. & Ihlebæk, C., (2016). Understanding how prevocational training on care farms can lead to functioning, motivation and well-being, *Disability and Rehabilitation* 38 (25), 2504-2513.
- Paper III    Ellingsen-Dalskau, L. H., Morken, M., Berget, B. & Pedersen, I., (2016). Autonomy support and need satisfaction in prevocational programs on care farms: The self-determination theory perspective. *Work* 53, 73–85.



## Abbreviations

AAP	Work Assessment Allowance
CATS	Cognitive Activation Theory of Stress
NAV	Norwegian Labour and Welfare Administration
RCT	Randomised Controlled Trial
SDT	Self-Determination Theory
SEM	Structural Equation Model
SES	Socio-Economic Status
SHC	Subjective Health Complaints
WHO	World Health Organization



# 1. Introduction

In Norway, a large part of the population is out of work and dependent on different welfare arrangements from the Norwegian Labour and Welfare Administration (NAV) (OECD, 2010). This is a concern, because being outside the workforce may have severe negative consequences for the individual's health, well-being and standard of living. This is also why employment is one of the main drives for the social gradient in health related issues (Waddell and Burton, 2006). Increasing return to work for people outside the workforce therefore, is an important public health issue, as it could decrease the inequalities in health that may lead to individual suffering (Marmot et al., 1995; Waddell and Burton, 2006).

The main reported diagnoses causing long-term sick-leave and disability pension in Norway are related to musculoskeletal and psychological health complaints (Waddell, 2006; Ihlebæk et al., 2007; Brage et al., 2010). Such complaints, labelled subjective health complaints (SHC) (Eriksen and Ihlebæk, 2002), are commonly reported in the general population (Eriksen et al., 1999; Ihlebæk et al., 2002; Indregard et al., 2013). SHC are usually not disabling, but severe and long-lasting SHC have been shown to have several negative consequences for the individual's function and well-being (Tveito et al., 2002; Tveito et al., 2004; Kamaleri et al., 2008a; Kamaleri et al., 2008b; 2009; Brage et al., 2010; Roelen et al., 2010; Bruusgaard et al., 2012; Poulsen et al., 2013). People outside the workforce is one of the groups reporting the highest number of symptoms in the population (Kjeldsberg et al., 2013).

According to the World Health Organization (WHO), health is defined as a state of complete physical, mental and social well-being and not just the absence of disease or infirmity (WHO, 1946). However, in relation to health promotion, health is understood less as a state and more as the resources that allow people to lead individually, socially and economically productive lives. In the Ottawa Charter for Health Promotion health is defined as "... a resource for everyday life, not the object for living. It is a positive concept emphasising social and personal resources as well as physical capabilities" (WHO, 1998). Further, health promotion is defined as "... the process of enabling people to increase control over, and to improve their health", and covers a wide range of interventions designed to benefit and protect individuals' health and quality of life (WHO, 2016b). Prevocational training specifically aims to help people that have been outside the workforce for a long time, by offering a temporary work environment with the intention of improving vocational and social skills that enable them to move on to competitive employment at a later stage (Crowther et al., 2001; Rossler, 2006; Iancu et al., 2014). In Norway, a

number of care farms offer prevocational training, where a commercial farm is used to promote health by offering normal farming activity (Hassink and van Dijk, 2006). Care farming is part of the Green care concept which has a particular focus on nature to promote human mental and physical health (Sempik et al., 2010). Sempik et al. (2010) underscore the relevance of the health promotion perspective within the Green care field, as it captures the overall focus of Green care services to increase coping and make clients active in maintaining and developing their own health (Sempik et al., 2010). In addition, one of five actions to promote health outlined in the Ottawa Charter for Health Promotion is to create supportive environments for health (WHO 1986). Supportive environments for health should protect individuals from threats to health and give individuals the possibility to improve abilities and become self-reliant in taking care of their own health. Sempik et al. (2010) specifically state that a supportive environment for health within the Green care perspective can be understood as providing green environments that give individuals the opportunity to experience support from others and develop skills and capabilities.

Currently, there is scarce systematic knowledge about health promotion for clients in prevocational training on active care farms. In addition, there is a need for research that systematically describes clients participating in prevocational training on care farms, and that investigates the relationship between SHC and satisfaction with life for these individuals. More information about the clients as well as insight about possible health promoting elements in the prevocational training context, could contribute to the development of these services, which essentially also could facilitate return to work for the clients.

The self-determination theory (SDT) (Deci and Ryan, 2000) represents a relevant framework for gaining a better understanding of clients in prevocational training on care farms and of possible health promoting elements in the prevocational training context. First, SDT postulates that all humans need to feel competent, related, and autonomous (Deci and Ryan, 2000). Deci and Ryan (2008b) state that the concept of human needs may be extremely useful because it provides a way of understanding how various factors and social forces in the context may affect motivation, behavior, affect, and well-being. Dimensions of the environment that satisfy these needs would *a priori*, be expected to have these positive consequences for the individual (Deci and Ryan, 2000; Ryan and Deci, 2000b; Baard et al., 2004; Gagné and Deci, 2005; Deci and Ryan, 2008a; b). In relation to health promotion, being motivated, functioning and experiencing well-being may reflect resources that enable individuals to take more control over their own health. Basic psychological need satisfaction therefore, represents a relevant

psychological mechanism that may provide a better understanding of the relationship between SHC and satisfaction with life for the clients. In addition, investigating how specific elements in the care farm context might influence basic psychological need satisfaction may also enhance the understanding of possible health promoting elements in the prevocational training context on care farms.

The main aim of the thesis therefore was to gain a better understanding of clients in prevocational training on care farms and of the possible health promoting elements in the care farm context by using the self-determination theory.

### 1.1 The value of work

Even though much research has focused on the negative consequences of being out of work, the positive value of participating in work has also been recognised. Work offers economical resources important for material well-being, and provides the individual with an opportunity to participate fully in society (Waddell and Burton, 2006). Work can also be health promoting by providing a social identity, and increasing competence, self-worth and self-esteem (Shepherd, 1989; Waddell and Burton, 2006; Dunn et al., 2008; van Niekerk, 2009). Further, work gives individuals the possibility to experience satisfaction and accomplishment, thereby enhancing well-being (Blustein, 2008). Even though it has been found that certain aspects of work may at times pose a risk to the individuals' health, work most often represents an important arena for satisfying psychosocial needs important for psychological functioning (Waddell and Burton, 2006).

On the other hand, falling out of work may be negative for physical and mental health (Claussen, 1999; Roos et al., 2005a; Roos et al., 2005b; Overland et al., 2006; Waddell and Burton, 2006), self-esteem (Blustein, 2008) and well-being (Korpi, 1997; McKee-Ryan et al., 2005). Worklessness has been found to create a state of deprivation and distress (Paul and Moser, 2009), and increase symptoms of depression and anxiety (Claussen et al., 1993; Hammer, 1993; Virtanen et al., 2003; Overland et al., 2006; Waddell and Burton, 2006; Blustein, 2008). This also may explain why being out of work has been related to a range of serious problems, including social isolation, relational conflicts, substance abuse (Blustein, 2008), poverty, stigma (Bartley, 1994), and an increased mortality rate (Bartley, 1994; Gerdtham and Johannesson, 2003; Ahs and Westerling, 2006; Waddell and Burton, 2006)

Two mechanisms attempt to explain the relationship between employment and health. The social causation hypothesis proposes that work leads to health benefits, and the social selection hypothesis

suggests that health is a necessary condition for work participation (Rueda et al., 2012). A review by Waddell & Burton (2006) found that the relationship between employment and health to a large extent could be explained by the social causal hypothesis. This was also supported by Rueda et al. (2012), who found that most of the longitudinal studies included in their review, showed a positive association between returning to work and health outcomes. However, they also found some evidence supporting the social selection hypothesis, where poor health interferes with people's possibility of returning to work (Rueda et al., 2012). This suggests that the two mechanisms may be mutually reinforcing processes (Rueda et al., 2012), where falling out of work may lead to poor health, which again could hinder return to work. Øyeflaten et al. (2012) findings, that the return to work process for people who have been out of work for a long time is both complex and long lasting, also strengthens this notion.

Having the possibility to participate in working life therefore, is important for ensuring good health, well-being and standard of living (Waddell and Burton, 2006). This may also explain why employment, together with socio-economic status (SES), is a main drive for the social gradient in psychological and mental health, and mortality (Waddell and Burton, 2006). Marmot & Bell (2012) describe the severe consequences related to health inequalities, and point to the importance of addressing the unfair distribution of social determinants in order to decrease this social gradient in health outcomes. Because work participation can be considered one important social determinant for health, facilitating return to work for people outside the workforce also reflects an important public health issue.

### 1.1.2 Function and well-being in the work context

The SDT (see section 1.6 for a thorough description) has been used extensively in research related to the work context to understand how the work environment influences function and well-being for employees. This research is based on SDT's assumption that all humans have the basic psychological needs to feel competent, related, and autonomous, and that the satisfaction of these needs facilitate optimal motivation (also referred to as autonomous motivation), function and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b)

The importance of experiencing need satisfaction and autonomous motivation in the work context has been supported by findings linking these to employee function (Lynch et al., 2005; Trépanier et al., 2015; Deci et al., 2017), job performance (Baard et al., 2004; Gagné and Deci, 2005; Gillet et al., 2013; Trépanier et al., 2015), work engagement and commitment (Gagné and Deci, 2005; Fernet et al., 2012a; Gillet et al., 2015b; Trépanier et al., 2015), job satisfaction (Gagné and Deci, 2005; Gagné et al., 2010;

Van den Broeck et al., 2010), life satisfaction (Van den Broeck et al., 2010) and general well-being (Baard et al., 2004; Gagné and Deci, 2005; Gagné et al., 2010; Deci et al., 2017). In addition, basic psychological need satisfaction has been found to decrease the chance of burnout and turnover (Baard et al., 2004; Gagné and Deci, 2005; Trépanier et al., 2015), and protect employees against exhaustion (Fernet et al., 2012a), psychological distress (Trépanier et al., 2015), and ill-being (Baard et al., 2004).

On the other hand, controlled motivation and need thwarting, reflecting the feeling that basic psychological needs are being obstructed or actively undermined in a given context (Bartholomew et al., 2011a; Bartholomew et al., 2011b), limit the possibility of experiencing these positive outcomes of need satisfaction in the work context. In addition, need frustration has also been related to negative outcomes including psychological distress, psychosomatic complaints (Gagné et al., 2010; Trépanier et al., 2015), exhaustion (Van den Broeck et al., 2010; Fernet et al., 2012b; Olafsen et al., 2017), higher work related stress and burnout (Gillet et al., 2015b; Olafsen et al., 2017)

Within the work context, job resources positively influence basic psychological need satisfaction and autonomous motivation, at the same time as they decrease the chance of having controlled motivation and experiencing need thwarting (Fernet et al., 2012a; Gillet et al., 2015b; Trépanier et al., 2015). Job demands have the opposite function by positively predicting need thwarting and controlled motivation (Fernet et al., 2012a; Gillet et al., 2015b; Trépanier et al., 2015). One of the most important factors related to basic psychological need satisfaction and autonomous motivation in the work environment, is having an autonomy supportive manager or supervisor that supports satisfaction of basic psychological needs for the employees (Baard et al., 2004; Gagné and Deci, 2005; Gillet et al., 2012; Gillet et al., 2013; Gillet et al., 2015a; Olafsen et al., 2015; Deci et al., 2017). This extensive body of research, using SDT, therefore shows that management style and job resources can positively influencing motivation, performance, functioning and well-being or be related to distress and ill-being, and that this relationship is mainly mediated through the satisfaction or thwarting of basic psychological needs (Deci et al., 2017).

## 1.2 The Norwegian national insurance scheme

In Norway, there is a concern that a large part of the population is not participating in working life (OECD, 2010). The National insurance scheme provides a range of social welfare arrangements to different groups in the population, including economic support to people that are unable to work. NAV

administers a third of the Norwegian national budget, which also pays for sick-leave benefits, work assessment allowances, and disability pensions (NAV, 2016d).

In Norway, the right to sick-leave benefits (NAV, 2016f) applies if the individual has been in paid work for the last four weeks before being sick-listed. The occupational disability should be caused by own disease, illness or injury, and may be documented by a personal declaration (usually maximum 3 days) or by a sick-leave certificate from a doctor (more than three days). The individual can be fully sick-listed or partially sick-listed, graded from 99%-20%. The employer is responsible for paying sick-leave benefits the first 16 days, and NAV continues the payments from the 17<sup>th</sup> day to a maximum of 52 weeks. Sick-leave benefits are usually equivalent to full wages, but NAV does not pay beyond 6 times the amount of the national insurance base (which totals to about 52 900 GBP). Recipients of sick-leave benefits are required to make a follow-up plan for return to work with their employer within 4 weeks. If work related activities are not initiated within 8 weeks, an expanded medical certificate is required.

Work assessment allowance (APP) (NAV, 2016e) is another social benefit arrangement that ensures income to individuals with impaired work capability by at least 50%, due to illness or injury, or who need assistance from NAV to find or hold onto a job. For about half of the individuals receiving APP, their sick-leave benefit period came to an end without them being able to resume paid work. The other half receiving APP is mostly younger people who for different medical reasons have not been able to earn the rights to sick-leave benefits. APP recipients therefore, either has been out of work for more than 52 weeks or lack work experience that ensures them sick-leave benefits. This indicates that these individuals have a weak connection to working life, which also could make the return to work process more challenging for this group. The allowance equals to 66% of the person's income, and the APP period lasts for a maximum of four years. The APP recipient is required to actively contribute in the process of returning to work.

Last, disability benefit (NAV, 2016a) provides an income for individuals with a permanently reduced working capability of at least 50% due to illness or injury. However, individuals transferring from APP only need a 40% permanent reduction in earning capacity. In cases where the disability is due to an occupational illness or injury, disability pension can be granted if the earning capacity is reduced by 30%. In order to receive disability benefits, appropriate vocational rehabilitation measures must have been completed. Disability can be graded, so an individual that is 70% disabled can work 30%.



As stated above, a large part of the population in Norway is currently not participating in working life (OECD, 2010). Numbers from the third quarter of 2016 showed that 5.4% of the working aged population in Norway had a doctor certified sick-leave (NAV, 2016b). In the same period, 4.3% of the working aged population received APP (NAV, 2016g), and 9.5% received disability pension (NAV, 2016a). The main reported diagnoses for long-term sick-leave and disability pension in Norway are musculoskeletal and mental health disorders (OECD, 2010; NAV, 2016c). These diagnoses are often characterised by no or few objective diagnosis criteria and are therefore, related to musculoskeletal and psychological complaints (Waddell, 2006; Ihlebæk et al., 2007; Brage et al., 2010).

### 1.3 Subjective health complaints

SHC can be described as common complaints like lower back pain, neck pain, stomach aches, tiredness, depressive feelings, and anxiety (Eriksen et al., 1999; Ihlebæk et al., 2002). The reported prevalence of these complaints in the general population is high, ranging from 75 to 96% (Eriksen et al., 1998; Eriksen et al., 1999; Ihlebæk et al., 2002; Roelen et al., 2010; Indregard et al., 2013; Poulsen et al., 2013). The complaints are often unspecific in nature, lacking objective pathological signs or symptoms (Ursin, 1997; Eriksen et al., 1999; Ihlebæk et al., 2002; Eriksen and Ursin, 2004), and usually occur with a high degree of comorbidity (Eriksen et al., 1998; Eriksen et al., 1999). Even though, SHC are experienced as normal everyday complaints for most people, for some people these complaints become severe and long lasting (Ihlebæk et al., 2002).

Although there is no clear cut-off point defining when SHC become crippling for the individual (Ihlebæk et al., 2002), these complaints can still be a useful indicator of health and well-being. It has been found that functional problems increased in a linear way with increasing number of pain sites (Kamaleri et al., 2008b; Bruusgaard et al., 2012), and number of pain sites has also been associated with reduction in overall health, sleep quality and psychological health (Kamaleri et al., 2008a). A high level of SHC has also been associated with low health-related quality of life (Tveito et al., 2004), and several studies have found a relationship between a higher number of SHC and falling out of working life (Tveito et al., 2002; Roelen et al., 2010; Poulsen et al., 2013). Roelen et al. (2010) found that the 20% of participants reporting the most SHC were responsible for almost 40% of work days lost over a period of two years. Reporting several SHC has also been found to increase the likelihood of having more periods of sick-leave lasting longer than two weeks (Poulsen et al., 2013), and an increased number of pain sites has been found to predict a higher prevalence of disability pensions 14 years after the complaints were first

reported (Kamalari et al., 2009). Musculoskeletal pains have been found to be one of the main reasons for sick-leave and disability (Brage et al., 2010). Further, for people between 25-39 years of age, mental illness caused half of all new disability payments, which means that mental health problems contribute to both early and prolonged withdrawal from the workforce in Norway (Mykletun and Knudsen, 2009). It therefore comes as no surprise that individuals outside the workforce dependent on social welfare benefits, also are one of the groups with the absolute highest number of symptoms in the population (Kjeldsberg et al., 2013).

The development of SHC have been suggested to be caused by neural sensitisation of the central nervous system (Ursin, 1997). Sensitisation in neural loops are maintained by sustained attention and arousal, leading to increased efficiency in the synapse due to repeated use (Ursin, 1997; Eriksen and Ursin, 2004). This psychobiological mechanism therefore, can explain how sensitisation can transform normal physiological processes into severe and long-lasting SHC for the individual, without reflecting a traditional medical somatic disease (Eriksen and Ursin, 2004). Brosschot (2002) also explains how cognitive-emotional sensitisation, caused by perseverative negative cognition like worry and rumination, represents a higher order sensitisation that can lead to long-lasting activation. The physiological effects of cognitive-emotional sensitisation therefore, explain how psychological stress, can lead to SHC (Brosschot, 2002). This is supported by Ree et al. (2014) who found that lack of coping with stress, described as helplessness and hopelessness in the cognitive activation theory of stress (CATS) (Ursin and Eriksen, 2004), was an important mechanism leading to SHC. The lack of coping was found to be a stronger predictor of low self-rated health and SHC than well-established measurements like SES and perceived physical workload (Ree et al., 2014). Ihlebæk & Eriksen (2003) found that SES together with lifestyle and work-related factors explained little of the variance in SHC across groups, which lead them to suggest that other aspects, including individual psychological factors, may play a greater role in explaining level of SHC.

Even though psychobiological mechanisms and psychological aspects have been related to the development of SHC, there is still scarce knowledge concerning why some people manage to live and function with their SHC, whilst others report severe negative consequences to function and well-being (Ihlebæk et al., 2002). Nevertheless, it has been found that re-employment for people with common health problems can lead to improved self-esteem, and improved general and mental health (Waddell and Burton, 2006). This highlights the need for rehabilitation services that promote health by offering

supportive environments, that enable people to deal with the negative consequences of long-term sick-leave and health complaints, at the same time as they improve skills and receive support from others.

#### 1.4 Vocational and prevocational rehabilitation

The WHO describes how “[r]ehabilitation of people with disabilities is a process aimed at enabling them to reach and maintain their optimal physical, sensory, intellectual, psychological and social functional levels. Rehabilitation provides disabled people with the tools they need to attain independence and self-determination.”(WHO, 2016a). The Norwegian definition also views rehabilitation as a process leading to health promotion by increasing the individuals’ own efforts towards function and participation in society. “Rehabilitation is timed and planned processes with clear goals and means, where several stakeholders cooperate in providing necessary support to the patient or user’s own effort to achieve optimal functional and coping skills, independence, and participation in everyday life and in society” (Rehabiliteringssenteret i Rauland AiR, 2012) (translated from Norwegian to English by Øyeflaten (2016)). NAV describes vocational rehabilitation as a tailored measure that aims to improve work capabilities, which may include individualised training and guidance, designed to increase motivation and ability to tackle problems (NAV, 2011). Vocational rehabilitation can either be a daytime offer or an inpatient 24 hour service. As a rule, 24 hour services last up to four weeks, while the duration of daytime services are tailored to the needs of the individual, usually lasting up to a maximum of 12 weeks (NAV, 2011). The individuals themselves, their employer or a medical professional may all suggest referral to vocational rehabilitation. However, NAV is responsible for the final decision of referral to rehabilitation programs. If the person is currently on sick-leave at the time of referral, the medical professional responsible for the sick-leave certificate must also be notified (NAV, 2011).

Prevocational training, also known as transitional employment, is one type of vocational rehabilitation service. Here, a temporary work environment is provided for individuals who have been out of work for many years. The aim is to convey the basic expectations of ordinary employment, and to improve vocational and social skills that enable the individual to move on to competitive employment at a later stage (Crowther et al., 2001; Rossler, 2006; Iancu et al., 2014). Prevocational training has been found less effective than other vocational rehabilitation services in helping people return to work (Crowther et al., 2001). However, Iancu et al. (2014) found that prevocational training might ensure a better match between the needs of the client and the service. This is also stated by NAV who describes individual tailoring, where the work situation can be accommodated to the individuals’ wishes, needs and level of

functioning, to be one of the advantages of prevocational training (NAV, 2013). In Norway, one of the current prevocational rehabilitation offers is to attend a care farm.

#### 1.4.1 Care farms

Care farming, also known as social farming or farming for health, is part of the Green Care concept that focuses on nature to promote human mental and physical health (Sempik et al., 2010). Care farms are commercial farms that promote health through normal farming activities (Hine et al., 2008; Berget et al., 2012; Pedersen et al., 2016), thereby creating a link between the traditional healthcare systems and the agriculture sector (Haubehofer et al., 2010). Care farming services include a variety of different activities, but are united through their focus on supporting health promoting processes for a range of different client groups within the broad agricultural context (Enders-Slegers, 2008). The Netherlands, a pioneer country in the development of care farms (Hassink et al., 2014), exceeded 1000 care farms in 2011 (Leck et al., 2014), and care farming has been described as on the rise in a number of countries across Europe including Belgium, Austria, Italy, Germany, the United Kingdom, Ireland, Slovenia, Sweden, and Finland (Haubehofer et al., 2010; Leck et al., 2014). Care farm enterprises also exist outside Europe, even if they sometimes are conceptualised differently (Leck et al., 2014).

The development of care farming in Norway has to be considered in light of general trends in the Norwegian agricultural sector. In Norway the number of farms decreased by three quarters from the 1950s to 2005, and the number of people employed in the agricultural sector was also reduced from about 350 000 to about 60 000 people during the same period (Ladstein and Skoglund, 2008). In addition, Norwegian farms are usually small, often with a part time farming production, which means that the farmer often has to rely on additional sources of income to farming (Hassink and van Dijk, 2006). Many family-based commercial farms in Norway could therefore benefit from offering care farm services. The many small size farms, the varied production and the relatively moderate use of machinery, also makes it easy to include clients in the farm work (Hassink and van Dijk, 2006).

In Norway, the number of care farms has been estimated to be somewhere between 650 and 950 (Stokke and Paulsen Rye, 2007; Logstein and Bleksaune, 2010). However, the lack of a national register of care farms, made these estimated numbers very uncertain. Therefore, in 2012 a national approval system (Matmerk) was established. At the beginning of 2017, 370 farms had achieved a care farm certification (Matmerk). However, even if a farm is certified, it is not necessarily an active care farm, which means there is no register of active care farms in Norway. In addition, the farms that are active,

offer their services to a range of vulnerable groups of people. A nationwide survey identified up to 10 different categories of clients (Prestvik et al., 2013). The most common types of services are directed at school children. In addition, there are services directed at people with special needs and mental health disorders, developmentally challenged, physically disabled, persons with dementia, and children in kindergartens, in addition to prevocational training. Less common services are directed at people within the correctional system and pedagogic services for adults (Prestvik et al., 2013). The clients are referred from different health and social care agencies, including health care institutions at the municipal level and NAV.

#### 1.4.2 Prevocational training on care farms

In Norway, a number of care farms offer prevocational training. These services typically comprise a variety of practical work tasks including livestock farming; forest management; the cultivation of grains, fruits, or vegetables; or other businesses on the farm, such as working in a farm shop or café (Pedersen et al., 2016). Tailoring of work tasks to fit clients' needs and level of function has been described as one of the key components of care farming (Pedersen et al., 2016). Further, the farmers often use the farm environment actively to facilitate contact with animals and nature experiences for the clients (Pedersen et al., 2016). Working with animals or being in nature also usually includes physical activities like hiking, horseback riding or fishing. In addition, farmers emphasise the importance of creating a structured daily routine for the clients (Pedersen et al., 2016), which often include having regular morning meetings and common meals together at set times.

When NAV initiates prevocational training on care farms, it is labelled Green work. This service is primarily aimed at people outside the workforce struggling with mental health problems. NAV provides guidelines to the farmer describing how Green work should be organised at the farm. These guidelines were developed to ensure the content and quality of the service provided for the clients (NAV, 2013), and they emphasise a structured, flexible, tailored work environment, including experiences of coping, social training, and nature. NAV requires a continual evaluation of the client's progress from the care farmer during a period of twelve months (NAV, 2013). Based on these evaluations, the client may be granted an additional stay for another twelve months on the care farm. Last, even though Green work follows specific guidelines from NAV, other prevocational training programs on care farms are organised in much the same way. Because there are no substantial differences between Green work initiated by

NAV and prevocational training initiated by other stakeholders, these two programs will be considered one type of service, and be referred to as prevocational training on care farms, in this thesis.

### 1.5 Research on prevocational training on care farms

A literature review of research on prevocational training on care farms was conducted. Articles were identified by a systematic search in relevant databases (PubMed, Web of science, CINAHL, PsychINFO) using the keywords; Green care, care farm, social farming, and farming for health (table 1). Conference proceedings, book chapters and reports were excluded. Due to the heterogeneous nature of the client group participation on care farms, it was not possible to have a too strict inclusion criteria regarding the target group in this literature review. Therefore, articles with adult participants with either mental and/or addiction problems or who had been referred to the care farm to participate in prevocational training were included. In addition, some articles included participants under the age of 18 years. However, when the majority of the sample consisted of adult participants, these articles were still considered relevant for this literature review. Last, intervention studies investigating specific elements of the care farm, that were organised in a care farm context where the farmer had the main responsibility for the participants, were also included in the literature review. Otherwise, care farm articles focusing on children, adolescence under the age of 18, developmentally challenged individuals, elderly or people with dementia were excluded. The results of the literature review is summarised in table 1.

Table 1. Overview of research on clients in prevocational training on care farms including intervention studies and studies on active care farms

Intervention studies in a care farm context				
Publication	Participants	Study design/ Method	Type of intervention/ Model	
			Main findings	
Berget et al. (2007) <i>Humans with mental disorders working with farm animals: A behavioural Study</i>	Adults with different psychiatric disorders (N=35)	Behavioural study (video recordings)	12-week farm animal-assisted intervention	Higher intensity and exactness in work at the end of the intervention. Increased intensity of work correlated with increased self-efficacy and decreased anxiety for individuals with affective disorders.
Berget et al. (2008) <i>Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on self-efficacy, coping ability and quality of life, a randomized controlled trial</i>	Adults with different psychiatric disorders (N=90)	Randomised controlled trial (RCT)	12-week farm animal-assisted intervention	Significant increase in self-efficacy between treatment and control group from before intervention to follow-up. Significant increase in coping ability from before intervention to follow-up within the treatment group.
Berget et al. (2011) <i>Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on anxiety and depression. A randomized controlled trial</i>	Adults with different psychiatric disorders (N=69)	Randomised controlled trial (RCT)	12-week farm animal-assisted intervention	Significant decrease in anxiety between treatment and control group from before intervention to follow-up. Significant decrease in depression scores at follow-up compared to baseline within both the treatment and the control group.
Gonzalez et al. (2009) <i>Therapeutic horticulture in clinical depression: a prospective study</i>	Adults with clinical depression (N=18)	Survey (longitudinal)	12-week therapeutic horticulture program	Decline in depression and improved attention capacity from pre-test to post-test. Perception of the intervention as fascinating was correlated with decline in depression scores.

Gonzalez et al. (2010) <i>Therapeutic horticulture in clinical depression: a prospective study of active components</i>	Adults with clinical depression (N=28)	Survey (longitudinal)	12-week therapeutic horticulture program	Decline in depression and improvement in attention capacity were mediated by fascination and being away. Decline in depression was also mediated by decline in rumination.
Gonzalez et al. (2011) <i>A prospective study of group cohesiveness in therapeutic horticulture for clinical depression</i>	Adults with clinical depression (N=46)	Survey (longitudinal)	12-week therapeutic horticulture program	Significant decline in depression, anxiety, and stress, and increased positive affect during the intervention. No significant contribution of group cohesiveness to improvements in mental health.
Pedersen et al. (2011) <i>Farm animal-assisted intervention: Relationship between work and contact with farm animals and change in depression, anxiety, and self-efficacy among persons with clinical depression</i>	Adults with clinical depression (N=14)	Behavioural study (video recordings)	12-week farm animal-assisted intervention	Progress in working skills with farm animals (coping experiences) was associated with decreased levels of anxiety and depression and increased levels of self-efficacy.
Pedersen et al. (2012) <i>Farm animal-assisted interventions for people with clinical depression: A randomized controlled trial</i>	Adults with clinical depression (N=29)	Randomised controlled trial (RCT)	12-week farm animal-assisted intervention	More subjects in the intervention group had clinically significant decline in depressive symptoms than control group. Significant increase in general self-efficacy for intervention group.
Pedersen et al. (2012) <i>Important elements in farm animal-assisted interventions for persons with clinical depression: a qualitative interview study</i>	Adults with clinical depression (N=8)	Interviews	12-week farm animal-assisted intervention	Central elements of the intervention; experiencing ordinary working life, having a distraction to the illness, flexibility of the intervention and farmer's attitude and commitment. Farm animals offered closeness, warmth and calmness.



Studies on active care farms				
Publication	Participants	Study design/ Method	Type of intervention/ Model	Main findings
Hine et al. (2008) <i>Care Farming in the UK: Contexts, benefits and links with therapeutic communities</i>	No specific target group (N=72)	Mixed methods, survey and qualitative narratives	Participants on care farms	There was a significant increase in self-esteem and improvement in overall mood from beginning of stay on the care farm to after spending time on the farm. Qualitative narratives showed that fresh air, contact with animals, being with other people and learning new skills were most enjoyed by participants.
Leck et al. (2015) <i>Growing well-beings: The positive experience of care farms</i>	No specific target group. Age span from 16 to over 60 years (predominantly adults). (Survey N=137, and interviews N=33)	Mixed methods, survey (longitudinal) and interviews	Participants on care farms	Well-being had a significantly positive relationship with the length of time spent on the care farm. The interviews showed that the positive experience within the farm environment lead to health benefits and personal development for participants and that social interactions became increasingly influential over time.
Elings & Hassink (2008) <i>Green Care Farms, a safe community between illness or addiction and the wider society</i>	Adults with mental disorders or history of drug/alcohol abuse (N=42)	Focus group interviews	Stay at Green care farms	Participants valued the social aspect (feeling of belonging, being accepted and respected), the freedom/space and the useful activities (especially working with animals and plants) on the farm. This lead to self-confidence, self-esteem and self-acceptance.
Granerud & Eriksson (2014) <i>Mental health problems: Recovery, and the impact of Green Care services: A qualitative, participant-focused approach</i>	Adults with mental health and/or drug related problems (N=20)	Interviews	Current and former participants in Green care services on farms	Working in a social context, with animals, increased mastery and meaningfulness. Participation lead to new skills, improved social networks and well-being for participants.

Hassink et al. (2010) <i>Care farms in the Netherlands: attractive empowerment-oriented and strength-based practices in the community</i>	Adults with mental illnesses (N=16)	Interviews	Stay at Green care farm	The community on the farm, the attitude of the farmer, working at one's own pace, having a structure to life, the diversity of work, contact with farm animals and the green environment were described as key characteristics of the farm.
Iancu et al. (2014) <i>Mental health recovery on care farms and day centres: a qualitative comparative study of users' perspectives</i>	Adults. No specific target group (N=14)	Interviews	Participants on care farms	Participants experienced care farms as real-life work settings, where they could connect with people and experience responsibility.
Kogstad et al. (2014) <i>Narratives of natural recovery: Youth experience of social inclusion through Green Care</i>	Young people (one under the age of 18) risking social isolation	Interviews	Participants in different Green care services	Experienced success factors of the program were; varied tasks leading to self-efficacy, and experiences with animals and nature that provided comfort and a safe situation. Participation lead to self-respect and motivation towards education and ordinary work.

Results from the literature review will be presented in two main sections. First, each article identified in the review will be presented, before three important elements of the care farm context described across the articles in the literature review will be summarised. First, articles based on data collected in three studies investigating farm-animal and horticulture work during 12-week interventions will be described, followed by articles investigating active care farms.

#### 1.5.1 Presentation of articles from the literature review

Even though the intervention studies were not conducted on active care farms, they investigate important elements within the care farm context. In the first intervention study with farm-animals, a randomised controlled trial (RCT) including 69 adult participants with different psychiatric disorders, resulted in two articles (Berget et al., 2008; Berget et al., 2011). A third article was also produced using longitudinal behavioural data (Berget et al., 2007), including 35 participants from the sample that was used in the RCT described above. The RCT found a significant increase in self-efficacy (Berget et al., 2008) and decrease in anxiety (Berget et al., 2011) for the treatment group compared to the control group from baseline to six months after the intervention. In addition to these effects, there was also an increase in coping (Berget et al., 2008) and decrease in depression (Berget et al., 2011) at follow-up compared to baseline within the treatment group. In Berget et al. (2007) longitudinal study using video recordings, a higher intensity and exactness in work tasks at the end of the intervention compared to the beginning was found. Further, this change was correlated with an increase in self-efficacy and a decrease in symptoms of anxiety (Berget et al., 2007).

The second intervention study on farm-animals resulted in three articles (Pedersen et al., 2011; Pedersen et al., 2012a; Pedersen et al., 2012b). First, Pedersen et al. (2012b) RCT study, including 29 adults with clinical depression, found no effects between the treatment and control group. However, an increase in self-efficacy within the treatment group during the intervention was found (Pedersen et al., 2012b). In addition, there was a higher number of individuals with a clinical significant decline in symptoms of depression in the treatment group compare to the control group (Pedersen et al., 2012b). Further, a longitudinal behavioural study using video recordings, including 14 participants from the sample included in the RCT, found that progress in working skills was associated with decreased levels of anxiety and depression, and increased levels of self-efficacy (Pedersen et al., 2011). Last, Pedersen et al. (2012a) interview study including 8 individuals from the sample included in the RCT, described how experiencing ordinary working life and having a distraction to illness was valued by the clients. The

flexibility of the intervention and the farmer's attitude and commitment was also described as central aspects of the intervention (Pedersen et al., 2012a). These farm-animal interventions therefore, found two significant differences between treatment and control groups on self-efficacy and anxiety (Berget et al., 2008; Berget et al., 2011). However, results also indicate that farm-animal assisted interventions may have the potential to increase general self-efficacy, coping and mental health for clients (Berget et al., 2007; Berget et al., 2008; Berget et al., 2011; Pedersen et al., 2011; Pedersen et al., 2012a; Pedersen et al., 2012b).

The third intervention study investigating horticulture activities in a care farm setting resulted in three articles (Gonzalez et al., 2009; Gonzalez et al., 2010; Gonzalez et al., 2011). First, Gonzales et al. (2009) longitudinal study of 18 adult participants with clinical depression, found a decline in depression and incline in attention capacity from pre to post-test. A second longitudinal study by Gonzales et al. (2010) including 28 participants, also with clinical depression, corroborated these findings, as a decline in depression and incline in attention capacity from pre to post-test was found. However, in this second study, experiencing nature, measured by fascinating and a being away, was identified as a mediator between the horticulture activity engagement and the decline in depression and incline in attention capacity (Gonzalez et al., 2010). In the third longitudinal study by Gonzales et al. (2011) the sample of 18 participants used in the first article and the sample of 28 participants used in the second article were combined, resulting in the inclusion of 46 adult participants with clinical depression. This study showed a significant decline in depression, anxiety and stress, and a significant incline in positive affect from pre to post-test for the participants (Gonzalez et al., 2011).

Next, the literature review shows that there has been limited research on active care farms. Two articles based on a mixed method design will be described first, before the last five articles based on qualitative data will be presented. First, Hine et al. (2008) survey, including 72 adults participating in a care farm service, showed that stay on a care farm lead to increased self-esteem and overall mood. Short qualitative narratives collected from participants also showed that fresh air, contact with animals, being with other people and learning new skills was highly appreciated by the clients (Hine et al., 2008). In the second mixed method study by Leck et al. (2014), the longitudinal study including 137 adults (some under the age of 16) participating in services on care farms, showed that well-being increased in relation to time spent on the farm. In addition, interviews with 33 adults also participating in services on care farms, revealed that positive experiences of the farm environment lead to health benefits and personal

development for the clients, and that social interactions seemed to be influential over time (Leck et al., 2014).

Further, the five articles based on a qualitative method will be considered. Elings & Hassink (2008) conducted focus group interviews of 42 adults with mental health disorder and/or a history of substance abuse participating in services on care farms. They found that the social aspect, the space and freedom, and the activities including working with animals and plants, were most valued by clients. Further, being on the farm lead to self-confidence, self-esteem and self-acceptance (Elings and Hassink, 2008). Next, Hassink et al. (2010) interviews with 16 adults with mental illnesses participating in a care farm services, identified key characteristic of the care farm context for the clients. These characteristics included the positive attitude of the farmer, the diversity and flexibility of the work tasks and the possibility to work with animals and experience nature. In addition, clients reported that they appreciated the daily structure that the care farm program provided (Hassink et al., 2010).

A more recent study by Iancu et al. (2014) based on interviews with 14 adult participants in a care farm service, found that care farms were experienced as real-life work settings where clients could connect to others. Further, the care farm service lead to important work-related and social benefits for the clients, and the person in charge of the clients was perceived as particularly important (Iancu et al., 2014). Kogstad et al. (2014) interviews of young people (one under 18 years of age) in risk of social isolation participating in different Green care program, found that engagement in work tasks lead to increased self-efficacy, and that experiences with nature and animals provided comfort and safety. Further, participation in the care farm service also increased self-respect and motivation towards work and education (Kogstad et al., 2014). Last, Granerud & Eriksson's (2014) interviews of 20 adults with mental health and/or drug related problems, found that participation in the care farm service lead to new practical skills, improved social networks and well-being for the clients. Especially working in a social context, and working with animals, provided a sense of mastery and meaningfulness for the clients (Granerud and Eriksson, 2014).

The literature review shows many possible positive outcomes for clients on care farms in relation to general self-efficacy, coping, mastery, working skills (Berget et al., 2007; Berget et al., 2008; Hine et al., 2008; Pedersen et al., 2011; Pedersen et al., 2012b; Granerud and Eriksson, 2014; Iancu et al., 2014; Kogstad et al., 2014), attention capacity (Gonzalez et al., 2010), social benefits (Granerud and Eriksson, 2014; Iancu et al., 2014) and motivation towards resuming ordinary work (Kogstad et al., 2014). Further,

clients on care farms have been found to report increased self-esteem, self-confidence self-acceptance, and self-respect (Elings and Hassink, 2008; Hine et al., 2008; Kogstad et al., 2014), and these services have been found to positively influence mental health (Berget et al., 2007; Gonzalez et al., 2009; Gonzalez et al., 2010; Berget et al., 2011; Gonzalez et al., 2011; Pedersen et al., 2011; Pedersen et al., 2012b), overall mood (Hine et al., 2008), well-being (Granerud and Eriksson, 2014; Leck et al., 2014), positive affect (Gonzalez et al., 2011), and the experience of meaningfulness (Granerud and Eriksson, 2014). Some elements of the care farm context seems to be recurrent across the articles identified in this literature review. These elements include engaging in activities and practical work, the experience of animals and nature and the social community on the farm. Findings from articles in the literature review will be considered in accordance with these main elements next.

### 1.5.2 Elements of the care farm context

#### *Activities and practical work*

Iancu et al. (2014) found that participants experienced care farms as real-work settings, and work activities on care farms have often been described as useful and meaningful by the clients (Elings and Hassink, 2008; Pedersen et al., 2012a). Engagement in such activities seems to provide clients with an opportunity to learn new skills, re-build their confidence and increase self-efficacy (Berget et al., 2007; Berget et al., 2008; Elings and Hassink, 2008; Hine et al., 2008; Pedersen et al., 2011; Pedersen et al., 2012a; Kogstad et al., 2014). A flexible work environment has also been emphasised as a positive characteristic of the care farm context. The clients seem to appreciate the freedom to switch between activities according to their interests (Elings and Hassink, 2008; Iancu et al., 2014), as well as having the opportunity to adjust the work, and rest when having bad days (Elings and Hassink, 2008; Hassink et al., 2010). In the qualitative study by Pedersen et al. (2012a) clients described this flexibility as having the possibility to experience ordinary working life and being sick at the same time. Last, engagement in activities and work on the care farm has also been found to be important for creating a structured everyday life for the clients (Hassink et al., 2010).

#### *Nature and animals*

Another recurring element in the care farm context is the possibility to experience nature and be around animals. Hassink et al. (2010) found that the opportunity to work outside in nature was much appreciated by clients. Nature has also been reported to give the experience of calmness and to provide a space

where clients could withdraw from the group when they needed (Elings and Hassink, 2008; Hine et al., 2008; Hassink et al., 2010). Experiencing nature, including fascination and being away, has also been found to mediate the positive influence horticulture activities have on positive affect, attention capacity and depression (Gonzalez et al., 2009; Gonzalez et al., 2010; Gonzalez et al., 2011). Fascination and being away are two of the components contributing to the restorativeness of an environment, outlined in the Attention restoration theory by Kaplan and Kaplan, and is therefore considered important for relieving stress and for rebuilding mental capacity (Kaplan, 1995).

Further, being around or working with animals has also been described as important to clients. Animals have been described as someone providing closeness and warmth, making the clients feel calm (Pedersen et al., 2012a), comfortable (Kogstad et al., 2014) and safe (Hassink et al., 2010; Kogstad et al., 2014). In addition, clients on care farms have reported that they enjoy working with animals because it involves taking care of other living beings (Hassink et al., 2010), and Granerud and Eriksson (2014) found that working with animals lead to a feeling of meaningfulness for the clients. Last, work tasks with animals have also been shown to have the potential to increase self-efficacy and mastery (Berget et al., 2007; Berget et al., 2008; Pedersen et al., 2011; Pedersen et al., 2012b; Granerud and Eriksson, 2014), as well as coping and mental health for clients (Berget et al., 2008; Berget et al., 2011; Pedersen et al., 2011; Pedersen et al., 2012b).

### *The social community*

Next, the farmer seems to be an important part of the social community on the farm. They have been described as close and personal in their involvement with the clients (Hassink et al., 2010; Pedersen et al., 2012a), providing practical and emotional support (Elings and Hassink, 2008; Hassink et al., 2010; Pedersen et al., 2012a). In addition to the farmer, the social community on the care farm also offers a setting where clients can connect with each other (Hine et al., 2008; Iancu et al., 2014). Having a sense of belonging to a client group has been found to increase feelings of security and acceptance (Elings and Hassink, 2008; Hassink et al., 2010), which has been described by clients on care farms as important for healing and mental well-being (Elings and Hassink, 2008). In addition, clients have described that being part of a client group also provides the opportunity to give acceptance and support to others (Elings and Hassink, 2008).

Findings from this literature review therefore, in addition to illustrating the potential of care farm programs to improve mental health and well-being for the clients as stated above, give insight into some

main elements of the care farm context. These elements include the activities and work tasks on the farm, the experience of nature and contact with animals, and the social community including the farmer and other clients. What also becomes apparent by considering this literature review is the lack of systematic research on active care farms. Systematic research, utilising theoretical frameworks that can give a better understanding of the clients as well as the possible health promoting elements in the prevocational training context on care farms, is therefore needed. In this thesis, the self-determination theory was used (Deci and Ryan, 2000).

## 1.6 Self-determination theory

SDT is a broad framework for understanding human motivation and personality (Deci and Ryan, 2000; 2008b), comprising of six mini-theories developed to study different phenomena related to motivation. In this section, the main theoretical framework will be described, before the focus is turned to the mini-theory of basic psychological needs, which was used in the papers included in this thesis. As above-stated, SDT is concerned with motivation. Motivation is about direction and persistence, and can be described as the energy that moves individuals to act (Deci and Ryan, 2008a). Traditionally, the view on motivation has been that more is better than less. However, SDT postulates that instead of focusing on the quantity of motivation, one should be concerned with the quality (Deci and Ryan, 2008b).

SDT therefore, describes different types of motivation, making a main distinction between autonomous and controlled motivation (Deci and Ryan, 2000; 2008b). Engagement that gives a feeling of being pressured, either from external sources like punishments and rewards, or from internal feelings of shame and pride, can be described as controlled motivation. Because of the experienced pressure involved, this type of motivation has been found to be negative for wellness (Ryan and Deci, 2000b; Gagné and Deci, 2005). In contrast, engagement experienced as spontaneously satisfying and interesting or as personally important, can be described as autonomous motivation (Ryan and Deci, 2000b; Gagné and Deci, 2005). However, while controlled motivation is always extrinsic in nature, autonomous motivation can be either strictly intrinsic (spontaneously satisfying) or extrinsic (personally important). To understand how individuals can become autonomously motivated, or self-motivated, towards behaviours that are externally regulated, one must consider the organismic dialectic perspective within SDT.



The organismic aspect of the SDT reflects a view of humans as active organisms inherently motivated to grow, master, and actively integrate new experiences into a coherent sense of self (Deci and Ryan, 2000; Ryan and Deci, 2000b). This integration can be described as an internalisation process, where social values and regulations outside the individual can become the person's own values. Uninteresting activities that nonetheless are important for function can therefore be integrated (Deci et al., 1994; Deci and Ryan, 2008a). This organismic view of humans therefore, explains how extrinsically regulated behaviours, may become autonomously regulated personally valued activities (Gagné and Deci, 2005) (Ryan and Deci, 2000b; Deci and Ryan, 2008a). However, according to the meta-theory of the SDT, this natural integrative process requires ongoing support from the social context to function. This dependency on the context represents the dialectic aspect of the SDT, which means that an optimal internalisation process leading to autonomous motivation is dependent on certain nutriments within the social context (Deci et al., 1994; Ryan and Deci, 2000b; Deci and Vansteenkiste, 2004). SDT postulates that satisfaction of basic psychological needs provides the nutriments that facilitate intrinsic motivation and optimal internalisation (Gagné and Deci, 2005).

### 1.6.1 Basic psychological needs

SDT describes these contextual nutriments as the three basic psychological needs for competence, relatedness, and autonomy (Deci and Ryan, 2000). Competence reflects the need to be effective in dealing with the environment, relatedness reflects the need to be connected to and caring for others, and autonomy reflects the need to experience volition and be a causal agent (Deci and Ryan, 2000). SDT considers these basic psychological needs to be innate and fundamental, comparable to biological needs, which means they are essential for optimal human function and well-being (Ryan, 1995; Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b). The internalisation process and the resulting motivational style, is therefore influenced by the social context (Deci et al., 1994; Ryan and Deci, 2000b), and this also means that social contexts can either stimulate healthy functioning, autonomous motivation, and well-being, by supporting the satisfaction of the three basic psychological needs or they can lead to controlled motivation and ill-being by not supporting the satisfaction of, or even by thwarting, these basic psychological needs (Ryan, 1995; Deci and Ryan, 2008a).

A vast and growing empirical literature shows the benefits of basic psychological need satisfaction both in general and within specific life domains (Deci and Ryan, 2008a). Both basic psychological need satisfaction and autonomous motivation has consistently been positively related to psychological health

(Deci and Ryan, 2008a), self-esteem, well-being, the experience of meaningfulness (Ryan and Deci, 2000a; Gagné and Deci, 2005), flow (Kowal and Fortier, 1999), optimal functioning and daily well-being (Sheldon et al., 1996; Ryan et al., 2010). On the other hand, contexts that do not support satisfaction of basic psychological needs have been found to undermine self-motivation, performance and wellness (Ryan, 1995; Reis et al., 2000). Several contextual factors may facilitate basic psychological need satisfaction and autonomous motivation.

#### *Facilitating basic psychological need satisfaction and autonomous motivation*

First of all, the context must present a clear structure. The structure is important because it makes the values and regulations that are to be internalised, salient to the individual (Gagné and Deci, 2005; Deci and Ryan, 2008a). Further, contexts that provide challenges (Gagné and Deci, 2005), give a feeling of choice, and entail interesting and meaningful activities (Gagné and Deci, 2005; Ryan and Deci, 2006) all contribute to basic psychological need satisfaction, thereby facilitating autonomous motivation.

However, the most important socio-contextual factor facilitating basic psychological need satisfaction is an autonomy supportive person (Deci et al., 1994; Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; Stone et al., 2009). An autonomy supportive relationship partner provides satisfaction of all the basic psychological needs (Gagné, 2003), by giving understanding and acknowledgement, and by providing individuals with opportunities for choice and by encouraging self-initiation (Deci et al., 1994; Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; Stone et al., 2009). In addition, an autonomy supportive person is responsive to the other, which includes providing positive feedback, and non-judgmental feedback about problems (Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; La Guardia, 2009; Stone et al., 2009)

#### *Autonomy support and close relationships*

As we have seen, individuals' natural tendency to internalise external regulations and values is dependent on a need supportive context, where an autonomy supportive relationship partner is the most important contextual factor providing this. This has also been found in studies using SDT within the work context, where an autonomous management style has been identified as one of the most important factors for employees to experience need satisfaction and autonomous motivation (Baard et al., 2004; Gagné and Deci, 2005; Gillet et al., 2012; Gillet et al., 2013; Gillet et al., 2015a; Olafsen et al., 2015; Deci et al., 2017). However, an autonomy supportive relationship partner has also been found to lead to attachment and intimacy (Ryan and Deci, 2006). Emotional reliance on others has therefore been

predicted by autonomy support (La Guardia et al., 2000; Ryan et al., 2005), and people feel most related to those who satisfy their basic psychological needs (Ryan and Deci, 2006). Individuals have reported that being in a close autonomy supportive relationship made them feel free to be themselves (La Guardia et al., 2000). Patrick et al. (2007) also found that being in a need supportive relationship lead to well-being, higher self-esteem, more positive affect, vitality, and better relationship quality. In addition, it has also been found that providing autonomy support to others contributes to basic psychological need satisfaction, enhanced relationship quality and well-being (Sheldon and Bettencourt, 2002; Deci et al., 2006).

Close and intimate relationships, that result from experiencing autonomy support, has also been found to positively influence the internalisation process (Ryan and Deci, 2006). Patrick et al. (2007) found that feeling related to others supported integration and motivation, and that being part of a group facilitated integration of values and behaviours that were communicated in that setting (Deci and Ryan, 2008a). The reason why autonomy supportive relationships facilitate internalisation therefore seems to be based on the fundamental human desire to belong and feel connected to others (Ryan and Deci, 2000a; Deci and Vansteenkiste, 2004; Deci and Ryan, 2008a). Autonomy supportive relationships, therefore lead to satisfaction of basic psychological needs, which again promote an optimal internalisation process of external values and regulations leading to autonomous motivation.

## 1.7 Understanding well-being

Well-being constitutes a broad term that has been used extensively in the literature (Carlquist, 2015). It has been measured in a variety of ways including affective experiences, life evaluations, personal preferences, by using eudaimonic perspectives and by assessing living conditions (Carlquist, 2015). In the current thesis, both eudaimonic and hedonistic understandings of the well-being concept are present. First, SDT is part of the eudemonic understanding of well-being, by defining basic psychological needs that are considered important for function regardless of the individual's own subjective experience (Ryan et al., 2008; Carlquist, 2015). Eudaimonic well-being is therefore, considered a more objective aspect of well-being (Carlquist, 2015), and SDT describes eudaimonia as a way of living, that includes pursuing meaningful goals in life, functioning optimally and striving to reach your personal potential (Ryan and Deci, 2001; Ryan et al., 2008). Eudaimonic living has been related to a wide array of positive outcomes including, well-being, experiencing a sense of meaning, vitality, and higher quality relationships (Ryan et al., 2008; Huta and Ryan, 2010). Eudaimonic well-being is also considered

important for experiencing hedonic well-being (Ryan et al., 2008), which is considered a more subjective understanding of the well-being concept related to experiences of affect and personal evaluations (Carlquist, 2015). Satisfaction with life focuses on the personal subjective experience of an individual's evaluation of his or her own life (Diener, 1984), and may therefore be considered part of the hedonistic understanding of the well-being concept (Carlquist, 2015). However, Pavot and Diener (2008) points out that a person's evaluation of satisfaction with life is based on much more information than just emotional experiences. It includes reaching important goals and having a sense of meaningfulness. This could indicate that satisfaction with life is a personal evaluation that contains both eudaimonic and hedonistic understandings of the well-being concept. In this thesis, satisfaction with life (Diener et al., 1985) will be used when describing the participants, and to gain a better understanding of how SHC was related to satisfaction with life for clients in prevocational training on care farms. Satisfaction of the basic psychological needs, postulated by the SDT, will be applied as a possible mediator in the relationship between SHC and satisfaction with life. In addition, basic psychological need satisfaction was used to gain a better understanding of the association between elements in the prevocational context and basic psychological need satisfaction. Considerations on how the elements in the prevocational context may lead to autonomous motivation, function and well-being will be inferred from the SDT and empirical work utilising the SDT framework.

## 1.8 Research gaps and aims

There are some important research gaps in the literature described above. First, even though SHC have been found to have negative consequences for function, well-being and work participation, there is still little research identifying psychological mechanisms that could clarify and contribute to the understanding of how SHC influence the life of some people in such a negative way. SDT, which is concerned with the foundation for motivation, optimal function and well-being (Deci and Ryan, 2000), offers a useful framework for investigating the relationship between SHC and satisfaction with life for clients on care farms. This understanding may be important because people outside the workforce, dependent on social welfare benefits, represent one of the groups with the highest number of symptoms in the population (Kjeldsberg et al., 2013). Insight about the possible mediator role of basic psychological need satisfaction in the relationship between SHC and satisfaction with life could therefore, give a better understanding of the life situation and health related problems that clients in prevocational training on care farms experience.

Further, the literature on prevocational training on care farms also has some gaps that are important to address. Haubenhofer et al. (2010) point to the lack of both quantitative and qualitative research on clients on care farms. The lack of systematic research also means that there is no systematic description of the care farm clients. In addition, there is a need for research that can give a better understanding of possible health promoting elements in the prevocational care farm context. This insight is particularly important as care farms already offer their services to many clients. SDT, which postulates that satisfaction of the three basic psychological needs are the foundation for motivation, function, and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b), also explains how different contexts vary in how supportive they are towards these basic psychological needs. A more comprehensive understanding of health promotion in the care farm context may therefore, be gained by investigating the association between different elements within the care farm context and satisfaction of the basic psychological needs for competence, relatedness and autonomy.

Addressing the gaps identified in the SHC literature and the literature on care farms by using the SDT, can provide more insight about clients in prevocational training on care farms and about how SHC influence satisfaction with life for these individuals. In addition, it can give a better understanding of the possible health promoting elements in the prevocational care farm context, which may be used to strengthening health promotion for clients in prevocational training on care farms.

The main aim of the thesis therefore, was to gain a better understanding of clients in prevocational training on care farms and of the possible health promoting elements in the care farm context by using the self-determination theory. The main aim will be addressed through four part aims:

1. Systematically describe clients participating in prevocational training on care farms in Norway (Paper I)
2. Investigate the relationship between the SHC musculoskeletal and psychological complaints and satisfaction with life, and explore the mediator role of basic psychological need satisfaction in this relationship (Paper I)
3. Investigate how specific elements in the prevocational care farm context are associated with satisfaction of basic psychological needs for the clients (Paper II)
4. Gain a deeper and broader understanding of the clients' lived subjective experience of participating in prevocational training on care farms, and consider these experiences in relation to basic psychological need satisfaction (Paper III)

## 2. Material and methods

### 2.1 Study design

This thesis contains three papers. Paper I and II are based on a quantitative method, whilst Paper III is based on a qualitative method. The combination of these two methods can be described as a mixed methods research design, also labelled the third research paradigm in addition to quantitative and qualitative research (Johnson and Onwuegbuzie, 2004; Johnson et al., 2007). Generally speaking, mixed methods is an approach that attempts to consider multiple viewpoints, perspectives, positions and standpoints including the standpoints of both quantitative and qualitative research (Johnson et al., 2007). The purpose of using mixed methods is therefore, based on the recognition that both quantitative and qualitative research is important and useful to increase the understanding of complex matters (Malterud, 2001).

In the current thesis a mixed method design was used for complementary purposes across studies (See Methodological issues section 4.5 for a discussion). Paper I and II were based on a national cross-sectional study where data was collected with a questionnaire. Clients who took part in prevocational training on care farms in the spring of 2011 and 2012 filled out the questionnaire. Paper III was based on data from ten semi structured qualitative interviews of clients in prevocational training on care farms in the spring of 2012. The cross-sectional study was conducted before the interview study, to obtain a richer and more in-depth understanding of the quantitative findings about basic psychological need satisfaction in the prevocational care farm context.

In this thesis, the term 'farmer' will be used when referring to the person responsible for the clients on the care farm, even though some participants were supervised by others. Results show that the absolute majority of participants reported that the farmer (69.0%) or the farmer's spouse (7.7%) had chief responsibility for the clients on the farm. Only 18.2% reported that a vocational rehabilitation coordinator or other employees on the care farm had the chief responsibility for the clients.

## 2.2 The cross-sectional study (Paper I and II)

### 2.2.1 Mapping of care farms and recruitment of participants

For the current project, we intended to reach as many active care farms offering prevocational training as possible. Because there was no official care farm register in Norway at the time of the data collection, an extensive mapping of all care farms in Norway offering prevocational training was conducted. The first step of the mapping process was to contact local care farm coordinators in each county in Norway to get information on active care farms. Lists of possible farms from coordinators in all 19 counties amounted to approximately 800 farms (see figure 1 for flow-chart). By studying the information about the farms included in these lists, and by examining a webpage presenting active care farms (<http://www.matmerk.no/no/inn-pa-tunet>), approximately 500 farms were excluded. The excluded farms provided services to user other than the current target group, were not certified as a care farm or did not have an active service on the farm.

The remaining 300 farms were then contacted by phone to invite the farmer to participate in the study, and to obtain information on the number of clients currently on the farm. Through this process 67 farms that did not have an active service on the farm or had no relevant clients on the farm, were excluded. In addition, 63 farms were in the process of stating up a service for adult clients on the care farm. Because these farms could be relevant to include for the data collection the year after, they were put on a waiting list to be contacted again at a later stage. After excluding these 130 farms, the remaining 170 farmers received the questionnaire by mail. The majority of this group included farmers who had accepted the invitation to participate in the study, but also farmers who were impossible to reach by phone or email received questionnaires in the mail spring of 2011, just in case they had relevant clients in prevocational training on the farm.

The farmers were then asked to hand out the questionnaire to clients who fulfilled the inclusion criteria of being of working age (18-67 years of age), out of work, dependent on different social welfare benefits from NAV, and who had attended the prevocational service on the care farm for at least one month. These clients then received an envelope from the farmer containing a letter with information about the current study, the questionnaire, an informed consent that was to be signed by the client, and a pre-paid return envelope. After approximately three weeks, care farms where none of the clients had returned the questionnaire, received a letter reminding the farmer to hand out the questionnaire. If no



questionnaires had been returned after another three weeks, the care farmer was contacted by phone for a second time to give a reminder and to gain information about possible reasons why clients had not returned the questionnaire. Then, in the spring of 2012, the 170 farms that had received questionnaires the year before were contacted by phone again. This time to map new clients that had started in the care farm service since the first round of data collection, and also to give farmers where no clients had answered the questionnaires, a new chance to participate. Therefore, 84 of the 170 farms that had received the questionnaire the year before, were also included in the data collection in 2012. In addition, of the 63 farms from the waiting list, 6 new farms were included. This resulted in 90 farms receiving questionnaires in the spring of 2012. The procedure described in relation to the first round of data collection, including letters to remind the farmer and phone calls to obtain information about missing answers, were also used for the second round of data collection.

Altogether, a total of 176 care farms received questionnaires in the spring of 2011 and 2012. Information provided by the farmers during the third round of phone calls, resulted in an additional 107 farms being excluded, because they either had no clients on the farm, the clients were not in the target group of the study or the service on the farm had been terminated. There were also 56 farms that we were not able to reach. We therefore had no information whether these farms had an active care farm service on the farm, or if they did have a service, why none of the clients returned the questionnaire. In total, we received questionnaires from clients on 69 different care farms (see flow chart figure 1). However, an additional four farms were excluded because of missing informed consents from clients. Thus, 201 participants from 65 farms were included in Paper I. For Paper II an additional seven farms were excluded because they only had one client on the farm, making it impossible to investigate the function of being in a group of other clients for basic psychological need satisfaction. Paper II therefore had a sample of 194 participants from 58 care farms (figure 1).

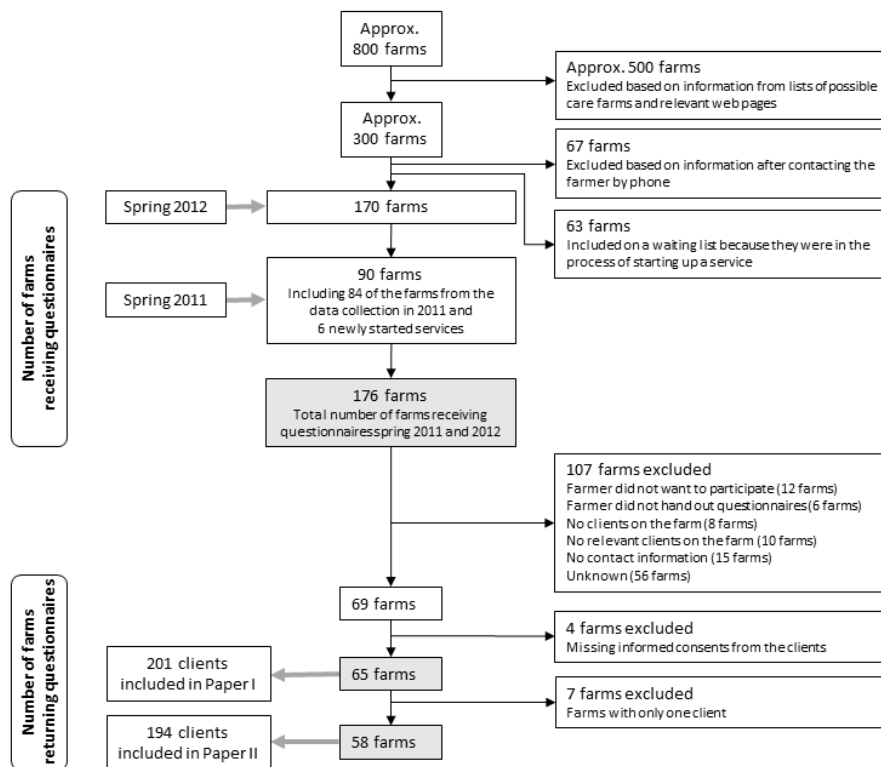


Figure 1. Flow chart illustrating the mapping process of farms and participants included in Paper I and II

### 2.2.2 Descriptive characteristics of participants

Descriptive characteristics of participants were based on data from Paper I, including 201 participants, because this was the larger sample taken from the survey. The sample consisted of 42.8% men and 57.2% women and the mean age was 35.7 years (SD 11.9, range: 19-65 years). Table 2 shows that a large proportion of participants were unmarried or divorced, with women reporting that they were married or living with a cohabitate significantly more often than men ( $\chi^2(4) = 21.264, p < 0.00$ ). This was also the only significant difference found for the descriptive characteristics between men and women in the sample. Further, participants generally reported a low level of education, and most had been outside the workforce for a considerable amount of time, with some completely lacking work experience.

Table 2. Proportion (%) of women and men in categories related to marital status, level of education and time out of work

Variables	Total (n=201) N (%) <sup>a</sup>	Women (n=115) N (%) <sup>a</sup>	Men (n=86) N (%) <sup>a</sup>
<b>Marital status</b>			
Unmarried	128 (63.7)	60 (52.2)	68 (79.1)
Divorced	24 (11.9)	13 (11.3)	11 (12.8)
Married/Partner/Cohabitant	44 (21.9)	38 (33.0)	6 (7.0)
<b>Education Level</b>			
Secondary school (up to 9 years)	81 (40.3)	47 (40.9)	34 (39.5)
Upper secondary School (10-12 years)	92 (45.8)	48 (41.7)	44 (51.2)
University/college (more than 12 years)	17 (8.5)	11 (9.6)	6 (7.0)
Other	8 (4.0)	6 (5.2)	2 (2.3)
<b>Time out of work when participant started attending the programme at the farm</b>			
0-1 year	41 (20.0)	25 (21.7)	16 (18.7)
1-2 years	33 (16.5)	18 (15.7)	15 (17.5)
2-5 years	40 (19.9)	23 (20.0)	17 (19.8)
More than 5 years	49 (24.4)	27 (23.5)	22 (25.6)
No work experience	33 (16.4)	19 (16.5)	14 (16.3)

<sup>a</sup> Values on categories do not add up to 100% due to missing values (range 1-3%)

### 2.2.3 Questionnaire

Data for Paper I and II was collected by a pen and paper self-reported questionnaire. The questionnaire was developed by the project group for the purpose of investigating prevocational training on care farms in Norway. The project group included the authors of Paper II, a researcher from the University of Wageningen, representatives of the two Norwegian farmers' unions, NAV, the Norwegian Directorate of Health and a user representative from the patient organisation for mental health. A range of questions eliciting demographic and background information, including sex, age, marital status and prior working situation was included. In addition, the questionnaire contained standardised scales measuring SHC (Eriksen et al., 1999), social support (Gabriele et al., 2011), basic psychological need satisfaction (Deci and Ryan, 2000; Gagné, 2003), satisfaction with life (Diener et al., 1985), and fascination and being away (Hartig et al., 1997).

The general need satisfaction scale was not available in Norwegian. The English version of the scale (Deci and Ryan, 2000; Gagné, 2003) was therefore translated into Norwegian for the purpose of this study, using back translation (Sperber, 2004). One translator translated the English version of the instrument into Norwegian, before another translator, blinded to the original instrument, translated the Norwegian

version back to English. The two translators had English as their first language, and both had lived and worked in Norway for more than 20 years. After the translations were completed, the two English versions of the scale were compared. The researchers in the project then made the final decisions about the wording of items in the Norwegian version of the instrument.

Further, questions regarding the prevocational training program, and the perception of participating in the program such as being a useful colleague, client group belonging, and work and contact with animals were also included. These questions were constructed through a collaboration with all relevant stakeholders in the project group, and on the basis of a qualitative study of clients participating in a farm animal-assisted intervention in a care farm context (Pedersen et al., 2012a). In addition, relevant questions were obtained from a large questionnaire designed at the University of Wageningen, to map the quality of care farms in the Netherlands. These questions were translated from Dutch to Norwegian by a person who was fluent in both languages. However, back translation was not applied when translating these questions due to practical issues and the time frame of the project. The specific standardised scales and questions used in the papers are described below, including a detailed description of the self-made questions, along with a table providing an overview of the variables used in Paper I and/or Paper II (table 3). A description of how the variables were prepared for statistical analysis, as well as Chronbach's alpha scores (Cronbach, 1951) for all relevant scales, can be found in the statistical analysis chapters for the two papers.

Table 3. Overview of variables in the questionnaire used in Paper I and II

	Paper I	Paper II
<b>Demographic and background variables</b>		
Age	x	x
Gender	x	x
Marital status	x	x
Educational level	x	x
Time out of work	x	x
<b>Variables describing the prevocational program</b>		
Who introduced you to the program on the farm?		x
How long have you participated in the program?		x
How many days per week are you at the farm?		x
Who is responsible for you on the farm?		x
What kind of work tasks do you do on the farm?		x
How many other clients are on the farm with you?		x
Are there animal on the farm?		x
Importance of the farm surroundings		x
<b>Perception of participating in the prevocational program</b>		
Being a useful colleague		x
Support from the farmer		x
Client group belonging		x
Work and contact with animals		x
Nature experiences		x
<b>Variables on health and functioning</b>		
Subjective health complaints	x	
Basic psychological need satisfaction	x	x
Satisfaction with life	x	

### *Being a useful colleague*

The participants' perception of being a useful colleague was measured with five statements; "There is always something meaningful for me to do here", "The activities are well-organised", "I feel like an equal part of a work group", "It is easy to feel useful on the farm", and "I feel inadequate working on the farm" (reversed). The statements were rated on a five-point Liker scale ranging from 1 (totally disagree) to 5 (totally agree). The first three items were obtained from a large questionnaire designed to map the quality of care farm services in the Netherlands. The last two items were constructed based on Pedersen et al. (2012a) qualitative study of clients participating in a farm animal-assisted intervention in a care farm context.

### *Support from the farmer*

The non-directive subscale (Fisher et al., 1997; Harber et al., 2005) of the Social support Inventory (Gabriele et al., 2011), which has been shown to be a reliable and valid instrument (Timmerman et al., 2000), was used to measure support from the farmer. The subscale contains eight support statements, e.g. "Made it easy to talk about anything you thought was important" that was rated on a five-point Likert scale ranging from 1 (not at all typical) to 5 (very typical).

### *Client group belonging*

The participants answered five statements about their experiences of belonging to a group of other clients on the farm. Statements included "I feel comfortable being with the other clients on the farm", "I am satisfied with the contact I have with the other clients", "I like the atmosphere here", "I think the size of the group is ok", and "I feel like I belong in the group". The statements were rated on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). All items about client group belonging were obtained from a large questionnaire designed to map the quality of care farm services in the Netherlands.

### *Work and contact with animals*

The participants answered six statements about their experiences of work and contact with animals on the care farm. Statements included "The work tasks related to taking care of the animals is important to me", "The physical contact with the animals is important to me", "The physical contact with the animals makes me calm", "It feels good to be close to and to care for the animals", "The benefit of working with animals outweighs the cost" and "The animals do not demand more than I can give". The statements were rated on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree). These six items were constructed based on Pedersen et al. (2012a) qualitative study of clients participating in a farm animal-assisted intervention in a care farm context.

### *Nature experiences*

Restorative qualities of the environment were measured with the Perceived Restorativeness Scale (PRS) (Hartig et al., 1997), which has been shown to be a valid and reliable instrument (Hartig et al., 1997). Ten items for measuring fascination and being away, applied by Gonzalez et al. (2010) were used. These items included five statements related to fascination, including "There is much to explore and discover

here”, and five statements related to being away, including “Being here gives me a break from my everyday routine”. Participants indicated how much they agreed with each statement on an 11-point Likert scale ranging from 0 (not at all) to 10 (completely).

#### *Subjective health complaints*

The participants answered the subjective health complaints inventory, which has been shown to be a reliable and valid instrument (Ihlebaek et al., 2004). Participants indicated on a 4-point scale (0 = not at all, 1 = a little, 2 = some, and 3 = severe) how they had experienced 29 common complaints during the last 30 days (Eriksen et al., 1999). The complaints can be divided into the five subscales; Musculoskeletal pains, Psychological complaints, Gastrointestinal problems, Allergy, and Flu (Eriksen et al., 1999). In this study, only the subscales musculoskeletal pains (headache, neck pain, upper back pain, lower back pain, arm pain, shoulder pain, migraine and leg pain during physical activity) and psychological complaints (extra heartbeats, heat flushes, sleep problems, tiredness, dizziness, anxiety and sadness/depression) were used in the main analysis.

#### *Basic psychological Need satisfaction*

The participants answered the general need satisfaction scale (Deci and Ryan, 2000; Gagné, 2003). Basic psychological need scales have been found valid and reliable for measuring need satisfaction in several domains in life (La Guardia et al., 2000; Vlachopoulos and Michailidou, 2006; Johnston and Finney, 2010; Van den Broeck et al., 2010). The participants evaluated items reflecting the extent to which their basic psychological need for competence (6 items), relatedness (8 items) and autonomy (7 items) were satisfied in their lives. The items were rated on a Likert scale ranging from 1 (not true at all) to 7 (completely true). The subscales consisted of items like “I often do not feel very capable” (competence), “People in my life care about me” (relatedness), and “I feel pressured in my life” (autonomy).

#### *Satisfaction with life*

Last, the participants answered the satisfaction with life scale (Diener et al., 1985), which is a valid and reliable measure of the global cognitive judgement of satisfaction with life (Pavot et al., 1991). The participants indicated on a seven point scale ranging from 1 (strongly disagree) to 7 (strongly agree) their agreement with five items like “In most ways my life is close to my ideal” and “the conditions of my life are excellent”.

#### 2.2.4 Statistical analysis Paper I

Statistics were performed using SPSS and AMOS version 23.0, and the level of statistical significance was set to 0.05. For descriptive purposes, the prevalence of reporting at least one SHC, of reporting at least one psychological or musculoskeletal complaint, and the prevalence of the most commonly reported single complaints were calculated, in addition to total number of SHC reported by an individual. Further, to be able to make comparisons with relevant literature, scores on satisfaction with life was divided into six categories (Diener, 2006) with three categories below the neutral mid-point of 20 points; Extremely dissatisfied, Dissatisfied, and Slightly dissatisfied, and three categories above the neutral mid-point; Slightly satisfied, Satisfied, and Extremely satisfied. Independent samples t-tests (continuous variables) and chi-square tests (categorical variables) were used to test for gender differences in variables including marital status, educational level, time out of work, number of SHC, severity of musculoskeletal and psychological complaints, prevalence on single complaints, mean basic psychological need satisfaction and satisfaction with life scores.

A structural equation model (SEM), where numerous linear models can be fit simultaneously was created to examine the mediator function of basic psychological need satisfaction in the relationship between musculoskeletal pains and psychological complaints and satisfaction with life (Baron and Kenny, 1986; Byrne, 2010). Individual answers on items of the musculoskeletal pains subscale ( $\alpha = .83$ ) and the psychological complaints subscale ( $\alpha = .82$ ) were summarised to create two observable variables reflecting the severity of such complaints (Eriksen et al., 1999), included in the model. Further, a latent variable named Need satisfaction was created from the observable mean scores on the subscales of competence ( $\alpha = .64$ ), relatedness ( $\alpha = .81$ ) and autonomy ( $\alpha = .64$ ). This latent variable therefore, represents a composite score of basic psychological need satisfaction, based on the mean scores of the three highly related variables of satisfaction on each of the basic psychological needs for competence, relatedness and autonomy. Last, an observable variable named Satisfaction with life was created by summarising the five items measuring satisfaction with life ( $\alpha = .90$ ). The SEM has three levels, created to investigate the possible mediator role (Baron and Kenny, 1986) of basic psychological need satisfaction in the relationship between musculoskeletal pains and psychological complaints and satisfaction with life. The first level in the model consisted of the two exogenous variables Musculoskeletal pains and Psychological complaints, while the second level consisted of the latent mediating variable Need satisfaction. The final level in the model was the endogenous variable Satisfaction with life.



To avoid excluding cases with missing variables (16.3%) from the SEM analysis, missing values (1.4% in total) were imputed using expectation maximisation (EM) (Peters and Enders, 2002; Sterne et al., 2009). Empirical finding within the SHC literature suggests that there are differences between men and women in relation to SHC (Eriksen et al., 1998; Ihlebæk et al., 2002; Indregard et al., 2013). A multigroup invariance test exploring possible gender difference was conducted on the full model including direct pathways between all exogenous and endogenous variables. The model was then calculated and reduced until non-significant regressions were removed. The invariance test showed significant gender differences, and men and women were therefore analysed separately resulting in two parsimonious models, one for men (figure 2) and one for women (figure 3). The parsimonious models were then re-run using the original data resulting in virtually similar models.

#### 2.2.5 Statistical analysis Paper II

Statistics were produced using SPSS and AMOS version 23.0, and the level of statistical significance was set to 0.05. Independent samples t-tests (continuous variables) and chi-square tests (categorical variables) were used to test for gender differences in variables including marital status, educational level, time out of work, and mean levels of Being a useful colleague, Support from the farmer, client group belonging, Work and contact with animals, Nature experiences and satisfaction of the three basic psychological needs. A SEM, where numerous linear models can be fitted simultaneously (Byrne, 2010), was used to examine the relationship between elements in the care farm context and satisfaction of the three basic psychological needs (figure 4). Answers on scales related to being a useful colleague ( $\alpha = 0.77$ ), support from the farmer ( $\alpha = 0.89$ ), client group belonging ( $\alpha = 0.88$ ), work and contact with animals ( $\alpha = 0.94$ ) and experiencing nature ( $\alpha = 0.88$ ) were averaged to create observable variables reflecting elements in the prevocational care farm context. Furthermore, answers on items measuring Satisfaction of the three basic psychological need were averaged to produce the observable variables Competence ( $\alpha = 0.63$ ), Relatedness ( $\alpha = 0.82$ ) and Autonomy ( $\alpha = 0.62$ ). There were two levels in the SEM constructed to investigating the association between elements in the prevocational care farm context and satisfaction of the three basic psychological needs. The first level consisted of the exogenous variables representing the elements of the farm context, while the second level consisted of endogenous variables representing the three basic psychological needs.

To avoid excluding the 20.6% of cases with missing variables, missing values (2.24% in total) were imputed using expectation maximisation (EM) in SPSS (Peters and Enders, 2002; Sterne et al., 2009). The

full model, including direct pathways between all exogenous and endogenous variables, was calculated and then reduced until non-significant regressions were removed to create a parsimonious model (Figure 4). The parsimonious model was then re-run using the original data, resulting in a virtually similar model. Last, a multigroup invariance test of the full model was conducted to check for possible gender differences. No significant differences were found between genders, and men and women were therefore treated as one group in the analysis.

## 2.3 The interview study (Paper III)

### 2.3.1 Research perspective

Because the aim of Paper III was to gain a deeper and broader understanding of the clients' experiences with prevocational training on care farms, we used a hermeneutic phenomenological perspective (Malterud, 2001). This approach makes it possible to develop descriptions of clients' experiences of the work and social interactions on the care farm and their perception of personal health and daily function. Secondly, we adapted the theoretical framework of the SDT (Deci and Ryan, 2000) to elaborate on the main themes identified in the analysis of the interviews. The application of a theoretical framework implies a hermeneutical approach (Kvale and Brinkmann, 2009) offering a way to understand the phenomena, as well as providing a basis for organising new insight (Silverman, 2005). The application of SDT therefore, by offering a theoretical perspective that describes the foundation for motivation, function and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b), can provide a better understanding of the clients' lived subjective experience of participating in prevocational training on a care farm.

### 2.3.2 Recruitment of participants

Clients from four care farms offering prevocational training (Green work) in Southern Norway were included in the study. At each particular care farm, the farmer aided in the purposeful sampling of participants (Coyne, 1997). The study was limited to individuals who: (1) participated in prevocational training (Green work); (2) were outside the workforce; (3) received some kind of welfare benefit arrangement through NAV; and (4) had been partaking in the prevocational training on the care farm for at least one month, but no longer than two years, prior to the interview. This resulted in a sample of 10 participants, consisting of two men and eight women between 20 and 42 years of age, who had

participated in the Green work program for between one month and one-and-a-half years at the time of the interview.

### 2.3.3 Interview guide and data collection

The data used in Paper III was obtained through semi-structured individual interviews using an interview guide (Kvale and Brinkmann, 2009). The interview guide was developed on the basis of earlier research identifying important elements of participating in care farm services (Hassink et al., 2010; Pedersen et al., 2012a). The interview guide focused on four main themes with several relevant subthemes (table 4), including; (1) experiences with activities and work tasks; (2) social relationships with the farmer and other clients; (3) perception of personal health; and (4) outlook on resuming ordinary work/education. It was emphasised before the start of the interviews that the interview guide only provided a suggestion of possible main themes, and that interviewees were welcome to bring forth other aspects of participating in prevocational training on care farms that they considered relevant. The interviews were conducted by the first and second author of Paper III. The second author was the main interviewer, whilst the first author took notes and ensured that all the relevant themes had been exhausted. All interviews were audio taped, and lasted between 26 and 65 minutes. The participants were interviewed on the care farm in the spring of 2012. All interviews were conducted in Norwegian.

Table 4. Main themes and subthemes used in the interview guide (Paper III)

Main themes	Subtheme
1 Activities and work tasks	In which activities or work tasks do you engage? How do you perceive your engagement in the activities/work? Do you work with animals/nature?
2 Relationship with the farmer/manager	How do you perceive spending time with the farmer/manager? How do you like working with the farmer/manager?
Relationship with the other clients on the farm	What do you do with the other clients on the farm? How do you perceive being with the other clients on the farm?
3 Perception of personal health	How do you experience your health now? Has this changed since you started working at the farm? What is it about the farm that contributed to that change?
4 Work and education	How do you perceive your current everyday situation? How do you see your possibilities for returning to work or education? Why do you think you can/cannot return to work/education? How do you view your future?

### 2.3.4 Data analysis Paper III

Interviews were transcribed verbatim by the second author, and N-Vivo software was used to aid the organising during the process of analysis. The transcripts were analysed in a four-step procedure according to a modified version of systematic text condensation inspired by Goirgi's phenomenological approach as described in Malterud (2003; 2012). The following analysis process was conducted by the first and last author. First, all the interviews were read several times to get a general sense of the material and to get an overall impression of the content related to the aim of the study. At the second stage of the analysis, the transcripts were reread before the two authors independently identified units of meaning that represented the participants' experiences with prevocational training on care farms, and different themes related to these experiences. At the third stage of analysis, involving abstracting the content of the units of meaning, the authors discussed and decided which units of meaning belonged to each subtheme as described in Malterud (2003). Last, the authors reviewed the transcripts to check that the evolving themes and subthemes reflected the meanings conveyed. Throughout this process, five main themes emerged labelled (1) structure and flexibility, (2) understanding and acknowledgement, (3) guidance and positive feedback, (4) nature and animals, and (5) reflections on personal functioning and the future.

### 2.4 Ethical considerations

Measurements taken in this research project to ensure the rights of the participants were in line with the declaration of Helsinki which describes the ethical principles for medical research involving human subjects (The World Medical Association, 1964).

There are important ethical issues related to how a research process may harm people, which must be considered when using human research subjects. One concern is that the research processes may potentially harm people that are already socially disadvantaged. It is often the case that an experimental subject is in a position of relative disadvantage, not only within the larger social system, but also within the research situation itself (Shrader-Frechette, 1994). In addition, scientific and technological research often involves potential risks as well as benefits. In 1982, the Swedish Council for Research in the Humanities and Social Sciences published four ethical principles for conducting research on humans to safeguard the rights of participants; (1) experimental subjects ought to give free informed consent to the researcher, (2) subjects have the right to decide the conditions under which they will participate, (3) no unauthorised person will have access to the data, and (4) the data cannot be used outside the

research project for commercial or non-scientific purposes (Shrader-Frechette, 1994). In the current research, an informed written consent was obtained from all participants. This informed consent also gave full disclosure about the project, contained information about the study and its purpose, and ensured the confidentiality and anonymity of the participants. In addition, the use of the farmer to reach clients in prevocational training on care farms was done in an attempt to ensure voluntary participation in the study. Last, participants were informed that they could withdraw from the study at any point of time without providing a reason. However, even with such principles for conducting research on humans, it is important to understand that researchers always find themselves in a conflict of interest. Researchers need subjects to obtain knowledge for research, at the same time, as they are obligated to protect the well-being of the research subjects (Shrader-Frechette, 1994). This conflict of interest means there is a need for external control. A research-ethics committee is therefore, often necessary to guarantee subjects the right to a free informed consent. The Norwegian Regional Ethics Committee for Southeast Norway (2010/2042) and the Norwegian Social Science Data Services approved the current study.

### 3. Main results

#### 3.1 Paper I

*“Satisfaction of basic psychological needs as a mediator in the relationship between subjective health complaints and satisfaction with life for people out of work”*

*Aim.* The aims of this paper was to systematically describe clients participating in prevocational training on care farms in Norway, and to investigate the relationship between musculoskeletal and psychological complaints and satisfaction with life, and explore the mediator role of basic psychological need satisfaction in this relationship.

*Methods.* A total of 201 adult participants attending prevocational training on 65 different care farms answered a questionnaire with questions providing demographic and background information, information about the stay on the farm and standardised instruments on SHC, basic psychological need satisfaction, and satisfaction with life. Descriptive data, prevalences and comorbidity of SHC and level of satisfaction with life were calculated to gain a better understanding of clients in prevocational training on care farms. Further, the cross-sectional data was used to create a SEM that examined the possible mediator function of basic psychological need satisfaction in the relationship between musculoskeletal pains and psychological complaints, and satisfaction with life. The choice to investigate satisfaction of basic psychological needs as a possible mediator in this relationship was based on the SDT. This theory postulates that different contexts and life situations can be more or less supportive of basic psychological need satisfaction, and further, how basic psychological need satisfaction influences motivation, function and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b). The first level in the model therefore consisted of the two SHC variables musculoskeletal pains and psychological complaints, the second level consisted of the mediating variable Need satisfaction, and the third level in the model consisted of the variable Satisfaction with life. A multigroup invariance test exploring the difference between men and women in the full model, showed a significant gender difference. Data for men and women were therefore analysed separately resulting in two models, one for men (figure 2) and one for women (figure 3).

*Results.* The sample consisted of 42.8% men and 57.2% women and the mean age was 35.7 years (SD 11.9, range: 19-65 years). A large proportion of participants were unmarried (63.7%) or divorced (11.9%) with women reporting that they were married or living with a cohabitate significantly more often than

men ( $\chi^2(4) = 21.264, p < 0.00$ ). Further, participants generally had a low level of education, with 86.1% reporting having completed lower or upper secondary school only. Most of the participants had been outside the workforce for a considerable amount of time, with 19.8% of men and 20.0% of women having been out of work for 2-5 years and 25.6% of men and 23.5% of women having been out of work for more than 5 years when they started in the prevocational training on the care farm. In addition, more than 16% of men and women reported that they completely lacked work experience.

Further, participants had a very high prevalence of SHC, as 99.5% had experienced at least one health complaint, and 63.5% had experienced ten or more complaints during the last 30 days. The most commonly reported single complaints for both men and women were headache, tiredness, anxiety, sadness/depression and sleep problems. The prevalence of psychological complaints was 90.0% (83.7% for men and 94.8% for women), and 86.0% for musculoskeletal complaints (77.9% for men and 92.2% for women). In addition, 81.0% (72.1% for men and 88.7% for women) reported having both musculoskeletal and psychological complaints. Last, the participants had low satisfaction with life, where 68.7% scored beneath the neutral point of the scale, being extremely dissatisfied (20.8%), dissatisfied (27.2%) or slightly dissatisfied (20.7%). Only 24.7% reported life satisfaction above the neutral point, being slightly satisfied (10.4%), satisfied (7.9%) or extremely satisfied (6.4%). Last, 5% had a neutral score, implying they were equally satisfied and dissatisfied with life.

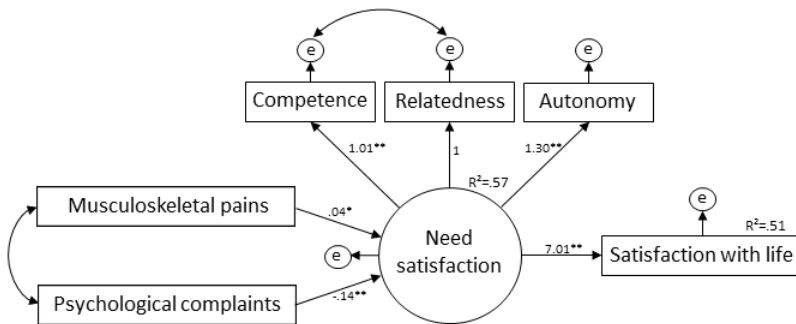


Figure 2. Structural equation model for men with standardised regression weights ( $\beta$ ) showing pathways between the variables Musculoskeletal pains and Psychological complaints, Need satisfaction, and Satisfaction with life.  $R^2$  values were given for each of the two dependent variables. e represents the measurement error associated with the latent and observed variables. Regression weights followed by \* were significant at a .05 level, and those followed by \*\* were significant at a .01 level.

The SEM for men showed that the negative relationship between psychological complaints and satisfaction with life was fully mediated by basic psychological need satisfaction (figure 2). Psychological complaints were negatively associated with basic psychological need satisfaction, which again was positively related to satisfaction with life. Musculoskeletal pains on the other hand, had a positive association with basic psychological need satisfaction, and was unrelated to satisfaction with life (figure 2). Fit indices showed an overall good fit of the model ( $X^2(7) = 9.34$ ,  $p > .05$ ;  $X^2/df = 1.33$ ; TLI = .981, CFI = .991, RMSEA = .063) (see statistical conclusion validity in section 4.5.1 for a discussion of fit indices).

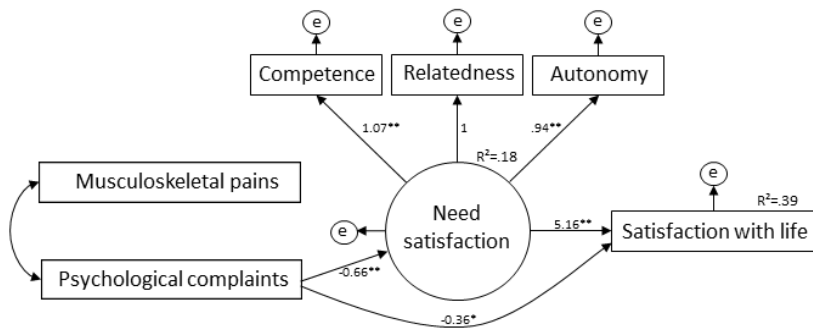


Figure 3. Structural equation model for women with standardised regression weights ( $\beta$ ) showing pathways between the variables Musculoskeletal pains and Psychological complaints, Need satisfaction, and Satisfaction with life.  $R^2$  values were given for each of the two dependent variables.  $e$  represents the measurement error associated with the latent and observed variables. Regression weights followed by \* were significant at a .05 level, and those followed by \*\* were significant at a .01 level.

For women the SEM showed that the negative relationship between psychological complaints and satisfaction with life was partly mediated by basic psychological need satisfaction. Psychological complaints were negatively associated with both basic psychological need satisfaction and satisfaction with life, and basic psychological need satisfaction had a positive relationship with satisfaction with life. Musculoskeletal pains were unrelated to basic psychological need satisfaction and satisfaction with life in the model (figure 3). Fit indices showed an overall good fit of the model ( $X^2(8) = 12.56$ ,  $p > .05$ ;  $X^2/df = 1.57$ ; TLI = .959, CFI = .978, RMSEA = .071).



### 3.2 Paper II

*“Understanding how prevocational training on care farms can lead to functioning, motivation and well-being”*

*Aim.* The aim of this paper was to investigate how specific elements in the prevocational care farm context are associated with satisfaction of basic psychological needs for the clients.

*Methods.* A total of 194 participants in prevocational training on 58 different care farms answered questions providing demographic and background information, as well as questions about who had introduced them to the program on the farm, how long they had attended the prevocational program, and about the size of the client group. The participants also answered questions about the importance of the farm surroundings, whether there were animals on the farm, and about the frequency of engaging in different activities and work tasks in the prevocational program. Last, questions reflecting participants’ perception of being a useful colleague, being supported by the farmer, being part of a client group on the farm, experiencing nature and animals, and experiencing basic psychological need satisfaction was also answered. The cross-sectional data was used to create a SEM to investigate the possible association between elements in the prevocational care farm context and satisfaction of the three basic psychological needs. The first level in the model represented the elements of the farm context, while the second level in the model represented the three basic psychological needs. The creation of the two levels in the SEM were theoretically anchored in the SDT, describing how different contexts can be more or less supportive of basic psychological need satisfaction (Deci and Ryan, 2000; 2008a).

*Results.* First, results showed that half of the participants had been introduced to the care farm by NAV, while 40% had been introduced to the program by other actors in the health care sector. It varied greatly how long participants had attended the program on the farm. While most (36.6%) reported attending the farm for 1–6 months, 22.6% had attended for 1–2 years and 20.6% for more than 2 years. With respect to the social community on the farm, most participants (38.1%) reported being at the farm with 4–6 other clients, 24.7% were in groups with 1–3 other clients, 16.5% were in groups with 10–15 other clients, and 14.5% were in groups with 7–9 other clients on the farm. The surroundings of the care farm were perceived as important or very important by 84.5% of participants. In addition, 90% of participants reported that there were animals at the farm, and 94.5% of women and 84.7% of men reported having worked with animals. In addition, 63.6% of participants reported that they engaged in

work and activities with animals very often, followed by 26.2% reporting that they engaged in firewood production very often. Cooking and preparing food and working with plants or in the garden were performed very often by 19.0% and 17.9% of the participants respectively.

Results from the SEM (figure 4) showed a positive association between feeling like a useful colleague and the basic psychological need for competence. Experiencing client group belonging was positively associated with the basic psychological needs for relatedness and autonomy. Last, support from the farmer was positively associated with all the three basic psychological needs for competence, relatedness and autonomy for the participants. All pathways displayed in the model were significant at the 0.01 level. The two variables work and contact with animals and nature experiences were excluded from the model because they were unrelated to satisfaction of any of the basic psychological needs. Fit indices showed an overall good fit of the model ( $\chi^2(3) = 4.728, p > .05; \chi^2/df = 1.576; TLI = .98, CFI = .996, RMSEA = .055$ )

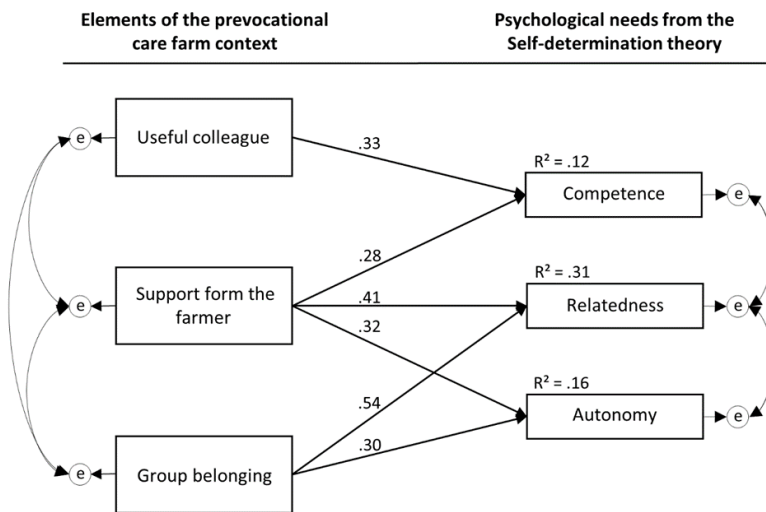


Figure 4. Structural equation model with standardised regression weights ( $\beta$ ) showing pathways between variables reflecting the care farm context; Useful colleague, Support from the farmer, and Group belonging, and the three basic psychological needs; Competence, Relatedness and Autonomy.  $R^2$  values were given for each of the three dependent variables. e represents the measurement error associated with the observed variables.

### 3.3 Paper III

*“Autonomy support and need satisfaction in prevocational programs on care farms: The self-determination theory perspective”*

*Aim.* The aim of this paper was to gain a deeper and broader understanding of the clients’ lived subjective experience of participating in prevocational training on care farms, and to consider these experiences in relation to basic psychological need satisfaction.

*Methods.* A hermeneutic phenomenological research design was applied, and ten semi-structured interviews were conducted. Transcripts were analysed using a modified version of systematic text condensation, and the five emerging themes were then elaborated on from the SDT perspective, to gain a deeper understanding of the clients’ lived subjective experience of participating in prevocational training on a care farm.

*Results.* Five main themes, each with subthemes, materialised during the analysis of the transcripts. These themes described the participants’ experiences within prevocational training on care farms. The first main theme, “everyday structure and flexibility”, had the subthemes “everyday structure and routine”, “social structure”, and “having choices and being challenged”. This theme reflected participants’ experience of having a daily routine and structure in life needed for participating in ordinary work, as well as descriptions of the structured working environment on the care farm. In addition, the theme reflected how participating in prevocational training on care farms gave participants an opportunity to have social contact with others, which seemed to be particularly important for those who used to have problems with social settings. This theme also captured the participants’ appreciation of a diverse care farm context which included having choices and being challenged.

Next, the second main theme “understanding and acknowledgement”, had the subthemes “relationship with the farmer/manager”, “relationship with other clients” and “feeling free to be yourself”. This theme reflected participants’ positive experience of being understood and acknowledged by the farmer and the other clients, and described a high degree of attachment and support present in these relationships. Last, the recurrent statement that participants felt free to be themselves was also an important part of this main theme.

Further, the third main theme, “guidance and positive feedback”, included the subthemes “guidance from the farmer/manager” and “positive feedback”. This main theme reflected how receiving guidance

and positive feedback from the farmer was important for a positive experience of engaging in work for the participants. Guidance also seemed to contribute to mobilising action and helped the participants to try new things, whilst positive feedback made the participants believe in themselves.

The fourth main theme “nature and animals”, included the subthemes “calmness and inner peace” and “giving and receiving care”. This main theme reflected some of the participants’ descriptions of how contact with animals and being in nature represented a break from the everyday stress. In addition, interaction with animals also gave several participants the feeling of being understood and of engaging in important work because it involved taking care of another living being.

The last main theme, “reflections on personal functioning and the future”, included the subthemes “psychological well-being”, “vitality and energy”, “newfound motivation” and “future plans”. This main theme comprised participants’ descriptions of how participation in the prevocational training program had lead to psychological well-being, including more positive mood, fewer negative thoughts, and enhanced feelings of being able to face difficulties, as well as having a newfound motivation towards moving on in life and resuming ordinary work.

## 4. General discussion

The main aim of this thesis was to gain a better understanding of clients in prevocational training on care farms and of the possible health promoting elements in the care farm context by using the self-determination theory. Before discussing the findings, main results will be summarised in short. In Paper I we found that participants in prevocational training on care farms had been out of work for a long time, had a high prevalence of SHC and a low level of satisfaction with life. Further, there was a negative association between psychological complaints and satisfaction with life. For men, basic psychological need satisfaction fully mediated the relationship between psychological complaints and satisfaction with life, while for women this relationship was only partially mediated. Further, in Paper II we found that for clients in prevocational training on care farms, feeling like a useful colleague was positively associated with satisfaction of the need for competence. Experiencing a sense of client group belonging was positively associated with satisfaction of the needs for relatedness and autonomy, while receiving support from the farmer was positively associated with satisfaction of all three basic psychological needs. The two variables work and contact with animals and nature experiences were not associated with basic psychological need satisfaction in the SEM. Last, in Paper III we found five main themes materialising from the interview data, describing participants' experiences within the prevocational training context. The main themes were; (1) everyday structure and flexibility; (2) understanding and acknowledgement; (3) guidance and positive feedback; (4) nature and animals; and (5) reflections on personal functioning and the future.

The discussion of the results will be divided into three main parts. The first part will be based on findings presented in Paper I, and answers the first and second aim of the thesis with a focus on gaining a better understanding of clients participating in prevocational training on care farms. The second part of the discussion will be based on both the quantitative findings in Paper II and the qualitative findings in Paper III, and answers the third and fourth aim of the thesis. This part of the discussion will focus on gaining a better understanding of the possible health promoting elements in the prevocational care farm context. The third main part of the discussion will consider methodological issues related to the process of conducting the research presented in the thesis.

## 4.1 Clients in prevocational training on care farms

Understanding and insight into the life situation and challenges of clients in prevocational training on care farms is the basis for developing optimal rehabilitation contexts that can handle individuals' struggles and create opportunities for health promotion. The first and second part aims of the thesis therefore, concerned the clients in prevocational training on care farms. First, characteristics of the clients will be discussed, before the relationship between musculoskeletal and psychological complaints and satisfaction with life, with a focus on the possible mediator role of basic psychological need satisfaction, will be elaborated upon.

### 4.1.1 A systematic description of clients in prevocational training on care farms

The general lack of studies systematically investigating active care farms with prevocational training also means that knowledge about this client group has been scarce. The current results showed that participants in this study were relatively young and reported low levels of education, compared to participants in eight vocational rehabilitation clinics in Norway (Øyeflaten et al., 2016). These are factors that have been associated with a greater risk of unsuccessful return to work for a variety of clients in different vocational rehabilitation programs (Selander et al., 2002; Gjesdal and Bratberg, 2003; Allebeck and Mastekaasa, 2004; Hansen and Ingebrigtsen, 2008; Piha et al., 2010; Sumanen et al., 2015). Further, the participants had been outside the workforce for a substantial amount of time, compared with participants in Norwegian vocational rehabilitation clinics (Øyeflaten et al., 2016) and 16% had no work experience at all. This could indicate that clients in prevocational training on care farms have a relatively weak connection to the ordinary workforce. This may also have negative consequences for the return to work process, as long-term sick-leave, being fully sick-listed prior to starting a vocational rehabilitation program, or not having a job to return to, have been found to make it more unlikely to return to work (Heikkilä, 1998; Marnetoft et al., 2001; Selander et al., 2002).

Further, the participants' high level of SHC and low satisfaction with life also indicated that clients in prevocational training on care farms could face a challenging return to work process. First, the participants reported a very high prevalence of SHC. In addition, the number of complaints and the level of comorbidity were high. Further, musculoskeletal pains were commonly reported, which have been found to be one of the main reasons for sick-leave and disability (Brage et al., 2010). However, psychological complaints were most commonly reported by the participants, and the level of these

complaints were high in comparison with levels found in the normal population (Ihlebaek et al., 2002). The relatively low age of the participants and the high degree of psychological complaints, could therefore reflect the general trend that mental illness has become a main cause for long-term sick-leave and new disability payments for young people.

Contrary to other studies (Eriksen et al., 1998; Ihlebaek et al., 2002; Indregard et al., 2013), there was no significant difference between men and women regarding the number of complaints. One could speculate that the generally high number of complaints reported by the participants means that differences between the genders diminish. However, women still reported a higher severity of psychological and musculoskeletal complaints compared to men. The high level of SHC found in the current study, is in line with Kjeldsberg et al. (2013), who found that individuals outside the workforce, dependent on social welfare benefits, constitute a group that reports some of the highest number of symptoms in the population. The high level of SHC, may also indicate that clients in prevocational training on care farms may be at risk of experiencing several health and functional problems including difficulties related to returning to ordinary work (Tveito et al., 2002; Tveito et al., 2004; Kamaleri et al., 2008a; Kamaleri et al., 2008b; 2009; Brage et al., 2010; Roelen et al., 2010; Bruusgaard et al., 2012; Poulsen et al., 2013).

Further, participants reported low levels of satisfaction with life, with the majority reporting being more dissatisfied than satisfied with their lives. This is low in comparison with findings from other Western countries (Pavot and Diener, 1993), and may indicate that most clients in prevocational training on care farms have serious difficulties in multiple areas of life (Diener, 2006). Overall, the systematic description of the participants indicates that clients in prevocational training on care farms constitute a group of individuals that struggle in life, having a potentially challenging and long-lasting return to work process ahead of them.

#### 4.1.2 Subjective health complaints and satisfaction with life

The description of the participants has already revealed that clients in prevocational training on care farms seem to have a high level of SHC. Understanding how SHC influence satisfaction with life could be important for developing a more optimal prevocational training context for these clients. The second aim of the thesis therefore, was to investigate the possible mediator role of basic psychological need satisfaction in the relationship between SHC and satisfaction with life for clients in prevocational training on care farms.

In Paper I, the SEMs for both men and women showed that a high degree of psychological complaints was negatively associated with satisfaction with life. This is in accordance with other studies describing several possible negative consequences of SHC for the individual (Tveito et al., 2002; Tveito et al., 2004; Kamaleri et al., 2008a; Kamaleri et al., 2008b; 2009; Brage et al., 2010; Roelen et al., 2010; Bruusgaard et al., 2012; Poulsen et al., 2013). Further, basic psychological need satisfaction was identified as a mediator in the relationship between psychological health complaints and satisfaction with life. For men, basic psychological need satisfaction fully mediated the relationship between psychological health complaints and satisfaction with life, while for women this relationship was only partially mediated by basic psychological need satisfaction. Even though the psychobiological mechanisms leading to SHC have been described in the literature (Ursin, 1997; Brosschot, 2002; Eriksen and Ursin, 2004), the current findings give important insight about a psychological mechanism that may be at play when people already have developed a high level of complaints. Specifically, satisfaction of basic psychological needs seems to be one mechanism that partially explains the negative relationship between psychological complaints and satisfaction with life.

Experiencing psychological complaints therefore, is negatively associated with satisfaction of basic psychological needs, which is part of the eudaimonic well-being concept (Ryan et al., 2008; Carlquist, 2015). According to SDT, eudaimonic living is important for positive human growth, functioning and autonomous motivation (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Vansteenkiste, 2004; Deci and Ryan, 2008b). On the other hand, satisfaction with life, based on individual evaluations, is a more subjective aspect of well-being, related to hedonism (Diener, 1984; Carlquist, 2015). Eudemonic well-being has been found to influence hedonistic well-being (Ryan and Deci, 2001; Ryan et al., 2008), which may explain the strong positive association between basic psychological needs satisfaction and satisfaction with life that was found. It therefore, seems that for clients in prevocational training on care farms, experiencing a high degree of psychological complaints may stand in the way of living a functional life, which again seem to makes these clients less satisfied with their lives.

The mediator function of basic psychological need satisfaction in the relationship between psychological complaints and satisfaction with life, was similar for men and women. The only significant difference found in the multigroup invariance test, investigating differences between men and women in the SEM, was the strength of the relationship between psychological complaints and basic psychological need satisfaction. Even though this relationship was present in the models for both men and women, the negative association that was found between psychological complaints and basic psychological need



satisfaction was significantly stronger for men compared to women. This could explain why for men, the relationship between psychological complaints and satisfaction with life was fully mediated by basic psychological need satisfaction, while this relationship was only partially mediated for women. It therefore seems that experiencing a high degree of psychological complaints makes it more difficult to satisfy basic psychological needs for men than for women, even though women had a higher degree of these health complaints. This vulnerability to experiencing psychological complaints for men, is also in line with Gjesdal et al. (2008) findings that of individuals on certified sick-leave with a psychiatric diagnoses, men had a higher risk of transitioning to disability pension compared to women. One possible explanation for this gender difference could be the differences in vulnerability, risk factors, and coping strategies that have been found between men and women in relation to experiencing and developing mental health problems (Rosenfield and Mouzon, 2013). One example is that women often have larger primary social networks, and are more inclined to engage in close social ties (Rosenfield and Mouzon, 2013), which could provide an alternative way of supporting the satisfaction of basic psychological needs. This could also explain why, despite women having a higher severity of psychological complaints, no differences were found in relation to satisfaction with life between the genders.

Last, it was somewhat surprising that musculoskeletal pains did not influence satisfaction of basic psychological needs and satisfaction with life in the same way as psychological complaints did. However, anxiety and depression have been found to have a high explanatory power for functional status (Eriksen et al., 1998; Duddu et al., 2008). It therefore, makes sense that psychological complaints have such a strong negative association with basic psychological need satisfaction, as these needs are essential for functioning and well-being according to SDT (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Vansteenkiste, 2004; Deci and Ryan, 2008b). On the other hand, there may be other factors or mechanisms more related to physical functioning, that could be important for understanding how musculoskeletal pains influence individuals in different ways. This has also been corroborated by a recent study by Øyeflaten et al. (2016), who identified poor physical function as a mediator in the relation between musculoskeletal complaints and fear avoidance beliefs for patients in vocational rehabilitation.

The understanding that basic psychological need satisfaction was one important mechanism mediating the negative relationship between psychological complaints and satisfaction with life, gives new insight about the clients participating in prevocational training on care farms. First, rather than focusing too

much on attempting to treat the often chronic health complaints, the focus could be on strengthening possibilities for experience basic psychological need satisfaction for the clients. Because basic psychological need satisfaction was positively associated with satisfaction with life, such a focus could also diminish the negative relationship between psychological complaints and satisfaction with life. From the SDT perspective, basic psychological need satisfaction could therefore be important for counteracting some of the negative consequences associated with having a high degree of psychological health complaints by facilitating autonomous motivation, function, and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Vansteenkiste, 2004; Deci and Ryan, 2008b). These findings are also corroborated by Opsahl et al. (2016) recent study showing that among individuals with chronic lower back pain, the individuals' expectancies of return to work was most strongly associated with successful return to work (Opsahl et al., 2016). From the SDT perspective, satisfaction of basic psychological needs would be one way of facilitating motivation and optimal functioning, that could also lead to a more positive belief of being able to return to work.

Overall, the current findings provided a better understanding of the clients in prevocational training on care farms. First, it became clear that these clients may have a long and difficult rehabilitation process back to work ahead of them. They displayed a range of characteristics that has been related to unsuccessful return to work and functional problems, including their marital status, low level of education, long time outside the workforce, high level of SHC, and low level of satisfaction with life. Further, according to the understanding of the well-being concept and the SDT, results indicated that the clients' high degree of psychological health complaints obstructs their chance of experiencing satisfaction of basic psychological needs, related to eudaimonic well-being and functioning, which again may have negative consequences for their satisfaction with life. To aid the rehabilitation process and facilitate return to work for these individuals, it therefore becomes important to have a better understanding of how elements in the prevocational training context on care farms may be related to basic psychological need satisfaction for the clients.

#### 4.2 Understanding possible health promoting elements in prevocational training on care farms

There is currently little systematic research on active care farms investigating the importance of the farmer and the farm context in relation to basic psychological need satisfaction. According to SDT, basic psychological need satisfaction is a psychological mechanism explaining how a context can lead to

motivation, function and well-being (Deci and Ryan, 2000; Ryan and Deci, 2000b; Deci and Ryan, 2008a; b). The SDT therefore represent a relevant framework for gaining a better understanding of the possible health promoting elements in the prevocational training context. This section of the discussion will address the third and fourth aim of the thesis. Results from the SEM in Paper II, showed that being a useful colleague, support from the farmer and client group belonging were elements of the farm context that were positively associated with basic psychological need satisfaction in different ways. Further, the interviews in Paper III resulted in five main themes describing the lived experience of the prevocational care farm context for participants. These findings will be discussed in relation to the main elements of the care farm context identified in the literature review; activities and practical work, nature and animals and the social community. Both complementing and diverging results will be highlighting to give a more comprehensive understanding of the relationship between the care farm elements and basic psychological need satisfaction. After the main results have been discusses, the SDT will be used to elaborate on possible theoretical implications of experiencing basic psychological need satisfaction for client in prevocational training on care farms. In this section, the last main theme found in the interview study in Paper III will also be included to help understand some of the possible consequences of experiencing basic psychological need satisfaction in the prevocational care farm context for the clients.

#### 4.2.1 Activities and practical work

The variable being a useful colleague, reflected feeling like an equal part of a working group, feeling useful, mastering the work tasks on the farm, engaging in meaningful tasks, and experiencing the activities on the farm as well organised. In the SEM in Paper II, being a useful colleague was positively associated with satisfaction of the need for competence for the participants. SDT describes the need for competence as the need to be effective in dealing with the environment (Deci and Ryan, 2000). From this theoretical perspective, having the opportunity to feel like a useful colleague on the farm may be important for experiencing satisfaction of the basic psychological need for competence. These findings are also in accordance with previous research on care farms, which has found that work and activities on care farms promote opportunities for clients to learn new skills, and re-build confidence and self-efficacy (Berget et al., 2007; Elings and Hassink, 2008; Hine et al., 2008; Pedersen et al., 2012a; Pedersen et al., 2012b).

One aspect of the variable being a useful colleague, was also reflected in the first main theme identified in the interview study in Paper III, labelled “everyday structure and flexibility”. This theme described

how participants valued the structured work environment on the care farm, as well as getting an overall structure in life by participating in the prevocational training, including getting up in the morning and coming to work on specific days every week. Interestingly, even though participants indicated that partaking in work and following the daily routine was sometimes experienced as demanding, they still described it as personally important and useful for learning how to work. From the SDT perspective, structure has been found to support satisfaction of the need for competence. La Guardia (2009) found that parents and teachers providing a clear structure for children, created opportunities for the children to develop their skills in an optimal way. Participants' appreciation of a structured work environment found in the interview study, could therefore reflect the importance of structure in creating environments where individuals can develop and obtain new skills. Previous research on care farms has also found that participation in work tasks and activities provides a structure to commonplace and daily routines for the clients (Hassink et al., 2010). In addition, Elings et al. (2008) pointed out that the routine of working on the care farm could acclimatize the clients to the structure of ordinary employment.

Overall, based on the SDT, the current results indicate that participating in activities and practical work where clients feel useful and master the tasks within a structured and well-organised work environment, may contribute positively to the satisfaction of the need for competence. Work tasks and activities on the care farm often entail contact with animals and being in nature, and nature and animals was also one of the main elements identified in the literature review in the introduction.

#### 4.2.2 Nature and animals

"Nature and animals" was the fourth main theme emerging from the interview study in Paper III. This theme reflected that working and having contact with animals and experiencing nature was highly appreciated by some participants. Descriptions showed that these activities offered a break from everyday stressors and provided a sense of inner peace. Having contact with animals also gave participants a sense of being understood and having someone to turn to, and taking care of animals was experienced as important because it involved taking care of another living being. Working and having contact with animals and experiencing nature were not associated with basic psychological need satisfaction in the SEM in Paper II. However, the experiences of working with animals and being in nature found in the interview study were supported by other results from the cross-sectional study. These results showed that work that involved taking care of animals was the most commonly performed

work task on the care farm for the majority of the participants. In addition, almost all participants reported that they valued the nature surroundings of the farms they attended.

Others have also found that working and having contact with animals may lead to an experience of being understood and having someone to turn to. Animals have been found to provide closeness and warmth (Pedersen et al., 2012a), and make care farm clients feel comfortable, calm (Pedersen et al., 2012a; Kogstad et al., 2014), and safe (Hassink et al., 2010; Kogstad et al., 2014). Hassink et al. (2010) also found that clients felt they could share their problems with animals without being judged. In addition, descriptions that taking care of living animals may give a sense of doing something important and meaningful, has also been found by Hassink et al. (2010) and Granerud and Eriksen (2014). In addition, the literature on care farms also suggests that working with animals may increase self-efficacy and mastery (Berget et al., 2008; Pedersen et al., 2011; Pedersen et al., 2012b; Granerud and Eriksson, 2014), as well as lead to better coping and mental health for clients (Berget et al., 2011; Pedersen et al., 2011; Pedersen et al., 2012b). Our results, suggest that providing clients with the opportunity to work with animals in the prevocational context may be stress relieving and give clients a feeling of being understood and having someone safe to turn to if needed.

Further, the finding that most participants appreciated the nature surroundings of the farm, as well as the reflections by some participants that nature provided a break from everyday stress, are also previously described in the care farm literature. Participation in horticulture activities has been found to reduce stress and positively influence attention capacity and mental health for clients, through the nature experiences of fascination and being away (Gonzalez et al., 2009; Gonzalez et al., 2010; Gonzalez et al., 2011). In addition, Hassink et al. (2010) found that clients on care farms appreciated the opportunity to work outside, and being in nature has been found to induce calmness and provide a space where clients could retract from the group if they need to be alone (Elings and Hassink, 2008; Hine et al., 2008; Hassink et al., 2010). The current results therefore indicate that having the opportunity to experience nature may be highly appreciated by clients in prevocational training on care farms, and descriptions showed that clients also seem to benefit from the stress reducing and restorative capacity of being in nature.

The variables work and contact with animals and nature experiences were not associated with satisfaction of any of the basic psychological needs in the SEM in Paper II. This was somewhat surprising considering the many positive experiences and outcomes related to working with animals and

experiencing nature described above. In addition, the main theme “nature and animals” identified in the interview study and the findings from the cross-sectional study, indicated that clients on care farms seemed to enjoy working with animals and appreciated the nature surroundings on the farm. However, because the items measuring work and contact with animals were scored very high by almost all participants, the variable could have reached a ceiling effect where an independent variable no longer influences the dependent variable. Another possible explanation why working and having contact with animals was not associated with basic psychological need satisfaction in the SEM, may be that the variable being a useful colleague also captured aspects of participant’s experiences of working with animals. Last, the variable nature experiences was based on fascination and being away. These are restorative qualities of the environment outlined in the Attention restoration theory (Kaplan and Kaplan, 1989). Nature experiences could therefore, be more closely related to concepts of mental restoration and stress reduction than to satisfaction of basic psychological need satisfaction. This was also corroborated by the descriptions found in the interview study, that being in nature was experienced as stress reducing.

Overall, the results indicate that even though working and having contact with animals and experiencing nature was not associated with satisfaction of basic psychological needs in the SEM in Paper II, activities that involve caring for animals and being in nature seem to be both popular and much appreciated by clients in prevocational training on care farms. Especially, results indicate that clients may benefit from the potential of these activities and experiences to provide stress relief and closeness for the clients.

#### 4.2.3 The social community

For clients in prevocational training, the social community on the farm includes having a relationship with the farmer as well as spending time with the other clients. In Paper II, the SEM showed that receiving support from the farmer and experiencing client group belonging, had some similarities and differences in how they were related to basic psychological need satisfaction for the participants.

First, one similarity to receiving support from the farmer and feeling a sense of client group belonging was that both these elements were positively associated with satisfaction of the basic psychological needs for relatedness and autonomy. However, a difference was that support from the farmer also was positively associated with satisfaction of the basic psychological need for competence. SDT describes the basic psychological need for relatedness as a need to be connected to and care for others (Deci and Ryan, 2000), while the basic psychological need for autonomy reflects the human need to experience

volition and be a causal agent (Deci and Ryan, 2000). From the SDT perspective, the social community, including receiving support from the farmer and feeling a sense of client group belonging, therefore seems to give clients on care farm a chance to feel connected to and care for others as well as feeling free to engage from their own volitional selves. Further, the need for competence reflects the need to be effective in dealing with the environment (Deci and Ryan, 2000), and the results indicate that support from the farmer may also play an important role in making the clients feel effective in dealing with the care farm environment. By also being positively associated with satisfaction of the basic psychological need for competence, support from the farmer was positively associated with all the basic psychological needs.

These findings indicate that the social community on the care farm may be important for satisfaction of basic psychological needs for the clients. Especially the farmer seems to be an autonomy supportive person. Support from the farmer was positively related to all the three basic psychological needs for the clients, and the effect of autonomy support has been found to be mediated by basic psychological need satisfaction Gagné (2003). Further, an autonomy supportive person is described as someone who believes in others, provides a good rationale for engaging in activities, gives choices, acknowledges feelings and encourages others to take initiative (Williams et al., 2002). However, before continuing this discussion, it is useful to consider the findings from the interview study presented in Paper III. These findings provide a better understanding of how clients experience the social community on the farm. By considering these experiences from the SDT perspective, they can give more insight into the possible basic psychological need supportive role of the relationships on the farm. In addition, the findings may give a clearer understanding of the differences and similarities that were found in how support from the farmer and having a sense of client group belonging were associated with basic psychological need satisfaction in the SEM.

To begin with, the second main theme “understanding and acknowledgement” identified in the interview study, entails a shared aspect of how participants experienced the relationships with the farmer and the other clients on the farm. Namely, that both these relationships made the participants feel understood and acknowledged. Getting this understanding and acknowledgement seemed to be important for having close relationships with a high degree of attachment on the farm. In addition, feeling understood and acknowledged was also important for participants, as it made them feel that they could be true to themselves. The farmer was described as someone giving both instrumental and

emotional support, whilst being part of a client group was appreciated because the participants could help and support each other.

According to SDT, providing understanding and acknowledgement to others reflects an autonomy supportive relationship partner (Deci et al., 1994; Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; Stone et al., 2009). Further, experiencing basic psychological need satisfaction in relationships has been associated with more secure attachments to others, and better relationship quality in addition to greater individual well-being, higher self-esteem, and more positive affect (Patrick et al., 2007). Emotional reliance on others is therefore, facilitated by having a relationship partner who supports basic psychological need satisfaction (La Guardia et al., 2000; Ryan et al., 2005; Ryan and Deci, 2006). La Guardia et al. (2000) also found that individuals feeling autonomous in a relationship, were true to themselves, experienced greater attachment, security, and more relationship satisfaction. The descriptions of a close and supportive social community where participants felt understood, acknowledged and free to be themselves, underline the positive association that was found between support from the farmer and client group belonging and basic psychological need satisfaction. In addition, it may also reflect a care farm context that is supportive of basic psychological need satisfaction for the clients. Also the positive feeling of helping other clients, described by the participants in the interview study, has been corroborated by research showing that giving autonomy support to others, as well as receiving it, will satisfy basic psychological needs, and increase relationship quality and psychological well-being (Sheldon and Bettencourt, 2002; Deci et al., 2006).

Further, the third main theme “guidance and positive feedback” captured an aspect of the social community on the care farm that was mainly related to participants’ relationship with the farmer. This theme reflected the participants’ experiences of being guided when engaged in work activities on the care farm. Participants described how receiving guidance was important to help mobilize action, and that it helped them to push themselves into trying new things and to find solutions and be independent. Further, receiving guidance was also closely connected to receiving positive feedback from the farmer, which made the participants believe in themselves. A farmer guiding the participants during work engagement and providing positive feedback, could have made the participants feel more effective in dealing with the care farm environment (Deci and Ryan, 2000). This could therefore, provide a better understanding of why only support from the farmer, and not client group belonging, was positively related to satisfaction of the basic psychological need for competence in the SEM in Paper II. Providing guidance and positive feedback, and including others in solving problems, has also been related to an



autonomy supportive engagement style (Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; Stone et al., 2009).

Last, the first main theme, “everyday structure and flexibility” contains descriptions of the care farm environment that may also be related to the possible autonomy supportive role of the care farmer. First, this theme reflected participants’ appreciation of having a diverse and flexible work environment on the care farm, which included having choices, having the possibility to follow interests, and being challenged. This indicates that the farmer may be an autonomy supportive relationship partner, as psychological need satisfaction has been found to be facilitated by providing others with opportunities for choice, by encouraging self-initiation and by providing challenges (Deci et al., 1994; Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a). In addition, participants described the farm environment as flexible, because they could choose to do something other than the usual work tasks on the farm on days when they were not feeling good. This flexibility provided by the farmer, also meant the participants could come to the farm even on days when they did not feel like working. They therefore could receive emotional support from the other clients and the farmer when it was needed the most. This type of flexibility, seems to be closely tied to the farmer providing understanding and acknowledgement for the clients, as described in the second main theme above.

From the SDT perspective, receiving understanding and acknowledgement from the farmer and the other clients, as well as working in groups where clients can support each other, may be elements that support the satisfaction of basic psychological needs. Further, results from the SEM indicated that the farmer may be an autonomy supportive person for the clients. Results from the interview study also corroborated this. It showed that the farmer in addition to giving understanding and acknowledgement to the participants also provided guidance and positive feedback, choices and challenges when participants engaged in work activities, and a flexible work environment that gave the participants the opportunity to come to the farm even on days they were not feeling good. From the SDT perspective, these descriptions of the farmer’s role on the care farm are in line with the understanding of an autonomy supportive person. Because an autonomy supportive relationship partner is seen as the most important contextual factor facilitating autonomous motivation (Deci et al., 1994; Gagné and Deci, 2005; Deci et al., 2006; Deci and Ryan, 2008a; Stone et al., 2009), the farmer seems to hold a unique role in relation to basic psychological need satisfaction within the prevocational care farm context for the clients. Although the farmer in prevocational training on care farms is not considered an employer or manager, this finding is supported by the research literature on SDT within the ordinary work context,

where the manager's supportive role is described as essential with regards to satisfying basic psychological needs and facilitating autonomous motivation for the employees (Baard et al., 2004; Gagné and Deci, 2005; Gillet et al., 2012; Gillet et al., 2013; Gillet et al., 2015a; Olafsen et al., 2015; Deci et al., 2017).

Enders-Slegers (2008) has stated the need to focus on the social community and the farmer-client relationship on care farms. Iancu et al. (2014) also pointed to the need for understanding the role of the farmer in a more recent publication. These findings, discussing the social community on the care farm by using SDT, offer an insight into how basic psychological need supportive relationships can be developed, and why they may hold a unique position in the care farm context for the clients. This insight both extends and corroborates earlier research on care farms, describing the farmer as a close and personally involved individual (Hassink et al., 2010; Pedersen et al., 2012a), providing support and guidance to the clients (Elings and Hassink, 2008; Hassink et al., 2010; Pedersen et al., 2012a). Also, the positive experience of belonging to a client group is in accordance with the care farm literature, showing that being part of a client group increases the feeling of security and acceptance (Elings and Hassink, 2008; Hassink et al., 2010; Iancu et al., 2014), and that giving acceptance and respect to others contributed to mental well-being for the clients (Elings and Hassink, 2008). In addition, participants' descriptions of a flexible and diverse care farm environment, has been found in other research where a flexible work environment has been described as having the freedom to switch between activities according to interests and level of functioning (Elings and Hassink, 2008; Iancu et al., 2014).

#### 4.3 The value of basic need satisfaction

So far, the discussion of the results in relation to the SDT, suggests that supporting basic psychological need satisfaction for clients in prevocational training on care farms may counteract some of the negative consequence a high degree of psychological health complaints may have for satisfaction with life. In addition, several elements in the prevocational training context, including feeling like a useful colleague and being part of a supportive social community, may be important for supporting basic psychological need satisfaction for the clients. Next, the theoretical perspective of SDT will be applied to understand the possible value of experiencing basic psychological need satisfaction for clients in prevocational training on care farms. In this section, the last main theme found in the interview study will also be included to help understand some of the possible consequences of experiencing basic psychological need satisfaction in the prevocational care farm context.

First, contexts supporting satisfaction of basic psychological needs facilitate a more optimal internalisation process and more autonomous motivation (Deci et al., 1994; Ryan and Deci, 2000b; Deci and Vansteenkiste, 2004). In the prevocational training context, behavioural regulations, values and structures important for work participation are communicated to the clients. If the clients experience support for satisfaction of basic psychological needs in the care farm context, these regulations and values could become more optimally internalised, thereby making them more personally important for the clients (Ryan and Deci, 2000b; Gagné and Deci, 2005; Deci and Ryan, 2008a). Further, Deci and Ryan (2008a) found that feeling related to a family or group leads to internalisation of values and behaviours. The internalisation process therefore, seems to be based on the human desire to belong and feel connected to others (Ryan and Deci, 2000a; Deci and Vansteenkiste, 2004; Deci and Ryan, 2008a). This also underpins the importance of having close and supportive relationships in contexts that aim to convey new values and structures. This was also reflected by the current results showing the importance of the social community on the farm for basic psychological need satisfaction for the clients.

Further, satisfaction of basic psychological needs makes people engage in activities they find interesting or important. Even though engaging these activities does not necessarily have the purpose of satisfying basic psychological needs, they may be important for humans to develop and having positive experiences (Deci and Ryan, 2000). Basic psychological need satisfaction within the prevocational care farm context, could therefore create the foundation that makes clients engage freely in activities they find interesting and important (Deci and Ryan, 2000). Based on the results presented in this thesis, having contact and working with animals and experiencing nature may be examples of activities in the prevocational training context that themselves are not related to basic psychological need satisfaction, but nonetheless seem to be both popular and much appreciated by the clients. Basic psychological need satisfaction therefore, may be an important condition for clients to freely engage in activities and follow their interests, which also includes work and contact with animals and being in nature.

Last, extensive empirical findings from other studies within a variety of contexts using the SDT framework, suggest that basic psychological need satisfaction could lead to a range of positive outcomes. This can also apply for the clients in prevocational training on care farms. Enhanced mood, more positive thinking, and more positive affect are all outcomes which have been repeatedly associated with basic psychological need satisfaction and autonomy support (Ryan et al., 2010). Further, research has found basic psychological need satisfaction to be positively associated with engagement in self-motivated and autonomous behaviours (Ryan and Frederick, 1997; Nix et al., 1999), and mental

health-related quality of life (Farholm et al., 2016b). In addition, basic psychological need satisfaction makes people feel free to follow their interests (Deci and Ryan, 2008a), gives the experience of self-authorship when reaching for ones potential (La Guardia, 2009) and replenishes psychological energies and enable motivation (Sheldon et al., 1996). A recent study by Farholm et al. (2016a) found that providing satisfaction for the three basic psychological needs improved return to work for patients in vocational rehabilitation. This therefore, also shows the direct link of basic psychological need satisfaction in aiding the challenging return to work process for people outside the workforce.

The fifth main theme of the interview study also provided some insight into participants' experiences about personal function and thoughts about the future. By considering the SDT perspective, these experiences could be understood as possible outcomes of experiencing basic psychological need satisfaction. Descriptions by participants included experiences of more well-being, enhanced mood, more positive and fewer negative thoughts, and a feeling of being more able to face difficulties and finding solutions. Participants in the interview study also consistently expressed having found motivation towards moving on in life and towards resuming ordinary work. This motivation was related to discoveries of personal resources and a wish to follow personal interests, which was described as having originated subsequently to joining the prevocational training program. Other studies within the care farming literature have also found positive outcomes related to care farming, including increased self-esteem, self-confidence, self-acceptance, self-respect and motivation to work (Elings and Hassink, 2008; Hine et al., 2008; Kogstad et al., 2014), as well as better overall mood (Hine et al., 2008), well-being (Granerud and Eriksson, 2014; Leck et al., 2014), and more positive affect (Gonzalez et al., 2011).

Overall, from the SDT perspective, experiencing basic psychological need satisfaction therefore, may be valuable for clients in prevocational training on care farms because it could facilitate a more autonomous motivation towards resuming ordinary work and give the possibility for engagement in activities that are valuable and personally important for the clients. In addition, basic psychological need satisfaction may lead to a variety of positive outcomes for the clients including increased function and well-being. Strengthening elements in the prevocational training context on care farms positively associated with basic psychological need satisfaction may therefore, be health promoting for these clients, as the value of experiencing basic psychological need satisfaction may provide clients with the resources that enable them to increase control over their own health.

#### 4.4 Other possible research perspectives

The current thesis has attempted to provide a better understanding of clients in prevocational training on care farms and of the health promoting elements of the care farm context through the lens of SDT and basic psychological need satisfaction. However, the choice of using SDT means only one perspective is considered in the current research, excluding other perspectives that could have been relevant for the same research. Sempik et al. (2010) describe a range of concepts, theories and perspectives relevant for research within the Green care field in general. These include the biophilia hypothesis, attention restoration theory, nature and recovery from stress, salutogenetic theory, recovery model and self-efficacy amongst others. In addition, other possible perspectives could also include physical activity and social support. Some of these perspectives, including the biophilia hypothesis, self-efficacy, social support, and the importance of physical activity, will be considered briefly.

The Biophilia hypothesis was first described by Edward O. Wilson (1984), and postulates that humans have a natural tendency to focus on other living organisms and lifelike processes. It is believed that this tendency has provided distinct advantages in the course of human evolution (Kellert and Wilson, 1993), which indicates that there is a genetic basis for humans motivation for and possible healing benefits from interacting with plants and animals. Next, self-efficacy is the individual's belief that he or she can successfully achieve a desired outcome (Bandura, 1977). Perceived self-efficacy is considered a major determinant for feelings, thoughts, motivation and choice of activity. According to Bandura (1997), a person's belief in own efficiency comes from cognitive, motivational, affective and selection processes. Further, social support is described as the individual's belief that one is esteemed and valued, and that someone cares for and loves you (Cobb, 1976). Social support has been recognised as a moderator of stress either in a direct way or through a buffer effect (Cohen and Syme, 1985). Last, regular physical activity, including walking and cycling and being active in sports, has been recognized as having significant benefits for physical and mental health (WHO, 2017).

The SDT perspective utilized within the current thesis focuses on the psychological aspects of human functioning and motivation. This also means that the application of any of these other perspectives could have brought forward other aspects and mechanisms of prevocational training on care farms and of the clients participating in these programs.

## 4.5 Methodological issues

The work presented in this thesis is the culmination of several processes including recruiting participants, applying methods, choosing relevant constructs, and analysing and interpreting data. All of these processes present potential threats to the validity of the results (Shadish et al., 2002). The thesis is based on a mixed method design incorporating both a cross-sectional study and a qualitative interview study. The use of a mixed method design will be shortly discussed, before threats to validity encountered in the cross-sectional study will be addressed. This will be done by using Shadish et al. (2002) understanding of different validity concepts, including threats to statistical conclusion validity, internal validity, construct validity and external validity. Further, some challenges related to the quality of the interview study, including reflexivity, transferability, and interpretation and analysis, as outlined by Malterud (2001) will also be addressed.

The use of mixed methods has been thoroughly debated. One of the arguments against the use of mixed methods is due to the fact that quantitative and qualitative research is based on different paradigms (Sale et al., 2002). On one hand, the quantitative paradigm is based on positivism, where a phenomenon is reduced to indicators that represent the truth. This also indicates that there is one objective reality that exists independently of human perception (Sale et al., 2002). On the other hand, the qualitative paradigm is based on interpretivist and constructivism, which means there is no way of understanding the truth independent of our own minds (Sale et al., 2002). Sale et al. (2002) therefore argue that research based on such different paradigms, can never claim to study aspects of the same phenomenon, because the phenomenon itself will not be the same according to the different research paradigms. At worst, combining these paradigms can diminish the value of both methods (Sales et al. (2002). However, others have a more positive view of using mixed methods, and claim that important similarities across the research paradigms also exist (Johnson and Onwuegbuzie, 2004). These similarities are based on the recognition that both methods use empirical observations when answering a research question, attempt to safeguard the research against sources of invalidity, and strive towards providing valid information about people and the contexts they are a part of (Johnson and Onwuegbuzie, 2004). Johnson et al. (2007) therefore, state that the use of mixed methods can represent a powerful third paradigm that may provide the most informative, complete, balanced, and useful research results.

In the current thesis, the mixed method design was used for complementary purposes across studies. Methods were not combined within one paper, and the threats outlined by Sales (Sales 2002), that a

mixed method design could diminish the value of both methods, is therefore limited. At the same time, the use of the different studies to complement each other may provide an enhanced understanding of the phenomenon under study.

#### 4.5.1 Potential threats to validity (Paper I and II)

##### *Statistical conclusion validity*

Statistical conclusion validity is defined as “[t]he validity of inferences about the correlation (covariation) between treatment and outcome” (Shadish et al., 2002, p. 38). This type of validity therefore, concerns inferences about whether two variables covary, as well as inferences about the strength of these possible relationships.

When making inferences about whether two variables covary, one should consider the possibility of making a type I or a type II error. In the current study, the significance level was set to 0.05 before the data was analysed. This level of significance reflects that there is a 5% chance of making a type I error, detecting an effect that is not present. In the current research, this could mean that some of the relationships found between the variables in the SEMs were only caused by chance, and do not reflect real relationships between variables. One way of reducing the risk of making a type I error is to use a more conservative significance level (e.g. 0.01), thereby making it less likely that the relationship detected would be produced by chance alone. This may be particularly relevant when sample sizes are large, because a large sample increases the likelihood of detecting small differences. However, using a more conservative significance level also increases the risk for making a type II error, which is failing to detect an effect that is present. For the current study, a type II error could mean that true relationships between variables were not detected, and therefore excluded in the SEMs. However, it seems reasonable to believe that the current sample size of 201 and 194 participants was sufficiently large to detect significant relationships between variables. However, we did not conduct a sample size calculation because the aim was to understand underlying mechanisms more than comparing treatments.

The second concern about statistical conclusion validity is the over- or underestimation of the strengths of the relationships between variables. One way of minimizing the risk of statistical conclusion validity is to use sound statistical models, which safeguard the complexity of the phenomena we investigate. In the current project, SEM was used to investigate relationships between variables in Paper I and II. In

Paper I, two SEMs examined the mediator function of basic psychological need satisfaction in the relationship between SHC and satisfaction with life for men and women (figure 2 and 3). In Paper II, a SEM was created to examine the relationship between elements in the prevocational care farm context and basic psychological need satisfaction (figure 4). SEM is a general statistical modelling technique that combines factor analysis and regression analysis (Hox and Bechger, 1998), where a set of linear models can be fit simultaneously (Byrne, 2010). This statistical method takes a confirmatory approach to the data being analysed (Byrne, 2010), meaning that the construction of a model should be based on relevant theoretical and empirical information (Hox and Bechger, 1998). In the current thesis, models in both Paper I and II were based on the SDT.

The adequate sample size needed in order to apply a SEM analysis is somewhat debated, ranging from 10 to 20 participants per statistically estimated parameter in the model. However, Kline (2011) states that an overall sample size of around 200 is considered sufficiently large, and it has been found that SEM can perform well under the right conditions with samples of 50 to 100 (Iacobucci, 2010). For the models created in Paper I and II, the sample size was 201 and 194, respectively. The models constructed in these papers are not very complex in nature, and the sample size is therefore sufficiently large.

There are several advantages of using SEM. First, this graphic statistical model provides a convenient and transparent way of describing the underlying structure of the variables. In addition, the model can incorporate both unobserved and observed variables in the analysis, and include covariation between variables as well as providing good estimates of the error variance parameters (Byrne, 2010). This also made it possible to account for the high covariation between the variables musculoskeletal and psychological complaints in the model. SEM can also be useful for conducting mediator analysis, where an independent variable is thought to influence a dependent variable directly or indirectly through a mediator. By using SEM, the process of a mediator analysis makes it possible to, instead of fitting a series of regressions to estimate these relationships, fit these relationships simultaneously and more efficiently within a single model (Iacobucci, 2010). This type of mediation analysis was applied in Paper I to investigate the association between SHC and satisfaction with life, with basic psychological need satisfaction as a possible mediator in this relationship. Last, SEM can also be used to analyse group differences, by investigating whether the model fit is equal for different groups (Hox and Bechger, 1998), and a multigroup invariance test was also conducted for the models in Paper I and Paper II.



When conducting a SEM analysis, several statistical tests exist to evaluate the model fit. There are some controversy about fit indices, because cutoffs for a fit index can be misleading and subject to misuse. It is therefore, important to understand that all cutoff values are rules-of-thumb that should be used with caution (Hox and Bechger, 1998; Iacobucci, 2010). Iacobucci (2010) also argues that a sound comprehensive SEM comes from asking good theoretical questions. In the current research model chi-square, relative/normed chi-square, Tucker-Lewis index (TLI), comparative fit index (CFI) and root mean square error of approximation (RMSEA) was reported for the SEM's in Paper I and Paper II. There are two general classes of fit measures (Hooper et al., 2008; Iacobucci, 2010). The model chi-square, relative/normed chi-square and RMSEA are absolute fit indices, which determine how well the proposed model fits the sample data. The TLI and CFI represent incremental fit indices (Hooper et al., 2008), which compares a model's fit against an idealized model (Iacobucci, 2010).

The model chi-square ( $\chi^2$ ) is the traditional way of evaluating overall model fit and assesses the magnitude of discrepancy between the sample and the covariance matrix (Hooper et al., 2008). A good model would therefore provide an insignificant results at a .05 probability threshold (Hooper et al., 2008), which was also the case for the SEMs in Paper I and II. However, because this is a statistical significance test, it is sensitive to sample size, meaning that the chi-square often rejects models when the sample is large (Hooper et al., 2008; Iacobucci, 2010). On the other hand, when the sample size is small, the statistics lack power, meaning it cannot discriminate well between a good fitted model and a poor fitted model (Hooper et al., 2008). One statistical test that minimises the impact of sample size is the relative/normed chi-square ( $\chi^2/df$ ) (Hooper et al., 2008). In the current research, the  $\chi^2/df$  values ranged between 1.33 and 1.58. However, there is no threshold for the relative/normed chi-square test in relation to what is considered a good and a poor model. This value therefore, does not provide sufficient information about the fit of a model.

Because the chi-square test is sensitive to sample size, a variety of alternative fit indices have been proposed (Hox and Bechger, 1998). The TLI is a revised form of the normed fixed index (NFI), and was developed to combat the NFI's sensitivity to sample size (Hooper et al., 2008) and biasness. The value of TLI ranges from 0-1 and a value of .95 is regarded as a good model fit (Hox and Bechger, 1998; Hooper et al., 2008). All the SEMs included in the thesis had TLI values above .95. Further, the CFI is another fit index that is revised from the NFI (Hooper et al., 2008). CFI adjusts for parsimony and takes into account the sample size (Byrne 1998), meaning it can perform well even with small samples (Iacobucci, 2010). The CFI is therefore, popularly reported as it is one of the measures least effected by sample size

(Hooper et al., 2008). The CFI value ranges from 0-1 and it has been suggested that values of .95 or greater indicate a good fit. The SEMs included in the thesis had CFI values of .978, .991 and .996, indicating good fit.

Last, RMSEA is regarded as one of the most informative indices (Hooper et al., 2008). It is currently the most popular measure of model fit and it is reported in virtually all SEM articles. The RMSEA evaluates how well the given model approximates the true model (Hox and Bechger, 1998), favouring a more parsimonious model (Hooper et al., 2008). Values less than .05 indicate a good fit, and values as high as .08 represent a reasonable fit. Values from .08 to .10 indicate mediocre fit and values greater than .10 indicate a poor fit (Byrne, 2010). However, in simulated studies the RMSEA has been found to over-reject true models of 250 subjects or less (Hu and Bentler, 1998; Hu and Bentler, 1999; Fan and Sivo, 2005). Therefore, it has been suggested that values of .06 and .07 could be indicative of a good fit when samples are small (Hu and Bentler, 1999; Steiger, 2007). In Paper I, the SEM for men had a RMSEA value of .063 and the SEM for women had an RMSEA value of .071, which could be considered reasonable fit of the models to the data. The RMSEA value for the SEM in Paper II was .055, which is very close to a good fit. Summing up, the fit indices reported for the SEMs in the current thesis therefore, indicate an overall acceptable fit of all the models.

### *Internal validity*

Internal validity is defined as “[t]he validity of inference about whether observed covariation between A (the presumed treatment) and B (the presumed outcome) reflects a causal relationship” (Shadish et al., 2002, p. 38). Internal validity therefore, concerns whether observed changes result from the treatment given, or if there are other alternative explanations, or confounders, causing all or some of the outcome. The most effective way of controlling for such confounders is to use a randomised controlled trial including random allocation of participants into treatment and control groups (Shadish et al., 2002).

However, many studies are based on observational data, and some research questions pose limitations in relation to the methodological choices available. In the current research, investigating clients participating in prevocational training on care farms, a cross-sectional study design was employed. A longitudinal prospect design could have provided more certain information about the direction of the relationships between the variables in the models. However, a longitudinal study design is time consuming and requires a great deal of resources. In addition, it may also lead to a higher number of withdrawals. This was considered a real threat in the current research, based on information from

several care farmers whose participants were not willing to fill in the questionnaire more than once. A higher number of withdrawals would have led to a smaller and possibly more biased sample, which could have influenced the results of the survey. Therefore, in an attempt to maximise the response rate, it was decided that a cross-sectional design was the most appropriate.

In a cross-sectional design, data on each participant is gathered at one point in time (Sedgwick, 2014). The advantages of cross-sectional studies is that they are quick, easy to perform, inexpensive, and pose no risk for any loss to follow-up (Levin, 2006; Sedgwick, 2014). A cross-sectional design can be used for descriptive purposes by determining prevalence (Levin, 2006) and for measuring naturally occurring variations in relevant constructs, which can be quantified to give information about relationships between variables (Levin, 2006). However, there are some important issues to consider when using a cross-sectional design.

First, because all the data for each participant is collected at one point in time, a cross-sectional design cannot infer causal relationships (Flanders et al., 1992; Mann, 2003; Sedgwick, 2014). Nonetheless, structural equation modelling was used to gain a better understanding of the relationships between variables in the current study. The problem is that based on the cross-sectional design, the relationships found in the models could also potentially go in the opposite direction. Therefore, it is important that the SEM is constructed based on a theoretical framework that provides a sound argument for the proposed model and the direction of the causal paths. When constructing the SEMs for Paper I and Paper II, the SDT (Deci and Ryan, 2000) was used to deduce the directions of relationships proposed in the models.

Further, when using a cross-sectional design it is important to consider some of the possible confounding variables that could have influenced the results. First, prevocational training on care farms are non-standardised programs, conducted in a very heterogeneous context. The care farms differ greatly in the specific tasks and activities on the farm as well as the surroundings around the farm. This could lead to participants having very different experiences on these farms, which could mean that the effect of single farms may represent a factor influencing the results in the study. Further, clients included in the study, also had participated in the prevocational program for a varying amount of time. Therefore, participants that had been in the care farm service for a longer time could also have experienced a more positive development in life, which again could have influenced answers on questions concerning SHC, basic psychological need satisfaction and satisfaction with life. In addition,

other aspects of clients personal life could also have affected answers on these scales, including everything from family affairs, health related issues or economical concerns amongst others.

Further, the internal validity can be threatened by sampling bias. This occurs when the sample does not represent the target population. The bias that occurs when the sample is not representative of the population is called a selection bias. In the current study, there was no register over clients participating in prevocational training on care farms. Therefore, a random sampling strategy, preferred for ensuring a more representative sample, was not possible (Levin, 2006). Instead, an attempt was made to reach as many participants in prevocational training on care farms as possible (see section 2.2.1 for a description of the recruitment process).

However, there are three main sources of selection bias in the current study. First, there may be a selection bias at the farm level. When we started the recruitment process, there was no information available, such as a national register of care farms. This means that we cannot rule out that there are systematic differences between the care farms that agreed to participate and the farms that declined the invitation. The number of included farms is low at first sight. However, according to recent numbers from the national register of care farms, there were 370 certified care farms in Norway in January 2017 (Matmerk, 2016). It is likely that this number was lower in 2011, when the mapping of these care farms were carried out. In addition, not all of these farms were active, and the ones that were active provided services to a variety of different client groups not meeting our inclusion criteria (Prestvik et al., 2013). It is therefore, reasonable to assume that the careful mapping process, leading to the inclusion of 65 care farms from 16 of the 19 counties in Norway, sufficiently represents the active group of care farms offering prevocational training services or having services for adult clients with mental health and/or a history of addiction.

The next possible source for selection bias, is related to the use of the care farmer to distribute invitations to the clients to participate in the study and how the clients were included. In the current research, it could be that clients with a more positive attitude towards the care farm service was invited to take part more often than those with negative attitudes. If this was the case, it may have caused more positive answers to questions about being a useful colleague, experiencing support from the farmer, and group belonging with other clients, as well as fewer reported SHC and higher satisfaction with life scores. However, the results did not indicate this, as the level of SHC was very high and the reported level of satisfaction with life was generally low. In addition, information gained from conversations with

the farmers revealed that the functional level of some of the clients was considered so poor, that some farmers decided not to invite the clients. To avoid a selection bias at this stage in the recruitment process, the farmer was therefore given clear and concise inclusion criteria to use when recruiting the clients. These inclusion criteria stated that clients should be of working age (18-66 years), out of work, dependent on different social welfare benefits from NAV, and should have attended the prevocational service on the care farm for at least one month prior to answering the questionnaire. Further, to ensure that clients with the lowest level of functioning would have the opportunity to communicate their experiences of being on a care farm, it was decided that the interview study should focus on clients with mental health problems, and preferably someone who had not been able to answer the questionnaire. In hindsight, results from the cross-sectional study show that the average client in prevocational training on care farms struggled with a very high degree of psychological health complaints. This could indicate that the clients answering the questionnaire and the participants in the interview study had an equally low functional level, which also means that we cannot be sure that the clients with the lowest functional level were reached.

At the last stage of the recruitment process, once the questionnaires had been handed out by the farmer, selection bias could have come from the non-respond bias, meaning that the individuals that chose to take part in a study were somehow different to those that chose not to participate (Levin, 2006; Sedgwick, 2014). We attempted to minimize non-responders by reminding the farmers to hand out the questionnaire, and by asking the farmer to hand out letters that prompted the clients to reply. However, because there was no register over participants in prevocational training on care farms, there was no information available about non-responders, thereby making it difficult to know the possible extent of a non-respond bias in the current sample. In addition, the lack of a register also made it difficult to calculate a response rate. However, based on information obtained from conversations with the care farmers, a conservative calculation indicated that approximately 45% of clients receiving the questionnaire from the farmer responded to the survey. However, we cannot know if these responders were representative of the eligible population.

These possible sources of selection bias therefore, make it more difficult to know whether the results from our study are representative of the population. However, the careful mapping of the care farms and the decent number of care farms included across the country, could indicate that we managed to include a representative group of care farmers. This could also indicate that a large part of the eligible population was invited to participate. Based on this, results from the current study may be relevant for

clients in prevocational training on care farms in Norway. However, because we cannot ensure that the sample is representative, results related to prevalence, including descriptive findings about the clients, level of SHC and level of satisfaction with life may have a weaker transferability than the associations between variables found in the SEMs.

Last, in relation to internal validity, there are also some important considerations in relation to the measurement of psychological need satisfaction in the cross-section study. Basic psychological need satisfaction is a family of scales including a general form (Deci and Ryan, 2000; Gagné, 2003) as well as several domain specific forms including the work domain (Kasser et al., 1992; Ilardi et al., 1993; Deci et al., 2001), relationship domain (La Guardia et al., 2000) and exercise domain (Vlachopoulos and Michailidou, 2006). While the general scale measures the satisfaction of competence, relatedness and autonomy in general (Deci and Ryan, 2000; Gagné, 2003), the domain specific scales address basic psychological need satisfaction in relation to the work context (Kasser et al., 1992; Ilardi et al., 1993; Deci et al., 2001), in close relationships (La Guardia et al., 2000) and in the exercise context (Vlachopoulos and Michailidou, 2006).

In the current study, the basic psychological need satisfaction scale (Deci and Ryan, 2000; Gagné, 2003), which addresses need satisfaction in general, was used in the SEMs in both Paper I and II. For Paper I the general version of the basic psychological need satisfaction scale was the preferred measurement, as it was compatible with the other generic scales of SHC and satisfaction with life that was also included in the SEM. However, in Paper II investigating how specific elements in the prevocational care farm context influenced satisfaction of basic psychological needs for the clients, it might have been appropriate to include a domain specific basic psychological need satisfaction scale. However, none of the domain specific scales concerning work, close relationships or exercise fit the care farms context particularly well. Need satisfaction in close relationships was not relevant for the purpose of this study, and the focus of being at the care farm is not to be exercising or to be part of an ordinary work environment. Because there were no available domain specific scales measuring need satisfaction in the care farm context, the general measurement of basic psychological need satisfaction was used for both papers. However, this could mean that other factors in the participants' life may have influenced basic psychological need satisfaction and therefore also their answers on the scale. In addition, a domain specific scale may also have been somewhat more sensitive to basic need satisfaction in the care farm context.

### *Construct validity*

Construct validity is defined as “[t]he validity of inference about the higher order constructs that represent sampling particulars.” (Shadish et al., 2002, p. 38). Construct validity therefore concerns whether operationalisations used in a study reflect the constructs they intend to measure. In the current study, a self-reported questionnaire was used for measuring the constructs. This questionnaire included several standardised instruments as well as self-made questions. Generally, self-reported measurements can pose problems, as they rely on participants having a correct understanding of the questions posed, and on their ability to answer those questions (Boynton and Greenhalgh, 2004). The data collected in the current research may therefore have been subject to bias that could have influenced the construct validity. One important issue to consider is “willingness to please”. “Willingness to please” could have lead participants in the current study to answer the questions in a way that they thought the farmer wanted them to. This could therefore lead to an extreme response bias (Fitzpatrick, 2006; Ray et al., 2016), meaning that participants’ answers could be more positive regarding experiences of the famer and the care farm context, than they actually were. To counteract this bias in the current project, farmers were instructed to either let the participant answer the questionnaire in private at the care farm, or to let the participant bring the questionnaire home if preferred. In addition, participants received a pre-paid enveloped that they could seal before returning the questionnaire or handing it back to the farmer. Last, anonymity of the survey was also emphasised in the information letter to the participants.

Further, the data collected in the current research could also have been subject to a “demand characteristics bias”, where respondents fatigue and experience memory burden (Hippler and Schwarz, 1987; OECD, 2013). This suspicion was confirmed through conversations with several care farmers, indicating that some participants found the task of filling in the questionnaire very demanding. The farmers considered the low functional level and mental health problems of some of the participants to be the main reason for not completing the questionnaire. If participants fatigued by filling in the questionnaire, it could lead to more missing values, as items could be forgotten or skipped. In addition, experiencing memory burden could also give more inaccurate answers to questions, thereby threatening construct validity. In an attempt to avoid these problems, the response time was extended to give the participants time to answer the questionnaire over the course of several days when they felt ready for the task. Overall, there were few missing values in the returned questionnaires, indicating that the strategy of giving participants more time could have reduced some of the problem of the “demand

characteristics bias". Even though there may be certain problems related to the use of self-report questionnaires, they provide a relatively easy, quick and inexpensive way of collecting large amounts of data (LaFleur and Oderda, 2004; Gagné and Godin, 2005; Hawkshead and Krousel-Wood, 2007).

The questionnaire used in the current study included both standardised and self-made questions. Standardised validated scales were used to ensure construct validity when possible. These included measurements of SHC (Eriksen et al., 1999), social support (Gabriele et al., 2011), basic psychological needs (Gagné, 2003), satisfaction with life (Diener et al., 1985), and fascination and being away (Hartig et al., 1997). However, because there was no domain specific scale available, measuring basic psychological need satisfaction in the care farm context, the English version of the general need satisfaction scale (Gagné, 2003) was translated into Norwegian using back translation. This includes one translator translating the questionnaire into the target language, before an independent translator, blinded to the original questionnaire, translates this version back to the source language. The two source language versions are then compared (Sperber, 2004), to ensure the quality of the final version of the translated scale. Back translation is a preferred method that ensures construct validity (Sperber, 2004).

When standardised instruments were not available, self-made questions were used. The lack of validated standardised instruments to measure constructs poses a threat to construct validity. Therefore, several steps were taken to ensure high quality of the self-made questions. First, the researchers developed the questions in close cooperation with relevant stakeholders in the project group. Further, the relevance of the questions was ensured by using results from previous care farm literature, as well as by including questions from a large care farm survey developed in the Netherlands. Before finalising the questions, the complete questionnaire including both self-made and standardised instruments was tested in a pilot-study on a small group of clients, that provided feedback about the relevance of the questions and about the experience of answering them. These measures may therefore, have ensured a high quality and relevance of the self-made questions included in the questionnaire.

Further, internal consistency of standardised instruments and self-made batteries of questions included in the analyses, were investigated using Cronbach's alpha (Cronbach, 1951). Even though the subscales for competence and autonomy had a slightly lower Cronbach's alpha score than recommended ( $\alpha = .64$  for both subscales in Paper I and  $\alpha = 0.63$  and  $0.62$  for Paper II), overall acceptable or good Chronbach's



alpha values, suggested to range from .70 to .95, were found for all the other scales used in Paper I and Paper II ( $\alpha$  ranging from .77 to .94) (Tavakol and Dennick, 2011). The lower alpha value reported for the competence and autonomy subscales could indicate a poor interrelatedness between the items.

Alternatively it could reflect that competence and autonomy are heterogeneous constructs (Tavakol and Dennick, 2011). One solution to the low alpha score could be to delete items that cause the problems.

However, because these are standardised scales, and because the Cronbach's alpha values was just below .70, all the items were included in the analysis.

### *External validity*

External validity is defined as "[t]he validity of inferences about whether the cause-effect relationship holds over variation in persons, settings, treatment variables, and measurement variables" (Shadish et al., 2002, p. 38). External validity therefore concerns the relevance of findings from a specific study for other persons in other settings at different times. It would be natural to think that the results in the current research could be relevant for people out of work participating in other vocational rehabilitation programs in Norway. However, several issues make generalisability of the current results difficult.

In the current study both men and women were represented in the sample and the participants covered the age range set in the inclusion criteria. However, it is hard to know how similar or different the participants in our study are compared to people participating in other work rehabilitation programs in Norway. To investigate this, comparisons can be made to Øyeflaten et al. (2016), who included 1155 clients in eight different inpatients work rehabilitation programs in Norway. When examining the participants in this study, there seems to be some important differences. First, the mean age in Øyeflaten et al. (2016) study was 46 years of age, which means they were 10 years older on average than the participants in the current study. Further, participants in the current study reported a low level of education, with 40.3% of participants reported having up to 9 years of education and 45.8% reported having between 10 and 12 years of education. This therefore, seems lower than the average 13 years of education reported by the participants in Øyeflaten et al. (2016) study.

In addition, the participants in the current study had been out of work for a longer time compared to the participants in Øyeflaten et al. (2016) study. Øyeflaten et al. (2016) found that participants had received sickness benefits for an average of 10 months during the two years before they had started the work rehabilitation program. This is low in comparison to participants in the current study where 24.4% reported having been out of work for more than 5 years when they started the prevocational program

on the farm. Also, 16.4% reported that they had no previous work experience, and only 20% reported having been out of work for less than one year. Last, participants in both the current and Øyeflaten et al. (2016) study reported a high level of SHC. This may be a similarity between the samples, even though participants in Øyeflaten et al. (2016) study seemed to have a higher degree of musculoskeletal pains and the participants in the current study seemed to have a slightly higher degree of psychological complaints.

Another issue related to the generalisability of the results in the current study has to do with the care farm context. The care farm context consists of a conventional farm which is often surrounded by nature and rural landscapes. These surroundings may be substantially different from the surroundings of other vocational rehabilitation programs that can be situated in many different environments around Norway. The care farm context also accommodates a range of work tasks related to commercial farming activities that may not be included in other work rehabilitation programs. In addition, the participants in Øyefalten et al. (2016) study took part in the inpatient work rehabilitation program for 3 to 6 weeks. This way of organising the work rehabilitation program differs significantly from prevocational training on care farms. Here, participants usually attend the farm several days a week, and even though the majority of the participants had been on the farm for 1-6 months, almost half reported that they had attended the program on the farm for more than one year.

This shows that there may be many differences between participants in prevocational training on care farms and the participants from eight work rehabilitation programs in Norway that were included in Øyeflaten et al. (2016) study. Even though both groups of participants struggled with a high degree of musculoskeletal and psychological complaints, participants in the current study were younger, had a lower level of education and had been out of work for a longer period of time. In addition, the different contexts and differences in how the programs are organised, indicates that generalisability of the current results to people out of work participating in other rehabilitation programs in Norway may not hold.

Last, generalisability of the current findings to clients participating on care farms outside the Norwegian context may be more likely. The care farm context in Norway may be different to the care farm context in other European countries. One of the differences is that care farming in different countries seems to be based on different ideological and practical reasons in different countries. One example is that, while in Norway care farming developed primarily as a way of providing additional economic recourses to the

farmer (Ihlebaek et al., 2016), care farming in the Netherlands has to a larger extent been initiated by the health care sector (Hassink et al., 2014). However, a study on care farmers with adult clients in Norway, showed that 40% of the farmers reported having an education that was somehow related to the care farm service they provided (Ihlebaek et al., 2016). Further, it was also found that idealistic reasons were just as commonly reported as the main motivation for initiating the service on the farm as economy (Ihlebaek et al., 2016), showing that financial reasons alone do not reflect the main drive for the development of these services in Norway. This difference between care farms in Norway and Europe may therefore, be smaller than one would first expect. This is also collaborated by the many similarities between findings in the current study and the international literature concerning which elements of the care farm context that are considered important and valuable for the clients. Therefore, even if care farming has developed from different political and societal discourses in different countries, there also seems to be some similarities, indicating that the current results may have some relevance for clients participating in prevocational training on care farms outside of Norway.

#### 4.5.2 Major challenges in the interview study (Paper III)

Challenges related to reflexivity, transferability, and interpretation and analysis (Malterud, 2001) in the interview study will be addressed. These issues, closely associated with validity, are common challenges that can potentially threaten the quality of an interview study. In addition, some considerations in relation to the sample size is also included.

##### *Reflexivity*

Reflexivity (Malterud, 2001) is concerned with how the researcher's background and position influences the process of doing research, including decisions about which topic to investigate, the choices of methods, and the presentation of findings. One way to ensure reflexivity is to account for possible effects of the positioned researcher. In this way, even though bias is not eliminated, it is accounted for. The problem of subjectivity therefore, only arises if the effects of the researcher are ignored. Reflexivity begins with identifying preconceptions brought into the project by the researcher. These preconceptions include previous professional and personal experiences like qualifications, education and personal interests, as well as pre-study beliefs, and motivations.

Multiple researchers may also strengthen the study design and increase reflexivity, as the different views of the researchers can supplement and contest each other. In the current study, self-awareness of

preconceptions was strived for through keeping self-reflective journals (Morrow, 2005). Further, the interview guide used was developed on the basis of previous research identifying important elements of the care farm context (Hassink et al., 2010; Pedersen et al., 2012a). This may ensure that important aspects related to participants' experiences of the care farm service were not left out. However, in order to be open to other possible experiences of participating in the prevocational training on care farms, it was stressed that participants were welcome to talk about other aspects not covered by the interview guide. In addition, two researchers collaborated on conducting the interviews and on doing the text analyses, which may have reduced the possibility of biasing the results (Malterud, 2001). Overall, the researchers involved in the current interview study had backgrounds from health and social psychology, animal sciences, as well as research experience regarding mental health rehabilitation on care farms. This could have contributed to a higher degree of reflexivity as the researchers different backgrounds may have facilitated openness to different perspectives.

#### *Interpretation and analysis*

In relation to qualitative research, trustworthiness is dependent on using a well-documented analysis for the interpretation of the data (Malterud, 2001). In addition, identification and a complete description of this process should be included when results are communicated. In the current study, a modified version of systematic text condensation inspired by Giorgi's phenomenological approach (Giorgi, 1985) as described in Malterud (2003; 2012) was used. This four-step procedure of analysing the transcripts (see section 2.3.4 for more details) was also clearly described in the publication (Paper III). One advantage of using this systematic analysis, is that it ensures that the process of decontextualisation is balanced with recontextualisation, making it easier to maintain the connection between the field and the informants' accounts of reality, thereby preventing reductionism. In addition, this analysis procedure ensures a systematic and transparent process that limits the effects of the researcher's preconceptions on the interpretations (Malterud, 2001). Last, the theoretical framework of SDT was used to elaborate on the main themes identified in the analysis of the interview transcripts. The application of this theoretical framework reflects the hermeneutical approach in the research (Kvale and Brinkmann, 2009), offering a way of understanding phenomena, as well as providing a basis for organising new insight (Silverman, 2005).

### *Transferability*

Transferability (Malterud, 2001) is concerned with the nature and possible extent of the data, and reflects the broad aim of any research to produce information that is relevant beyond the study setting. Sampling strategies are commonly used to ensure transferability, but because the results from qualitative research are not supposed to be valid for large population groups, random sampling is usually not relevant to use. Instead, qualitative studies commonly use purposeful sampling. External validity or transferability therefore, is a result of evaluating whether or not the study results can be applied in other settings. However, in order to assess the applicability of results, the reader must be presented with contextual background material of the current study setting as well as demographic variables of the interviews. Results from qualitative studies therefore, should not be considered facts that are applicable to the population at large, but should be considered descriptions and notions that may be extended to specified settings. This is also the reason why a good qualitative research never exaggerates the extent of the material.

During the recruitment process of the cross-sectional study, several farmers had communicated that the lowest functioning clients did not want to, or were not able to, fill in the questionnaire. It was therefore, decided to focus on clients with mental health problems in the interview study, to ensure that the clients with the lowest functional level were reached. Therefore, a purposeful sampling was used to reach participants (Coyne, 1997) in Green work initiated by NAV, which is a prevocational training program primarily aimed at people struggling with mental health problems. The goal was to reach clients who could provide us with information about their lived subjective experience of participating in prevocational training on care farms (Green work). The recruitment of participants was done in collaboration with the farmer, who followed specific inclusion criteria set by the project group, limiting the recruitment to clients participated in prevocational training on care farms (Green work), who were outside the workforce, receiving some kind of welfare benefit arrangement through NAV and had been partaking in the care farm service for at least one month, but no longer than two years, prior to the interview. This resulted in a sample of 10 participants from four different care farms offering prevocational training on care farms in Southern Norway. In the published article (Paper III) the prevocational training program, as well as descriptive information about the interviewees was included to ensure the possibility for readers of making valid decisions about the transferability of results from the current study to other settings. The specific aims put forward in the research as well as the highly specific context that was being researched, means that descriptions and experiences emerging from the

current study also could be considered relevant for other clients in prevocational training programs on care farms. In addition, the striving for reflexivity, and the well-documented and systematic analysis, also makes it possible for others to make a more comprehensive decision about the transferability of the current results to other specific groups of individuals and settings.

Last, when considering the appropriateness of the size of the sample, Kvale (1996) has described it as being dependent on the purpose of the study. The purpose of the current study was to gain a deeper and broader understanding of the clients' lived subjective experience of participating in prevocational training on care farm. Based on the main themes in the interview guide, it was assessed that the themes reached an acceptable saturation during the 10 interviews, thereby following Kvale's recommendation to carry out interviews until a point of saturation, where new interviews yield little new information (Kvale, 1996). The current sample of 10 participants also fits within Kvale's (1996) description that in current interview studies the number of participants typically are around  $15 \pm 10$ . In a more recent publication by Malterud et al. (2015), the concept of information power is presented as a useful tool for making decisions about sample size. Information power indicates that the more information a sample holds, the lower number of participants is needed. Further, Malterud et al. (2015) suggest that information power should be considered in relation to the aim of the study, the sample specificity, the use of an established theory, the quality of the dialogue and the analysis strategies. A study with a narrow aim, including a combination of participants that is highly specific for the aim, supported by established theory, a strong interview dialog, using an in-depth analysis of narratives, will need the least number of participants (Malterud et al., 2015). Malterud et al. (2015) emphasise that considering the information power in a study would also be important for avoiding the use of samples that are too large, as this could result in a waste of time and lead to a lack of overview when conducting the analysis. In addition, Malterud et al. (2015) state that qualitative research does not intend to reach a complete description of all aspects of a phenomenon, but rather attempts to include a sample that has enough information power to contribute with new knowledge in accordance to the study aim. In the current study, the specific aim to investigate the lived experiences within the specific care farm context, the specific group of participants in prevocational training on care farms, together with a good interview dialogue and the use of an in-depth analysis of individual narratives, also supported the assessment that ten participants provided sufficient information power.

## 5. Conclusions and implications

### 5.1 Main findings and conclusion

Findings presented in this thesis showed that participants display a range of characteristics related to low functioning and unsuccessful return to work, including a high degree of subjective health complaints and a low level of satisfaction with life. This indicates that clients in prevocational training on care farms may have a challenging and long-lasting process of returning to work ahead of them. Further, psychological health complaints negatively influenced satisfaction with life, with basic psychological need satisfaction being one important psychological mechanism mediating this relationship. This indicates that clients in prevocational training on care farms have a high degree of psychological health complaints, which according to the self-determination theory (SDT) may create a life situation that could make it difficult to satisfy basic psychological needs for the clients. Further, the satisfaction of the basic psychological needs for autonomy, relatedness and competence, also seems to be important for clients to experience satisfaction with life. Experiencing basic psychological need satisfaction for clients in prevocational training on care farms therefore, may counteract some of the negative consequences associated with having a high degree of psychological health complaints, without treating the complaints directly.

Next, findings investigating the relationship between elements in the prevocational care farm context and basic psychological need satisfaction, showed that feeling like a useful colleague, including engaging in useful work tasks they could master within a structured care farm context, supported the basic psychological need for competence. Working with animals was the most common and appreciated work task for participants in prevocational training on care farms. Working and having contact with animals and being in nature was described as reducing stress and offering a sense of peace for the clients. Further, results showed that having a sense of belonging to a client group supported the needs for relatedness and autonomy. Receiving understanding and being acknowledged, as well as having the possibility of giving support to others, was described as important in the relationship with other clients. Experiencing support from the farmer led to satisfaction of the basic psychological needs for competence, relatedness and autonomy for the participants. Based on the SDT, this indicated that the farmer may represent an autonomy supportive relationship partner for the clients, holding a unique role in supporting basic psychological need satisfaction for the clients. This possible autonomy supportive

role of the farmer was also corroborated by descriptions of the farmer as a responsive and involved person, providing understanding, acknowledgement, guidance, and positive feedback to the clients.

In conclusion, clients in prevocational training on care farms appear to be a vulnerable group with a challenging return to work process ahead of them. Especially their high level of psychological health complaints seems to stand in the way of living a functional and satisfactory life. Experiencing basic psychological need satisfaction therefore, could counteract some of the negative consequences associated with having a high degree of psychological health complaints. Further, several elements were found to be positively related to basic psychological need satisfaction in the prevocational training care farm context. Results suggest, based on the SDT, that a close and supportive social environment may be important for basic psychological need satisfaction, and that the farmer seems to hold a unique role in supporting the satisfaction of basic psychological needs for the clients. From a theoretical standpoint, experiencing satisfaction of basic psychological needs has the potential to lead to a range of positive behavioural and psychological outcomes, including function and well-being for clients in prevocational training on care farms. Further, it can also be important for optimal internalisation of structures and values, which could lead to a more autonomous motivation towards return to work. Further, the SDT states that basic psychological need satisfaction could be important by creating an opportunity for clients to engage freely in activities enabling them to follow interest, grow and develop.

The possible value of experiencing basic psychological need satisfaction therefore reflect resources that may enable clients to have a higher degree of control over their own health, which is the main aim of health promotion. Therefore, strengthening elements in the prevocational training context that are positively associated with basic psychological need satisfaction, may be important to facilitate health promotion for the clients. This can also aid the potentially challenging return to work process for these individuals.

## 5.2 Implications for practice and policy

Our findings have some implications for practice. First, the new insights about the client group may provide farmers with a better understanding of the life situation and struggles that clients in prevocational training on care farms may have. The knowledge that clients have a high degree of subjective health complaints and the understanding that these complaints have a negative relationship with basic psychological need satisfaction, also means that the farmer, by focusing on creating a basic



psychological need supportive context on the farm, may counteract some of the negative consequences of having a high degree of such complaints by positively influencing satisfaction with life for the clients.

Further, the new insight about the possible health promoting elements in the prevocational care farm context, also gives the farmer a better understanding of his or her own unique role on the farm. This can be useful in relation to facilitating a basic psychological need supportive care farm context. Specifically, based on the results and the SDT perspective, the farmer can assume that by taking an autonomy supportive management style, including providing understanding and acknowledgement, guidance and positive feedback, and creating a flexible and diverse work environment, he or she may positively influence satisfaction of all the three basic psychological needs for the clients. In addition, the farmer should focus on ensuring a close and supportive social community amongst the clients, thereby providing clients with the opportunity of supporting and helping each other. Last, providing clients with useful and meaningful activities within a structure and well-organised environment may also be of value for basic psychological need satisfaction in the care farm context. In addition, the possibility to work and have contact with animals and to experience nature should also be available for the clients, as these activities seem to be highly valued by the majority of participants.

From the SDT perspective, farmers who focus on creating a basic psychological need supportive context on the care farm may facilitate motivation, function and well-being for their clients. Creating a basic psychological need supportive environment can therefore be important for health promotion for these clients, as it may strengthen individuals so that they can have an greater influence on their own health. Health promotion within the prevocational care farm context could therefore, eventually benefit the clients' challenging transition back to ordinary work.

Next, our findings also have some implications for policy. Considering the limitations for establishing cause and effect in the current study, implications for policy must be made with caution. However, the new insight about the client group and the possible health promoting elements in the prevocational training context could still have relevance for NAV and other initiators of these prevocational programs. First, the description of the clients suggests that prevocational training programs cater for a group of individuals with a high degree of health related problems and several difficulties in life, with an overall weak connection to the ordinary working life. Further, the findings that a close and supportive care farm environment was related positively to basic psychological need satisfaction for these clients could indicate to NAV that this service may be a suitable starting place for such a vulnerable group of

individuals, before they move on to other types of work rehabilitation, work training arrangements and eventually ordinary work. In addition, considering that the farmer seems to hold a unique role in relation to basic psychological need satisfaction in the care farm environment, NAV and other initiators of these programs could consider providing farmers with training, as research has previously shown that people can be trained to have a more autonomy-supportive interaction style (Reeve et al., 2004; Reeve and Jang, 2006; Hardre and Reeve, 2009).

### 5.3 Implications for further research

The weaknesses of the cross-sectional design suggest that further studies investigating health promoting elements in the prevocational training context for clients, should include a longitudinal study design, where the clients are followed over time, ideally from the start of the program. Such data could give more information about how relevant concepts, including basic psychological need satisfaction and subjective health complaints develop over time, and give a stronger indication concerning the direction of relationship between different variables. However, in order to investigate possible effects of participating in prevocational training on care farms, a randomised controlled trial could also be applied.

Future research could also consider using a domain specific scale measuring basic psychological need satisfaction in the care farm context, to create a better match between the elements in the prevocational care farm context and the experience of basic psychological need satisfaction in that specific farm context. In addition, a measurement on basic psychological need frustration could also be used in future research for addressing the possible darker sides of prevocational training on care farms, and in relation to understanding the relationship between SHC and satisfaction with life. It could also be interesting if a longitudinal study design would provide information about actual return to work for clients in prevocational training programs, representing a more objective measurement investigating the main aim of this prevocational care farm service. Last, future research could focus on other research perspectives for understanding the relationship between musculoskeletal complaints and satisfaction with life for the clients. Other perspectives could also be applied for investigating the meaning of working and having contact with animals and being in nature, which may provide a better account for the experiences described by clients who engage in these activities on the care farms.

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## Appendices



**UNIVERSITETET I OSLO**  
DET MEDISINSKE FAKULTET

<b>UMB IHA</b>	
10 DES 2010 12091/2010	
Saksnr.: 2010 1513	
Ark:	Beh:

Professor Camilla Ihlebæk  
Universitetet for Miljø- og Biovitenskap  
Forskergruppe for natur  
IHA  
1432 Ås

Regional komité for medisinsk og helsefaglig  
forskningsetikk sør-øst D (REK sør-øst D)  
Postboks 1130 Blindern  
NO-0318 Oslo

Telefon: 22 85 05 93

KOP

Dato: 15.10.10  
Deres ref.:  
Vår ref.: 2010/2042

E-post: [post@helseforskning.etikkom.no](mailto:post@helseforskning.etikkom.no)  
Nettadresse: <http://helseforskning.etikkom.no>

**2010/2042 Grønne tiltak for mennesker som er ute av arbeidslivet**

Vi viser til søknad av 29.07.10 for det ovenfor nevnte forskningsprosjekt. Søknaden ble behandlet i komiteens møte 26.08.10.

Prosjektleder er professor dr. philos. Camilla Ihlebæk.

Forskningsansvarlig er Universitetet for miljø- og biovitenskap ved øverste administrative ledelse.

**Prosjekttema:**

*I prosjektet skal man systematisk beskrive tilbudet som finnes under "Grønne tiltak" for mennesker som er ute av arbeidslivet, og dokumentere hvilke elementer som blir oppfattet som viktige og relevante av deltakerne. Videre skal man i prosjektet å undersøke effektene av ulike "Grønne tiltak" på forskjellige helseparametre og arbeidsdeltakelse. Studiepopulasjonen er voksne som er ute av arbeidslivet og mottar ulike trygdeordninger fra NAV og som er deltakere i pågående "Grønne tiltak". Data skal innhentes gjennom en spørreundersøkelse blant alle deltakere og tilbydere av "Grønne tiltak i Norge". Selvrappertert jobbstatus og registerdata fra NAV skal benyttes for å se om deltakere kommer tilbake til arbeidslivet.*

**Vedtak:**

Komiteen har vurdert søknaden og godkjenner prosjektet med hjemmel i helseforskningsloven § 10.

Tillatelsen er gitt under forutsetning av at prosjektet gjennomføres slik det er beskrevet i søknaden, protokollen og de bestemmelser som følger av helseforskningsloven med forskrifter.

Dersom det skal gjøres endringer i prosjektet i forhold til de opplysninger som er gitt i søknaden må prosjektleder sende endringsmelding til REK. Vi gjør oppmerksom på at hvis endringene er vesentlige må prosjektleder sende ny søknad, eller REK kan pålegge at dette gjøres.

Det gjøres også oppmerksom på at dersom det skal gjøres oppfølgingsstudier på materialet som samles inn i dette prosjektet skal det sendes endringsmelding om dette til REK. Hvis



endringene er vesentlige må også i disse tilfellene sende ny søknad, eller REK kan pålegge at dette gjøres.

Forskningsprosjektets data skal oppbevares forsvarlig, se personopplysningsforskriften kapittel 2, og Helsedirektoratets veileder for «Personvern og informasjonssikkerhet i forskningsprosjekter innenfor helse- og omsorgssektoren», <http://www.norsk-helsenett.no/informasjonsikkerhet/bransjenormen/Personvern%20og%20informasjonssikkerhet%20i%20forskningsprosjekter%20v1.pdf>

Tillatelsen gjelder til 31.12.2018. Av dokumentasjonshensyn skal opplysningene bevares til 31.12.2021. Opplysningene skal lagres avidentifisert i en nøkkel- og en opplysningsfil. De skal deretter anonymiseres eller slettes.

Prosjektet skal sende sluttmelding til REK Sør-Øst D, se helseforskningsloven § 12, senest 31.06.2019.

Med vennlig hilsen

Stein A. Evensen (sign.)  
professor dr.med.  
leder

  
Ingrid Middelthon  
seniorrådgiver

Kopi:  
Universitetet for Miljø - og Biovitenskap

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Region:	Saksbehandler:	Telefon:	Vår dato:	Vår referanse:
REK sør-øst	Emil Lahlum	22845523	05.03.2012	2012/58/REK sør-øst D
			Deres dato:	Deres referanse:
			17.01.2012	

Vår referanse må oppgis ved alle henvendelser

Att: Camilla Ihlebæk

### 2012/58 D Grønne tiltak for mennesker som er ute av arbeidslivet - kvalitativ undersøkelse

Vi viser til søknad om forhåndsgodkjenning av ovennevnte forskningsprosjekt. Søknaden ble behandlet av Regional komité for medisinsk og helsefaglig forskningsetikk i møtet 09.02.2012.

Prosjektleder: Camilla Ihlebæk  
Forskningsansvarlig: Universitetet for Miljø og Biovitenskap

#### Prosjektomtale

*Dette er en delstudie knyttet til hovedprosjektet "Grønne tiltak for mennesker som er ute av arbeidslivet og skal omfatte kvalitative intervju av et utvalg på 8 deltakere som deltar i Grønt arbeid. Dette for å få ytterligere informasjon om deltakernes opplevelse av ulike elementer i tiltaket (aktiviteter, arbeidsoppgaver, sosiale relasjoner).*

*Deltakerne rekrutteres fra gårder på Østlandet som har avtale med NAV om grønt arbeid. Denne delstudien vil bidra til en større faglig forståelse for hvilke elementer i Grønt arbeid respondentene ser som nyttige og verdifulle i forhold til å komme tilbake i arbeid (dyrene på gården, naturopplevelser, sosial omgang med andre etc).*

*Det skal gjøres lydopptak under intervjuene som så blir analysert ved fortolkende kvalitative analysemetoder. Dette er informasjon som ikke fanges opp gjennom spørreskjema som benyttes i hovedstudien.*

*Aktuelle gårdbrukere blir kontaktet og bedt om å distribuere informasjonsskriv og samtykke erklæring til potensielle deltakere. Respondentene blir så kontaktet, og det gjøres avtale om intervju.*

#### Vurdering

Komiteen vurderer prosjektet slik at dette dreier seg om å samle erfaringer om selve tiltaket beskrevet i søknaden. Formålet med prosjektet er ikke å skaffe til veie ny kunnskap om sykdom og helse, og faller derfor utenfor REKs mandat.

For å gjennomføre prosjekter av denne typen trenger det ingen særskilt godkjenning fra REK. Det er institusjonens ansvar å sørge for på vanlig måte at tiltaket følger gjeldende reguleringer for behandling av helseopplysninger.

Ettersom prosjektet forutsettes gjennomført i samsvar med gjeldende reguleringer vil det ikke være noe til hinder for at resultatene kan publiseres. Hvis det er behov for dokumentasjon fra REK vil dette brevet bekrefte at prosjektet ikke er fremleggelsespliktig.

**Vedtak**

Slik prosjektet er fremstilt i søknad, fremstår prosjektet som evaluering av et etablert tilbud. Det faller derfor utenfor komiteens mandat, jf. helseforskningsloven § 2. Prosjektet kan gjennomføres uten godkjenning av REK.

Komiteens vedtak kan påklages til Den nasjonale forskningsetiske komité for medisin og helsefag, jfr. helseforskningsloven § 10, 3 ledd og forvaltningsloven § 28. En eventuell klage sendes til REK Sørøst D. Klagefristen er tre uker fra mottak av dette brevet, jfr. forvaltningsloven § 29.

Med vennlig hilsen,

Stein A. Evensen (sign.)  
dr. med.  
leder

Emil Lahlum  
Førstekonsulent

**Kopi til:**

torstein.steine@umb.no



Harald Hårfagres gate 29  
N-5007 Bergen  
Norway  
Tel +47-55 58 21 17  
fax +47-55 58 96 50  
nsd@nsd.uib.no  
www.nsd.uib.no  
Org.nr 985 321 884

Bente Berget  
Institutt for husdyr- og akvakulturvitenskap  
Universitetet for miljø- og biovitenskap  
Postboks 5003  
1431 ÅS

Vår dato: 17.04.2012

Vår ref:30142 / 3 / HIT

Deres dato:

Deres ref:

## TILBAKEMELDING PÅ MELDING OM BEHANDLING AV PERSONOPPLYSNINGER

Vi viser til melding om behandling av personopplysninger, mottatt 08.03.2012. All nødvendig informasjon om prosjektet forelå i sin helhet 16.04.2012. Meldingen gjelder prosjektet:

30142	<i>Grønne tiltak for mennesker ute av arbeidslivet</i>
Behandlingsansvarlig	<i>Universitetet for miljø- og biovitenskap, ved institusjonens øverste leder</i>
Daglig ansvarlig	<i>Bente Berget</i>
Student	<i>Margrete Morken</i>

Personvernombudet har vurdert prosjektet, og finner at behandlingen av personopplysninger vil være regulert av § 7-27 i personopplysningsforskriften. Personvernombudet tilrår at prosjektet gjennomføres.


Personvernombudets tilråding forutsetter at prosjektet gjennomføres i tråd med opplysningene gitt i meldeskjemaet, korrespondanse med ombudet, eventuelle kommentarer samt personopplysningsloven og helseregisterloven med forskrifter. Behandlingen av personopplysninger kan settes i gang.

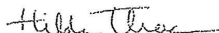
Det gjøres oppmerksom på at det skal gis ny melding dersom behandlingen endres i forhold til de opplysninger som ligger til grunn for personvernombudets vurdering. Endringsmeldinger gis via et eget skjema, [http://www.nsd.uib.no/personvern/forsk\\_stud/skjema.html](http://www.nsd.uib.no/personvern/forsk_stud/skjema.html). Det skal også gis melding etter tre år dersom prosjektet fortsatt pågår. Meldinger skal skje skriftlig til ombudet.

Personvernombudet har lagt ut opplysninger om prosjektet i en offentlig database, <http://www.nsd.uib.no/personvern/prosjektoversikt.jsp>.

Personvernombudet vil ved prosjektets avslutning, 31.12.2014, rette en henvendelse angående status for behandlingen av personopplysninger.

Vennlig hilsen

  
Bjørn Henriksen

  
Hildur Thorarensen

Kontaktperson: Hildur Thorarensen tlf: 55 58 26 54  
Vedlegg: Prosjektvurdering  
Kopi: Margrete Morken, CA.Torstensensvei 57, 0377 OSLO



Det fremgår av brev fra REK sør-øst datert 05.03.2012 at komiteen ikke regner prosjektet som medisinsk og helsefaglig forskning.

Prosjektets formål er å innhente erfaringer fra brukere av Grønne tiltak for mennesker som er ute av arbeidslivet, og på den måten kunne si noe om hva brukerne mener er viktige elementer i dette tilbudet.

Utvalget består av ca. 8 personer som deltar på 2-3 eksisterende tiltak på Østlandet. Personene er deltagere på Grønne tiltak som en del av arbeidsmarkedstiltak fra NAV (Grønt arbeid), og at det er personer som står utenfor arbeidslivet på grunn av psykiske problemer eller lidelser. Personer med omfattende psykiske problem/symptom blir ekskludert fra studien. Rekruttering skjer via arbeidsleder på gården som formidler forespørsel til aktuelle deltakere, som deretter selv tar kontakt om de ønsker å delta.

Det innhentes skriftlig samtykke basert på skriftlig informasjon. Personvernombudet finner informasjonsskrivet tilfredsstillende, såfremt følgende endringer utføres:

- setning seks og syv, andre avsnitt i vedlegg 2, samt første og andre setning, tredje avsnitt i vedlegg 3 endres til for eksempel følgende: "All informasjon fra intervjuet vil bli behandlet konfidensielt. Det vil si at all informasjon om deg ikke skal gjengis med navn, men datamaterialet vil i noen tilfeller kunne knyttes til indirekte personopplysninger. Opplysningene vil bli behandlet konfidensielt, og ingen enkeltpersoner vil kunne gjenkjennes i den ferdige oppgaven. Opplysningene anonymiseres og opptakene slettes når oppgaven er ferdig, innen utgangen av 2014".

- setningen "Studien er godkjent av Regional etisk komite for forskningsetikk (REK)" slettes, da REK kun har vurdert om prosjektet er helseforskning. For øvrig minner vi om at REK står for "Regionale komiteer for medisinsk og helsefaglig forskningsetikk". Det kan heller tilføyes en setning som «Prosjektet er meldt til Personvernombudet for forskning, Norsk samfunnsvitenskapelig datatjeneste (NSD)» (tredje avsnitt, vedlegg 2, og første avsnitt, vedlegg 3).

Vi ber om å få tilsendt reviderte skriv før de distribueres utvalget.

Data innhentes ved personlig intervju. Det vil bli benyttet lydopptak som behandles elektronisk. Det tas høyde for at datamaterialet vil kunne være knyttet til direkte personidentifiserende opplysninger.

Personvernombudet tar høyde for at det kan bli registrert sensitive personopplysninger om helseforhold, jf. personopplysningsloven § 2 nr. 8 c). Personvernombudet finner at denne behandlingen kan finne sted med hjemmel i personopplysningsloven § 8 første ledd og § 9 a) (samtykke).

Materialet registreres og oppbevares på pc i nettverkssystem tilknyttet virksomheten. Det oppgis at datamaskiner beskyttes av brukernavn og passord.

Datamaterialet anonymiseres når prosjektet er avsluttet, senest innen 31.12.2014. For at datamaterialet skal være anonymt må navn (på samtykkeerklæringer) slettes. I tillegg må indirekte

personidentifiserende opplysninger slettes eller grovkategoriseres/omskrives, slik at ingen enkeltpersoner kan gjenkjennes. Lydopptak slettes.

**DEN NASJONALE  
SPØRREUNDERSØKELSEN OM**



**DELTAKERES ERFARINGER MED INN PÅ TUNET-  
ELLER ANDRE GRØNN OMSORG-TILBUD**



Hensikten med dette forskningsprosjektet er å kartlegge dine erfaringer med det Inn på tunet (IPT)- eller grønn omsorg-tilbudet du deltar i. Vi er interessert i din opplevelse rundt å delta i et slikt tilbud og hvordan det har påvirket din fysiske og psykiske helse, livssituasjon og dagligliv.

Prosjektet er et samarbeid mellom Universitetet for miljø- og biovitenskap (UMB), Universitetet i Oslo (UiO), NAV og bondeorganisasjonene (Norges Bondelag og Norges bonde- og småbrukarlag). Ansvarlig for prosjektet er professor Camilla Ihlebæk ved UMB.

Det er mange spørsmål i skjemaet. Det er ingen riktige eller gale svar. Les spørsmålene nøye og forsøk å beskrive det som passer best for deg. Det utfylte skjemaet er konfidensielt og anonymt. Resultatene vil ikke bli presentert på en måte som gjør det mulig å identifisere den enkelte svargiver og alle som jobber med prosjektet er bundet av taushetsplikt. Undersøkelsen er godkjent av Personvernombudet, Norsk samfunnsvitenskaplig datatjeneste (NSD) og Regionale komiteer for medisinsk og helsefaglig forskningsetikk (REK).

Spørreundersøkelsen vil bli sendt ut fire ganger (vår og høst 2011 og 2012). Det er derfor en sjanse for at du vil bli bedt om å fylle ut spørreundersøkelsen flere ganger i løpet av denne perioden.

Det er helt frivillig å svare på undersøkelsen og du kan når som helst trekke deg. Prosjektet vil bidra til informasjon og kunnskap som kan være med å utvikle og gjøre slike grønne tilbud bedre. Fordi dine erfaringer er viktige håper vi du vil ta deg tid til å besvare.

Dersom du har spørsmål om prosjektet må du gjerne ta kontakt med oss.

#### **Prosjektleder**

Camilla Ihlebæk  
Professor  
Universitetet for miljø- og biovitenskap  
Institutt for husdyr- og akvakulturvitenskap (IHA)  
Boks 5003  
1430 Ås  
Tlf. 64 96 51 08  
e-post [camilla.ihlebak@umb.no](mailto:camilla.ihlebak@umb.no)

#### **Prosjektmedarbeidere**

Bente Berget  
Forsker PhD  
Tlf. 64 96 52 26  
e-post [bente.berget@umb.no](mailto:bente.berget@umb.no)

Lina Harvold Dalskau  
PhD student  
Tlf. 64 96 51 61  
e-post [lina.dalskau@umb.no](mailto:lina.dalskau@umb.no)



NORGES BONDELAG





Fyll inn ditt personnummer (11 siffer):

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### Del 1

Del 1 av spørreskjemaet skal kun fylles ut første gang du besvarer undersøkelsen.  
Har du fylt ut spørreskjemaet tidligere, skal du hoppe direkte til Del 2, spørsmål 15.

#### 1. I hvilket fylke ligger gården du er på? (Sett ett kryss)

- |   |   |
|---|---|
| <input type="checkbox"/> Oslo og Akershus | <input type="checkbox"/> Sogn og Fjordane |
| <input type="checkbox"/> Østfold          | <input type="checkbox"/> Møre og Romsdal  |
| <input type="checkbox"/> Vestfold         | <input type="checkbox"/> Sør-Trøndelag    |
| <input type="checkbox"/> Telemark         | <input type="checkbox"/> Nord-Trøndelag   |
| <input type="checkbox"/> Aust- Agder      | <input type="checkbox"/> Hedmark          |
| <input type="checkbox"/> Vest-Agder       | <input type="checkbox"/> Buskerud         |
| <input type="checkbox"/> Rogaland         | <input type="checkbox"/> Nordland         |
| <input type="checkbox"/> Hordaland        | <input type="checkbox"/> Troms            |
| <input type="checkbox"/> Oppland          | <input type="checkbox"/> Finnmark         |

#### 2. Er det dyr på gården? (flere svar mulig)

- |   |   |
|---|---|
| <input type="checkbox"/> Nei, det er ingen dyr på gården      | <input type="checkbox"/> Storfe (melkeproduksjon)                   |
| <input type="checkbox"/> Geit                                 | <input type="checkbox"/> Storfe (kjøttproduksjon)                   |
| <input type="checkbox"/> Hest                                 | <input type="checkbox"/> Fjørfe (høner, kyllinger og slaktekylling) |
| <input type="checkbox"/> Gris (purker, smågris og slaktegris) | <input type="checkbox"/> Hund                                       |
| <input type="checkbox"/> Kaniner                              | <input type="checkbox"/> Katt                                       |
| <input type="checkbox"/> Sau                                  | <input type="checkbox"/> Andre (hvilke?) _____                      |

#### 3. Hvordan opplever du gårdsomgivelsene? (flere svar mulig)

- |                                   |   |
|-----------------------------------|---|
| <input type="checkbox"/> Ryddig   | <input type="checkbox"/> Koselig            |
| <input type="checkbox"/> Rotete   | <input type="checkbox"/> Kaotisk            |
| <input type="checkbox"/> Skittent | <input type="checkbox"/> Vakkert            |
| <input type="checkbox"/> Rolig    | <input type="checkbox"/> Annet (hva?) _____ |

4. Hvem presenterte deg for tilbudet du nå deltar i? (Flere svar mulig)

- |  |   |
|--|---|
| <input type="checkbox"/> Fastlege eller annen allmennlege  | <input type="checkbox"/> Attføringsbedrift    |
| <input type="checkbox"/> Psykiater   | <input type="checkbox"/> Kommunehelsetjeneste |
| <input type="checkbox"/> NAV   | <input type="checkbox"/> Gårdbruker           |
| <input type="checkbox"/> Bedriftshelsetjeneste   | <input type="checkbox"/> Eget initiativ       |
| <input type="checkbox"/> Annen terapeut (f. eks; psykolog, psykiatrisk sykepleier, klinisk sosionom) | <input type="checkbox"/> Andre (hvem?) _____  |

5. Hvor lenge hadde du vært delvis eller helt ute av arbeid da du startet i dette tilbudet? (Sett ett kryss)

- |                                    |  |
|------------------------------------|--|
| <input type="checkbox"/> 0-3 mnd   | <input type="checkbox"/> 1-1 ½ år  |
| <input type="checkbox"/> 3-6 mnd   | <input type="checkbox"/> 1 ½ -2 år   |
| <input type="checkbox"/> 6-9 mnd   | <input type="checkbox"/> 2-5 år  |
| <input type="checkbox"/> 9 mnd-1år | <input type="checkbox"/> Mer enn 5 år  |
|                                    | <input type="checkbox"/> Har aldri vært i lønnet arbeid (hopp til spørsmål 11) |

6. Omtrent hvor mange år har du vært i yrkeslivet totalt? \_\_\_\_\_ år

7. I hvilken yrkeskategori arbeidet du da du sist ble sykemeldt? (Sett ett kryss)

- |  |  |
|--|--|
| <input type="checkbox"/> Administrative ledere og politikere                               | <input type="checkbox"/> Yrker innen jordbruk, skogbruk og fiske           |
| <input type="checkbox"/> Akademiske yrker  | <input type="checkbox"/> Kontor- og kundeservice                           |
| <input type="checkbox"/> Salgs-, service-, og omsorgsykker                                 | <input type="checkbox"/> Yrker uten krav til utdanning                     |
| <input type="checkbox"/> Håndverkere og lignende   | <input type="checkbox"/> Militære yrker og uoppgitt                        |
| <input type="checkbox"/> Yrker med kortere høyskole- og universitetsutdanning og teknikere | <input type="checkbox"/> Prosess- og maskinoperatør, transportarbeider mv. |

(Sett ett kryss for hver linje)

- |   | I svært liten grad       | I liten grad             | I noen grad              | I stor grad              | I svært stor grad        |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| 8. Opplevde du jobben du sist ble sykemeldt fra som <b>fysisk</b> belastende?.....  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Opplevde du jobben du sist ble sykemeldt fra som <b>psykisk</b> belastende?..... | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

10. Hvor fornøyd eller misfornøyd er du med jobben du sist ble sykemeldt fra? (Sett ett kryss)

Svært  
misfornøyd

Misfornøyd

Verken fornøyd  
eller misfornøyd

Fornøyd

Svært  
fornøyd

11. Hva var dine største helseproblemer/plager/symptomer da du startet i dette tilbudet?

(Oppgi maks to) \_\_\_\_\_

\_\_\_\_\_

12. Har du fått en diagnose av legen?

Nei

Ja

Hvis ja: Hva var din diagnose? \_\_\_\_\_

13. Hva er din sivilstand? (Sett ett kryss)

Ugift

Gift/partnerskap

Samboer

Enke-/enkemann

Skilt

Separert

14. Hva er din høyeste avsluttede allmennutdannelse? (Sett ett kryss)

Grunnskolenivå (Barne- og ungdomsskole)

Videregående skole

Universitet/høyskole

Annet (hva?) \_\_\_\_\_

Fyll inn ditt personnummer (11 siffer):

--	--	--	--	--	--	--	--	--	--	--

### Del 2

Del 2 av spørreskjemaet skal fylles ut av alle også, om du har besvart undersøkelsen tidligere.

15. Dato for utfylling av spørreskjema (dd mm åååå)

--	--	--	--	--	--	--	--	--	--

16. Er du:

Kvinne

Mann

17. Når er du født? (Fyll inn fødselsår)

1	9		
---	---	--	--

18. Hva heter gården du er på? \_\_\_\_\_

19. Hvor lenge har du deltatt i dette tilbudet? (Sett ett kryss)

1-3 mnd

1-1 ½ år

4-6 mnd

1 ½-2 år

7-9 mnd

mer enn 2 år

10-12 mnd

20. Hvor ofte er du på gården? (Sett ett kryss)

Hver 14. dag eller mindre

3 ganger i uken

1 gang i uken

4 ganger i uken

2 ganger i uken

5 ganger i uken eller mer

21. Holder du på med en utdanning eller har du for tiden et arbeidsforhold?

(er du ansatt et sted) (flere svar mulig)

Nei

Ja, i et arbeidsforhold \_\_\_\_\_%

Ja, tar en utdanning \_\_\_\_\_%

22. Hva er din stønadssituasjon? (Sett ett kryss)

Sykepenger \_\_\_\_\_%

Kvalifiseringsstønad

Arbeidsavklaringspenger

Varig uførepensjon \_\_\_\_\_%

Dagpenger (arbeidsledighetstrygd)

Annet (hva?) \_\_\_\_\_

**23. Angi hvor mange måneder du samlet har vært ute av arbeid**

på grunn av skade/sykdom det siste året: \_\_\_\_\_ mnd. (sett 0 hvis dette ikke gjelder deg)

**24. Mottar du annen form for behandling nå?**

Nei  Ja

**Hvis ja: Hvilke behandlingstilbud mottar du? (flere svar mulig)**

- Behandling hos psykolog / psykiater (individuell eller gruppeterapi)
- Fysioterapi, manuell terapi og/eller kiropraktikk
- Medikamentell behandling
- Alternativ behandling (akupunktur, homeopat, osteopat, naprapat)
- Arbeidsrettet rehabilitering
- Annet (hva?) \_\_\_\_\_

**25. Dersom du forventer å komme helt eller delvis tilbake i arbeid,**

**hvor lang tid tror du det tar? (Sett ett kryss)**

- Umiddelbart (i løpet av 2 uker)
- Innen 1 måned
- Innen 2 måneder
- Innen 3 måneder
- Innen 6 måneder
- Innen 1 år
- Mer enn 1 år
- Har ikke som mål å komme tilbake til arbeid  
(hopp til spørsmål 27)

**26. Nedenfor følger en rekke påstander knyttet til dine følelser omkring det å bli klar til å komme tilbake i arbeid. Angi hvor enig eller uenig du er i påstandene?**

(Sett ett kryss for hver linje)	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
a. Jeg gjør alt jeg kan for å fortsette å arbeide.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Jeg er ikke klar til å begynne å arbeide igjen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Jeg gjør noe aktivt for å kunne begynne å arbeide igjen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Jeg tror ikke at jeg noensinne vil kunne begynne å arbeide igjen.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## HELSE OG MESTRING

**27. Nedenfor er det fem utsagn om tilfredshet med livet som helhet. Angi hvor godt eller dårlig de fem påstandene stemmer for deg og ditt liv ved å sette en ring rundt det tallet du synes stemmer best**

(Sett ring rundt ett tall for hver linje)

	Stemmer dårlig					Stemmer perfekt	
a. På de fleste måter er livet mitt nær idealet mitt.....	1	2	3	4	5	6	7
b. Mine livsforhold er utmerkede.....	1	2	3	4	5	6	7
c. Jeg er tilfreds med livet mitt.....	1	2	3	4	5	6	7
d. Så langt har jeg fått de viktigste tingene jeg ønsker i livet.....	1	2	3	4	5	6	7
e. Hvis jeg kunne leve livet på nytt, ville jeg nesten ikke forandret på noe.....	1	2	3	4	5	6	7

Diener, Emmons, Larsen, & Griffin (1985).

**28. Påstandene under beskriver hvordan du reagerer når du blir konfrontert med eller står overfor problemer eller ubehagelige hendelser. Angi hvor riktig eller gal hver påstand er for deg ved å sette ring rundt det tallet som passer best.**

(Sett ring rundt ett tall for hver linje)

	Helt galt	Nokså galt	Nokså riktig	Helt riktig
1 Jeg klarer alltid å løse vanskelige problemer hvis jeg prøver hardt nok.	1	2	3	4
2 Hvis noen motarbeider meg, så kan jeg finne måter og veier for å få det som jeg vil.	1	2	3	4
3 Det er lett for meg å holde fast på planene mine og nå målene mine.	1	2	3	4
4 Jeg føler meg trygg på at jeg ville kunne takle uventede hendelser på en effektiv måte.	1	2	3	4
5 Takket være ressursene mine så vet jeg hvordan jeg skal takle uventede situasjoner.	1	2	3	4
6 Jeg kan løse de fleste problemer hvis jeg går tilstrekkelig inn for det.	1	2	3	4
7 Jeg beholder roen når jeg møter vanskeligheter fordi jeg stoler på mestringsevnen min.	1	2	3	4
8 Når jeg møter et problem, så finner jeg vanligvis flere løsninger på det.	1	2	3	4
9 Hvis jeg er i knipe, så finner jeg vanligvis en vei ut.	1	2	3	4
10 Samme hva som hender så er jeg vanligvis i stand til å takle det.	1	2	3	4

Røysamb E, Schwarzer R & Jerusalem M (1998)

**29. Les påstandene nedenfor nøye og marker hvor godt dette passer for deg og ditt liv.**

(Sett ring rundt ett tall for hver linje)

	Slett ikke sant			Litt sant		Helt sant	
<b>a.</b> Jeg føler jeg står fritt til selv å bestemme hvordan jeg skal leve livet mitt	1	2	3	4	5	6	7
<b>b.</b> Jeg liker menneskene jeg omgås veldig godt	1	2	3	4	5	6	7
<b>c.</b> Jeg føler meg sjelden veldig kompetent	1	2	3	4	5	6	7
<b>d.</b> Jeg føler meg presset i livet mitt	1	2	3	4	5	6	7
<b>e.</b> Mennesker jeg kjenner forteller meg at jeg er flink i det jeg gjør	1	2	3	4	5	6	7
<b>f.</b> Jeg går overens med folk jeg kommer i kontakt med	1	2	3	4	5	6	7
<b>g.</b> Jeg holder meg stort sett for meg selv og har ikke så mange sosiale kontakter	1	2	3	4	5	6	7
<b>h.</b> Stort sett føler jeg at jeg står fritt til å uttrykke mine ideer og meninger	1	2	3	4	5	6	7
<b>i.</b> Jeg anser de menneskene jeg omgås regelmessig som mine venner	1	2	3	4	5	6	7
<b>j.</b> Jeg har nylig hatt muligheten til å lære nye interessante ferdigheter	1	2	3	4	5	6	7
<b>k.</b> I mitt daglige liv må jeg ofte gjøre det jeg blir fortalt	1	2	3	4	5	6	7
<b>l.</b> Menneskene i livet mitt bryr seg om meg	1	2	3	4	5	6	7
<b>m.</b> Vanligvis får jeg en følelse av å ha prestert noe gjennom det jeg driver med	1	2	3	4	5	6	7
<b>n.</b> Mennesker jeg omgås daglig pleier å ta hensyn til mine følelser	1	2	3	4	5	6	7
<b>o.</b> I livet mitt får jeg ikke ofte muligheten til å vise hvor dyktig jeg er	1	2	3	4	5	6	7
<b>p.</b> Det er ikke mange mennesker som står meg nær	1	2	3	4	5	6	7
<b>q.</b> Til daglig føler jeg stort sett at jeg kan være meg selv	1	2	3	4	5	6	7
<b>r.</b> Menneskene jeg omgås regelmessig ser ikke ut til å like meg noe særlig	1	2	3	4	5	6	7
<b>s.</b> Jeg føler ofte at jeg ikke strekker til	1	2	3	4	5	6	7
<b>t.</b> Jeg har liten mulighet til selv å bestemme hvordan jeg gjør ting i mitt daglige liv	1	2	3	4	5	6	7
<b>u.</b> Mennesker er vanligvis ganske vennlige mot meg	1	2	3	4	5	6	7

**30. Nedenfor er en liste som beskriver en rekke helseproblemer. Angi hvor plaget du har vært av disse helseproblemene de siste 30 døgn ved å sette ring rundt det tallet som passer best for deg.**

(Sett ring rundt ett tall for hver linje)		Ikke plaget	Litt plaget	Endel plaget	Alvorlig plaget
1.	Forkjølelse, influensa.....	0	1	2	3
2.	Hoste, bronkitt.....	0	1	2	3
3.	Astma .....	0	1	2	3
4.	Hodepine .....	0	1	2	3
5.	Nakkesmerter .....	0	1	2	3
6.	Smerter øverst i ryggen .....	0	1	2	3
7.	Smerter i korsrygg .....	0	1	2	3
8.	Smerter i armer.....	0	1	2	3
9.	Smerter i skuldre .....	0	1	2	3
10.	Migrene.....	0	1	2	3
11.	Hjertebank, ekstraslag.....	0	1	2	3
12.	Brystsmerter .....	0	1	2	3
13.	Pustevansker .....	0	1	2	3
14.	Smerter i føttene ved anstrengelser.....	0	1	2	3
15.	Sure oppstøt, "halsbrann" .....	0	1	2	3
16.	Sug eller svie i magen .....	0	1	2	3
17.	Magekatarr, magesår .....	0	1	2	3
18.	Mageknip .....	0	1	2	3
19.	"Luftplager" .....	0	1	2	3
20.	Løs avføring, diaré .....	0	1	2	3
21.	Forstoppelse .....	0	1	2	3
22.	Eksem .....	0	1	2	3
23.	Allergi .....	0	1	2	3
24.	Hetetokter .....	0	1	2	3
25.	Søvnproblemer .....	0	1	2	3
26.	Tretthet.....	0	1	2	3
27.	Svimmelhet .....	0	1	2	3
28.	Angst .....	0	1	2	3
29.	Nedtrykthet, depresjon.....	0	1	2	3



## AKTIVITET OG ARBEIDSOPPGAVER PÅ GÅRDEN

Nedenfor vil du finne spørsmål om din deltakelse i aktiviteter og arbeidsoppgaver i det tilbudet du er med i.

### 31. Hvilke typer arbeidsoppgaver og aktiviteter og har du deltatt i på gården?

(sett ett kryss for hver linje)	Aldri	Sjeldent	Av og til	Ofte	Svært ofte
a. Dyrestell.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Plante og/eller hagestell.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Vedproduksjon.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Skogskjøtsel (ungskogpleie, rydding, hogst).....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Skjøtsel av utmark (gjerding, rydding og slått av beiter)..	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Vedlikehold av bygninger.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Vedlikehold av maskiner.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Fiske.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Husflid.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Matlaging.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Salg av produkter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Andre (hvilke?) _____	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### 32. Ranger fra 1-3 hvilke tre aktiviteter som betyr mest for deg

(1 = den aktiviteten som betyr mest, 2 = den som betyr nest mest osv.)

- |   |  |
|---|--|
| <input type="checkbox"/> Dyrestell                | <input type="checkbox"/> Vedlikehold av maskiner |
| <input type="checkbox"/> Plante-/hagestell        | <input type="checkbox"/> Fiske                   |
| <input type="checkbox"/> Vedproduksjon            | <input type="checkbox"/> Husflid                 |
| <input type="checkbox"/> Skogskjøtsel             | <input type="checkbox"/> Matlaging               |
| <input type="checkbox"/> Skjøtsel av utmark       | <input type="checkbox"/> Salg av produkter       |
| <input type="checkbox"/> Vedlikehold av bygninger | <input type="checkbox"/> Annet (hva?) _____      |

**33. Nedenfor følger en rekke påstander om hvordan du opplever aktivitetene og arbeidsoppgavene på gården. Angi hvor enig eller uenig du er i påstandene.**

(Sett ett kryss for hver linje)	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
a. Det er alltid noe meningsfylt å gjøre for meg her.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Aktivitetene her er alltid godt organisert.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Hvis det er noe jeg ikke får til, får jeg hjelp.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Innimellom arbeidsoppgaven er det nok tid til avslapning.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Jeg kan selv velge hvilke aktiviteter jeg vil gjøre her.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Jeg er fornøyd med at aktivitetene er varierte.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Jeg synes at aktivitetene noen ganger er for fysisk krevende.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Jeg synes at aktiviteten noen ganger er for mentalt krevende.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Aktivitetene har vært i samsvar med mine interesser.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k. Aktivitetene har vært fleksible i forhold til min dagsform og situasjon.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
l. Jeg føler at jeg er en likeverdig del av et arbeidslag.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
m. På gården er det lett å føle at jeg er til nytte.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
n. Jeg føler ikke at jeg strekker til på gården.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**34. I hvilken grad har aktivitetene og arbeidsoppgavene på gården gitt deg:**

(Sett ett kryss for hver linje)	I svært liten grad	I liten grad	I noe grad	I stor grad	I svært stor grad
a. bedre mestringsopplevelse?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. bedre selvfølelse?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. mer optimisme for fremtiden?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. bedre humør?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. bedre fysisk form?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. bedre psykisk helse?.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**35. Er det vært dyr på gården du har vært på?**

Nei (Hopp direkte til spørsmål 37)       Ja

## KONTAKT OG ARBEID MED DYRENE

36. Nedenfor følger noen påstander om din kontakt og arbeid med dyrene. Les hver påstand nøye og tenk igjennom hvor godt dette passer for deg.

(Sett ett kryss for hver linje)	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
a. Arbeidsoppgavene med dyrene er viktige for meg.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Den fysiske kontakten med dyrene er viktig for meg.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Kontakten med dyrene gjør meg rolig.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Det er godt å gi dyrene omsorg og nærhet.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Jeg får mer enn jeg gir når jeg arbeider med dyrene.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Dyrene krever ikke mer enn jeg kan gi.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## SOSIALE AKTIVITETER

Nedenfor er det spørsmål om de sosiale aktivitetene du har deltatt i og menneskene du har vært sammen med på gården.

37. Hvilke typer av sosiale aktiviteter deltar du i på gården? (flere svar mulig)

- |   |  |
|---|--|
| <input type="checkbox"/> Arbeid sammen med andre      | <input type="checkbox"/> Turgåing sammen med andre |
| <input type="checkbox"/> Måltider sammen med andre    | <input type="checkbox"/> Annet (hvilke?) _____     |
| <input type="checkbox"/> Friluftsliv sammen med andre |  |

38. Er det andre deltakere på gården samtidig med deg?

- |   |                             |
|---|-----------------------------|
| <input type="checkbox"/> Nei (Hopp til spørsmål 40) | <input type="checkbox"/> Ja |
|---|-----------------------------|

Hvis ja:

a. Hvor mange deltakere er det på gården samtidig med deg? \_\_\_\_\_ deltakere

b. Hvor ofte er du sammen med andre deltakere på gården? (Sett ett kryss)

Svært sjeldent	Sjeldent	Av og til	Ofte	Svært ofte
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**39. Nedenfor er noen påstander om dine opplevelser av å være sammen med de andre deltakerne i tilbudet. Les hver påstand nøye og tenk igjennom hvor godt den passer for deg. Svar så hvor enig eller uenig du er i hver påstand.**

(Sett ett kryss for hver linje)	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
a. Jeg føler meg komfortabel sammen med de andre deltakerne på gården.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Jeg er fornøyd med kontakten jeg har med de andre deltakerne.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Jeg liker stemningen her.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Jeg synes størrelsen på gruppen er ok.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. Jeg føler at jeg hører til i gruppa.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**40. Hvem har hovedansvaret for deg når du er på gården? (sett ett kryss)**

- Gårdbruker
  Andre ansatte på gården  
 Gårdbrukers ektefelle/samboer
  Andre (hvem?) \_\_\_\_\_  
 Ansvarlig for arbeidsmarkedsbedrift

**41. Nedenfor er noen påstander om din opplevelse av hvordan du samarbeider med gårdbruker eller den (de) som har ansvaret for deg på gården? Les hver påstand nøye og svar så hvor enig eller uenig du er i hver påstand.**

(Sett ett kryss for hver linje)	Helt uenig	Delvis uenig	Verken enig eller uenig	Delvis enig	Helt enig
a. Jeg føler meg verdsatt av gårdbruker/arbeidsleder.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. Vi har et godt samarbeid.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c. Vi snakker sammen om alt som har med gården å gjøre.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Gårdbruker/arbeidsleder motiverer meg.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e. De gjør for mye for meg og gir meg en følelse av at jeg ikke mestrer ting.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f. Gårdbruker/arbeidsleder tar utgangspunkt i mine muligheter.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g. Gårdbruker/arbeidsleder er der hvis jeg trenger dem.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h. Jeg tør å spørre gårdbruker/arbeidsleder om hjelp.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i. Gårdbruker/arbeidsleder tar tilstrekkelig hensyn til hva jeg ønsker å lære på gården.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j. Gårdbruker/arbeidsleder behandler meg som en vanlig kollega.....	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

42. Nedenfor er noen påstander som handler om å få sosial støtte fra andre mennesker. Hver påstand beskriver en måte mennesker kan støtte deg på. Angi hvor typisk hver påstand er for den støtten **du** har mottatt fra den personen som har hatt **hovedansvaret** for deg på gården.

(Sett ring rundt ett tall for hver linje)		Slett ikke typisk				Svært typisk
1	Viser interesse for hvordan du har det.....	1	2	3	4	5
2	Løser problemer for deg.....	1	2	3	4	5
3	Spør om du trenger hjelp.....	1	2	3	4	5
4	Tar seg av dine problemer.....	1	2	3	4	5
5	Gjør det lett for deg å snakke om alt som du synes er viktig.....	1	2	3	4	5
6	Sier at du skal være stolt av deg selv.....	1	2	3	4	5
7	Samarbeider med deg for å få ting gjort.....	1	2	3	4	5
8	Presser deg til å gjøre ting.....	1	2	3	4	5
9	Spør deg hvordan du har det.....	1	2	3	4	5
10	Gir deg klare råd om hvordan du skal takle problemer.....	1	2	3	4	5
11	Gir deg informasjon slik at du forstår hvorfor du gjør ting.....	1	2	3	4	5
12	Forteller deg hva du skal gjøre.....	1	2	3	4	5
13	Er tilgjengelig for samtale når som helst.....	1	2	3	4	5
14	Peker på skadelige eller tåpelige måter du ser på ting på.....	1	2	3	4	5
15	Tilbyr en rekke forslag.....	1	2	3	4	5
16	Lar deg ikke dvele ved opprørende tanker.....	1	2	3	4	5

## OMGIVELSENE PÅ OG RUNDT GÅRDEN

**43. Hva slags naturomgivelser er det rundt gården? (flere svar mulig)**

Eng og jorder

Fjellområde

Skogkledd

Bebyggelse

Vann

**44. Nedenfor er en rekke påstander om din opplevelse av omgivelsene på og rundt gården du er på. Les hver påstand nøye og tenk igjennom hvor godt dette passer for deg? 0 betyr ikke enig i det hele tatt og 10 betyr fullstendig enig.**

Ikke enig i det hele tatt	Veldig lite enig	Lite enig	Mye enig	Veldig mye enig	Fullstendig enig					
0	1	2	3	4	5	6	7	8	9	10

(Sett ring rundt ett tall for hver linje)

Dette stedet gir beskyttelse fra uønskede forstyrrelser.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Dette stedet er fascinerende.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Jeg opplever lite krav til å konsentrere meg når jeg er her.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Å være her gir meg et avbrekk fra min daglige rutine.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Jeg blir fort interessert i det som foregår her.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
På dette stedet kommer jeg meg vekk fra ting som vanligvis krever min oppmerksomhet.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Å være her hjelper meg til å la være å tenke på ting jeg må få gjort.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Dette stedet vekker min nysgjerrighet.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Det er mye å utforske og oppdage her.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Min oppmerksomhet blir ledet mot mange interessante ting her.....	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10
Dette stedet er som en egen verden i seg selv...	0 --- 1 --- 2 --- 3 --- 4 --- 5 --- 6 --- 7 --- 8 --- 9 --- 10

45. Hvor viktig eller uviktig er omgivelsene på og rundt gården for deg? (sett ett kryss)

Svært  
uviktig

Ganske  
viktig

Verken uviktig  
eller viktig

Ganske  
viktig

Svært  
viktig

**Andre kommentarer:**

Her kan du skrive kommentarer du har angående tilbudet du deltar i og/eller andre tanker du har til spørreundersøkelsen.

**Tusen takk!**

**Vi setter stor pris på at du tok deg tid til å svare på denne spørreundersøkelsen**



**Kontaktinformasjon:**

**Prosjektleder:**

Camilla Ihlebæk

Professor

Tlf. 64 96 51 08

e-post [camilla.ihlebak@umb.no](mailto:camilla.ihlebak@umb.no)

**Prosjektmedarbeidere:**

Bente Berget

Forsker PhD

Tlf. 64 96 52 26

e-post [bente.berget@umb.no](mailto:bente.berget@umb.no)

Lina Harvold Dalskau

PhD student

Tlf. 64 96 51 61

e-post [lina.dalskau@umb.no](mailto:lina.dalskau@umb.no)



# Paper I



**Satisfaction of basic psychological needs as mediator in the relationship between subjective health complaints and satisfaction with life for people out of work**

Lina H. Ellingsen-Dalskau<sup>1</sup>, Dr. Bente Berget<sup>2</sup>, Prof. Gunnar Tellnes<sup>3</sup>, and Prof. Camilla Ihlebæk<sup>14</sup>

Lina H. Ellingsen-Dalskau (Corresponding author)

Norwegian University of Life Sciences

Faculty of Landscape and Society

Department of Public Health Science

P.O. Box 5003, NO-1432 Ås, Norway

E-mail address: [lina.dalskau@nmbu.no](mailto:lina.dalskau@nmbu.no)

Cell: +47 400 69 077

Fax: +47 64 96 53 01

Dr. Bente Berget

2 - Agderforskning, Gimlemoen 19, 4630 Kristiansand, Norway

E-mail: [bente.berget@agderforskning.no](mailto:bente.berget@agderforskning.no)

Cell: +47 934 23 402

Prof. Gunnar Tellnes

3 - University of Oslo, Institute of Health and Society, P.O.Box 1130 Blindern,  
0318 Oslo, Norway

E-mail address: [gunnar.tellnes@medisin.uio.no](mailto:gunnar.tellnes@medisin.uio.no)

Phone: +47 22 85 06 18

Cell: +47 909 71 297

Prof. Camilla Ihlebæk

1 - Norwegian University of Life Sciences, Department of Public Health Science,  
P.O. Box 5003, NO-1432 Ås, Norway.

E-mail: [camilla.ihlebak@nmbu.no](mailto:camilla.ihlebak@nmbu.no)

Cell: +4767231264

4 - Østfold University College, Faculty of Health and Social Work Studies,  
Fredrikstad, Norway

## **Abstract**

**Purpose.** In this research, the self-determination theory was applied to investigate the possible mediator role of satisfaction of the basic psychological needs for competence, relatedness and autonomy in the relationship between the subjective health complaints, musculoskeletal pain and psychological complaints, and satisfaction with life for people out of work.

**Materials and method.** A total of 201 adult participants attending prevocational training on care farms in Norway answered a questionnaire including demographic questions, and standardised instruments on subjective health complaints, basic psychological need satisfaction, and satisfaction with life. A structural equation model was created to examine the mediator function of basic psychological need satisfaction to understand how musculoskeletal and psychological complaints influence satisfaction with life.

**Results.** Participants had been out of work for a long time, had a high prevalence of subjective health complaints and a low level of satisfaction with life. Psychological complaints were negatively associated with satisfaction with life. For men, basic psychological need satisfaction fully mediated this relationship, whilst for women this relationship was partially mediated.

**Conclusion.** Clients in prevocational training on care farms seem to have several struggles in life and may have a challenging and long-lasting return to work process ahead of them. Basic psychological need satisfaction was one important mechanism mediating the negative relationship between psychological complaints and satisfaction with life. According to self-determination theory, prevocational training on care farms could counteract some of the negative consequences of having a high degree of psychological health complaints by supporting the satisfaction of basic psychological needs for the clients. This could also aid clients' challenging process of returning to ordinary work.

**Keywords:** Satisfaction with life, self-determination theory, subjective health complaints, basic psychological needs, vocational rehabilitation, return to work

## Introduction

Musculoskeletal pain and mental health problems are common in the general population [1-4], and are related to the main reasons for sickness absence in Norway [5-9]. These complaints have been termed subjective health complaints (SHC) because they have no objective pathological signs or symptoms, or because the objective findings are not in accordance with the degree of complaints [10]. Much research has investigated the psychobiological mechanisms and processes that lead to SHC. Prevalence and severity of SHC have been suggested to be caused by sensitisation of the central nervous system by sustained activation [4], related to lack of coping such as the experience of helplessness/hopelessness [4, 11], and cognitive emotional sensitisation [12]. However, little is known about how SHC influence basic psychological needs.

For most people, SHC are experienced as normal everyday complaints, but for some people these complaints become severe and long lasting [1]. Negative consequences associated with a high level of SHC include increased functional problems [13], a reduction in general health, sleep quality, psychological health [14, 15], and health-related quality of life [16]. Several studies have shown a relationship between the number of SHC and falling out of working life [17-19]. Also, a high number of SHC has been found to predict disability pensions 14 years later [20]. As such, SHC may have several negative consequences for the individual's function and well-being, where musculoskeletal and psychological complaints seem to be especially negative for work participation.

Individuals outside the work force, dependent on social security benefits, are one of the groups with the absolute highest number of symptoms in the population [17]. Øyeflaten et al. [21] found that the return to work process for people who have been out of work for a long time is both complex and long lasting. However, it has been found that re-employment of people with common health problems can lead to improved self-esteem, and improved general and mental health [22]. This also reflects the need for effective rehabilitation programs for people outside the workforce. Prevocational training on care farms [23] is a vocational rehabilitation program that promotes health through practical and varied farming activity adjusted to clients' interests and capacities [24-27]. Prevocational training is offered by the Norwegian welfare system in order to facilitate return to work. Prevocational rehabilitation targets individuals who have been out of work for many years, and aims to help clients develop basic vocational and social skills enabling them to eventually move on to competitive employment [28-31].

Despite the negative consequences of SHC, there is still little research attempting to identify psychological mechanisms that could clarify and explain how living with SHC may influence satisfaction with life negatively. Self-determination theory (SDT) [32, 33] offers a theoretical framework that can provide useful insight into the underlying mechanisms involved when considering how experiencing SHC is related to satisfaction with life. SDT describes three basic psychological needs; competence, relatedness and autonomy, necessary for function and well-being. Competence is the need to be effective in dealing with the environment, relatedness reflects the need to be connected to and caring for others, and autonomy reflects the universal desire to experience volition and be a causal agent [32]. According to SDT, positive human growth, optimal motivation and function is promoted through satisfaction of basic psychological needs [32-35]. Contexts that support satisfaction of these basic psychological needs, facilitate autonomous motivation which has persistently been related to psychological health [36], self-esteem, well-being, the experience of meaningfulness [37, 38], flow [39], and daily well-being [40].

Musculoskeletal and psychological complaints are related to the main reasons for falling out of the work force. An understanding of the relationship between these complaints and satisfaction with life, by investigating the possible mediator role of basic psychological need satisfaction in this relationship, could provide new insight that might aid the vocational rehabilitation process for people who have been outside the workforce for a long period of time.

The aim of this study was therefore, to investigate the possible mediator role of basic psychological need satisfaction in the relationship between musculoskeletal pain and psychological complaints and satisfaction with life for clients in prevocational training on care farms in Norway. Considering the importance of basic psychological need satisfaction for function and psychological well-being, we hypothesised that need satisfaction will mediate at least some of the association between musculoskeletal and psychological complaints and satisfaction with life.

## **Materials and Methods**

### ***Recruitment and Participants***

There was no official national register of care farms in Norway in 2011. Care farms were therefore identified by contacting the local councils of agriculture in each county in Norway. Care farm-coordinators in all 18 counties provided lists of farms that could possibly be offering prevocational training. After excluding irrelevant farms from these lists, the remaining farms were contacted by phone

to find out whether they had a relevant on-going prevocational program on the farm, and to collect information about the number of clients that participated. Questionnaires were mailed to each care farm, and the farmer was asked to hand out questionnaires to all clients between 18-66 years of age (working age population), who had participated in the prevocational program for at least one month.

This resulted in a sample of 201 adult participants attending prevocational training on 65 different care farms in Norway. The participants were out of work and dependent on different kinds of welfare benefit arrangements from The Norwegian Labour and Welfare Administration (NAV).

### ***Materials***

A questionnaire containing questions about demographic and background information including sex, age, marital status, education and previous working situation, and standardised instruments on SHCs, psychological need satisfaction, and satisfaction with life was used.

#### *Subjective Health Complaints*

Participants answered the subjective health complaints inventory where they indicated on a 4-point scale (0=not all, 1=a little, 2=some, and 3=severe) how they had experienced 29 common complaints during the last 30 days [2]. The complaints can be divided into five subscales; Musculoskeletal pain, Psychological complaints, Gastrointestinal problems, Allergy and Flu [2]. In this study, only the subscales musculoskeletal pain (headache, neck pain, upper back pain, lower back pain, arm pain, shoulder pain, migraine and leg pain during physical activity) and psychological complaints (extra heartbeats, heat flushes, sleep problems, tiredness, dizziness, anxiety and sadness/depression) were used in the main analysis.

#### *Basic Psychological Needs*

The participants answered the basic psychological needs scale [32, 41] to measure the extent to which the psychological needs for competence (6 items), relatedness (8 items), and autonomy (7 items,) were generally satisfied in their lives. Items were rated on a Likert scale ranging from 1 (not true at all) to 7 (completely true). The subscales consist of items like "I often do not feel very capable" (competence), "People in my life care about me" (relatedness), and "I feel pressured in my life" (autonomy).

#### *Satisfaction With Life*

Last, participants answered the satisfaction with life scale (SWLS) [42], measuring a global cognitive judgement of satisfaction with life. They indicated on a seven-point scale ranging from 1 (strongly

disagree) to 7 (strongly agree) their agreement with five items like “In most ways my life is close to my ideal” and “The conditions of my life are excellent”. The total possible score range from 5-35 and can be divided into six categories reflecting how satisfied one is with life. Three categories are below the neutral mid-point (20); Extremely dissatisfied (5-9), Dissatisfied (10-14), and Slightly dissatisfied (15-19), and three categories are above the neutral mid-point; Slightly satisfied (21-25), Satisfied (26-30), and Extremely satisfied (31-35).

### ***Statistical Analysis***

Statistics were performed using SPSS and AMOS version 23.0, and the level of statistical significance was set to 0.05. Gender differences were investigated with independent samples t-tests and chi-square tests. A structural equation model (SEM), where numerous linear models can be fit simultaneously [43], was created to examine the mediator function of basic psychological need satisfaction in the relationship between SHC and satisfaction with life for people out of work (figure 2 and 3). Individual answers on items of the musculoskeletal pain subscale ( $\alpha = .83$ ) and the psychological complaints subscale ( $\alpha = .82$ ) were summarized to create two observable variables reflecting the severity of such complaints [2], included in the model. Further, a latent variable named Need satisfaction was created from the mean scores on the subscales of autonomy ( $\alpha = .64$ ) competence ( $\alpha = .64$ ), and relatedness ( $\alpha = .81$ ). Last, an observable variable named Satisfaction with life was created by summarising the five items measuring satisfaction with life ( $\alpha = .90$ ). Chronbach’s alpha values [44] showed acceptable or good internal consistency of all scales.

The SEM had three levels, created to investigate the possible mediator role [45] of basic psychological need satisfaction. The rationale for choosing basic psychological need satisfaction as a possible psychological mechanism in the relation between SHC and satisfaction with life was theoretically anchored in the SDT. This theory describes how different life situations and contexts can be more or less supportive of basic psychological need satisfaction, and further how basic psychological need satisfaction influences function and well-being [32]. The first level in the model therefore, consisted of the exogenous variables Musculoskeletal pains and Psychological complaints, while the second level consisted of the latent mediating variable Need satisfaction. The last level in the model consisted of the endogenous variable Satisfaction with life. To avoid excluding cases with missing variables (16.3%) from the SEM analysis, missing values (1.4% in total) were imputed using expectation maximisation (EM) [46, 47]. A multigroup invariance test exploring differences between men and women was conducted on the full model including the pathways between all exogenous and endogenous variables. The model was



then calculated and reduced until non-significant regressions were removed. The multigroup invariance test showed significant gender differences, and men and women were therefore analysed separately resulting in two parsimonious model, one for men (figure 2) and one for women (figure 3). The parsimonious models were then re-run using the original data resulting in virtually similar models.

### ***Ethical Considerations***

The study was approved by the Norwegian Regional Ethics Committee for Southeast Norway (2010/2042) and the Norwegian Social Science Data Services. Informed written consent was obtained from all participants.

### **Results**

#### ***Descriptive Statistics***

The sample consisted of 43.0% men and 57.0% women with a mean age of 35.7 years (SD 11.9, range: 19-65 years). A large proportion of participants was unmarried (63.7%) or divorced (11.9%), and had a low level of education with 86.1% reporting having completed secondary school or upper secondary school only (table 1). Most of the participants had been out of work for a long time as 19.8% of men and 20.0% of women had been out of work for 2-5 years, and 25.6% of men and 23.5% of women had been out of work for more than 5 years. In addition, 16.3% of men and 16.5% of women had no work experience.

Insert table 1 about here

#### ***Subjective Health Complaints***

Nearly all participants (99.5%) had experienced at least one health complaint during the last 30 days. Both men and women reported a high number of health complaints (M=11.7, SD=6.2), with 63.5% having experienced ten or more complaints during the last 30 days. The number of health complaints did not differ between the genders ( $t(198)=-2.81$ , n.s.). The most commonly reported single complaints for both men and women were headache, tiredness, anxiety, sadness/depression and sleep problems. However, women had significantly higher prevalence of headache (52.3% men and 80.0% women) and tiredness (61.6% men and 79.1% women) compared to men (figure 1). The prevalence of psychological complaints was 90.0% (83.7% men and 94.8% women), and 86.0% for musculoskeletal pains (77.9% men and 92.2% women). In addition, 81.0% (72.1% men and 88.7% women) reported having both musculoskeletal and psychological complaints. The mean severity scores for psychological complaints

(M=7.7, SD=4.89), and musculoskeletal complaints (M=6.6, SD=5.45) (table 2) were included in the SEM. Women had significantly higher mean severity scores than men on both musculoskeletal ( $t(197) = -3.29$ ,  $p < .001$ ) and psychological complaints ( $t(198) = -2.82$ ,  $p < .005$ ).

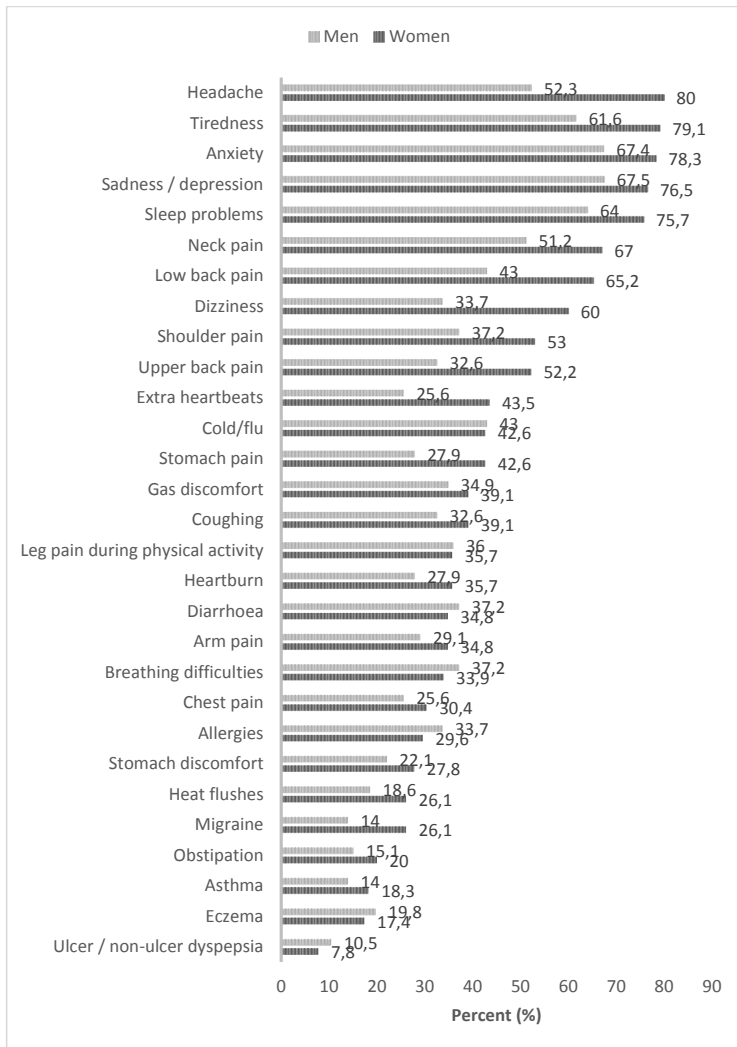


Figure 1. Percentage of women (n=115) and men (n=86) reporting different health complaints.

### Basic Psychological Needs

Results showed that respondents reported mean values in the upper mid-range on satisfaction of the basic psychological needs (table 2). There were no differences between men and women for any of the three basic psychological needs of autonomy ( $t(192)=-1.00$ , n.s.), relatedness ( $t(192)=-.83$ , n.s.) and competence ( $t(184)=1.32$ , n.s.).

### Satisfaction with Life

Results from the satisfaction with life scale showed that most participants (68.7%) scored beneath the neutral point of the scale, being extremely dissatisfied (20.8%), dissatisfied (27.2%) or slightly dissatisfied (20.7%). Only 24.7% reported life satisfaction above the neutral point, being slightly satisfied (10.4%), satisfied (7.9%) or extremely satisfied (6.4%). Last, 5% had a neutral score, indicating that the person is equally satisfied and dissatisfied with life. There were no significant differences between men and women's satisfaction with life scores ( $t(195)=.19$ , n.s.).

Insert table 2 about here

### Structural equation models

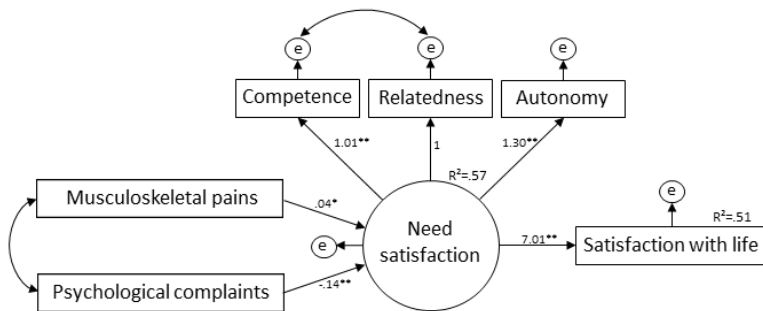


Figure 2. Structural equation model for men with standardised regression weights ( $\beta$ ) showing pathways between the variables Musculoskeletal pains and Psychological complaints, Need satisfaction, and Satisfaction with life.  $R^2$  values were given for each of the two dependent variables. e represents the measurement error associated with the latent and observed variables. Regression weights followed by \* were significant at a .05 level, and those followed by \*\* were significant at a .01 level.

All pathways displayed in the model for men (figure 2) were significant at the .05 or .01 level. The first exogenous variable, Musculoskeletal pains, was positively associated with the mediator variable Need satisfaction ( $\beta = .04$ ). The second exogenous variable, Psychological complaints was negatively

associated with Need satisfaction ( $\beta = -.14$ ). Further, the mediator variable Need satisfaction was positively associated with Satisfaction with life ( $\beta = 7.01$ ). A total of 57.0% of the variance in Need satisfaction was explained by Musculoskeletal pains and Psychological complaints, and 51.0% of the variance in Satisfaction with life was explained by Need satisfaction. The fit statistics indicated an overall good fit of the model to the data ( $X^2(7) = 9.34, p > .05; X^2/df = 1.33, TLI = .981, CFI = .991, RMSEA = .063$ ).

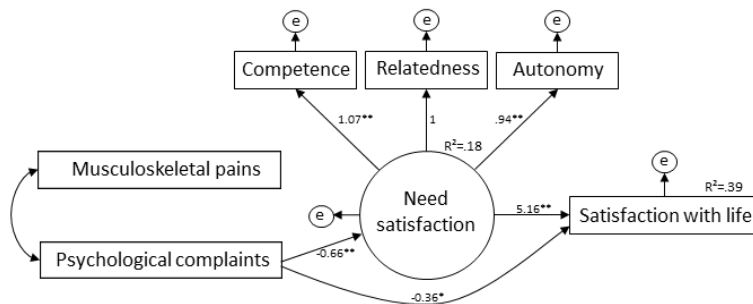


Figure 3. Structural equation model for women with standardised regression weights ( $\beta$ ) showing pathways between the variables Musculoskeletal pains and Psychological complaints, Need satisfaction, and Satisfaction with life.  $R^2$  values were given for each of the two dependent variables. e represents the measurement error associated with the latent and observed variables. Regression weights followed by \* were significant at a .05 level, and those followed by \*\* were significant at a .01 level.

All pathways displayed in the model for women (figure 3) were significant at the .05 or .01 level. The first exogenous variable, Musculoskeletal pains, was unrelated to any of the outcome variables in the model. The second exogenous variable, Psychological complaints, was negatively associated with Need satisfaction ( $\beta = -.66$ ), and Satisfaction with life ( $\beta = -.36$ ). Further, the mediator variable Need satisfaction was positively associated with Satisfaction with life ( $\beta = 5.16$ ). A total of 18.0% of the variance in Need satisfaction was explained by Psychological complaints, and 39.0% of the variance in Satisfaction with life was explained by Psychological complaints and Need satisfaction together. The fit statistics indicated an overall good fit of the model to the data ( $X^2(8) = 12.56, p > .05; X^2/df = 1.57, TLI = .959, CFI = .978, RMSEA = .071$ ).

## Discussion

As expected for clients in prevocational programs, the participants in the current study had been outside the workforce for a substantial amount of time, and considerably longer than clients in other vocational rehabilitation clinics in Norway [48]. In addition, 16% of the participants had no work experience at all,

indicating that clients in prevocational training on care farms have a relatively weak connection to the ordinary workforce. This may have negative consequences for the return to work process for these individuals, as long-term sick-leave, being fully sick-listed prior to starting a vocational rehabilitation program, or not having a job to return to, makes it more unlikely to return to work [49-51].

Further, participants in the current study had a very high prevalence of SHC with 99.5% reporting at least one of the 29 health complaints during the last 30 days. The mean number of complaints and the degree of comorbidity was also very high and almost 90% of women and more than 70% of men had both musculoskeletal and psychological complaints. These findings are in accordance with Kjeldesberg et al. [17], who found that individuals outside the workforce, dependent on social security benefits, were one of the groups with the absolute highest number of symptoms in the population. Psychological complaints were most commonly reported in this study, with a prevalence of 90%. This is high compared to the normal population, which has a prevalence of 65% of such complaints [1]. Anxiety and sadness/depression alone were reported by more than 70% of respondents. The relatively low age of the participants and the high degree of psychological complaints, could therefore reflect the general trend that mental illness has become a main cause for long-term sick-leave and new disability payments for young people. Musculoskeletal pains were also commonly reported, and these complaints have been found to be one of the main reasons for sick-leave and disability [9]. Contrary to other studies [1, 3, 52], no significant difference regarding the number of complaints was found between men and women. However, one could speculate that the generally high number of complaints reported by these participants means that differences between the genders diminish. However, women still reported a higher severity of musculoskeletal and psychological complaints than men.

In accordance with the high number of SHC reported, the scores on satisfaction with life were accordingly low. More than two thirds of the sample fell beneath the neutral mid-point of the scale, which is lower than what is usually found in Western countries [53]. Almost one third of participants were classified as dissatisfied, indicating that things are not going well in a number of life domains, or that things are really bad in one or two domains [54]. Further, one in five participants were extremely dissatisfied with their life, which is the lowest level of satisfaction with life. Reporting such a low level of satisfaction with life, indicates that these individuals may have difficulties in multiple areas of life. This often includes chronic problems like addiction or alcoholism [54].

The low level of satisfaction with life, indicates that most clients in prevocational training on care farms struggle in multiple areas of life [54]. The high level of SHC put them at risk of experiencing several health and functional problems including difficulties related to returning to ordinary work [9, 13-20].

The SEMs in this study also corroborated earlier findings that a high level of SHC may have negative consequences for the individual, as a high degree of psychological complaints was negatively associated with satisfaction with life. Further, satisfaction of the basic psychological needs, autonomy, relatedness and competence, was identified as a mediator in the relationship between psychological health complaints and satisfaction with life. For men, basic psychological need satisfaction fully mediated the relationship between psychological health complaints and satisfaction with life, while for women this relationship was only partially mediated by basic psychological need satisfaction. Even though the psychobiological mechanisms leading to SHC have been described in the literature [4, 10, 12], the current findings, give important insight about a psychological mechanism that may be at play when people already have developed a high level of complaints.

Basic psychological need satisfaction therefore, is one important psychological mechanism that can explain some of the negative association between psychological complaints and satisfaction with life. The mediator role of basic psychological needs also fits well with the theoretical framework of SDT [34]. This theory views positive human growth and function as a result of contexts that support satisfaction of basic psychological needs [34, 35]. According to the SDT framework, it therefore seems that for clients in prevocational training on care farms, experiencing a high degree of psychological complaints creates contexts that make it difficult to satisfy basic psychological needs, which again seems to make these clients less satisfied with their lives. Being out of work or becoming more isolated because of depression or anxiety are just two examples of how psychological complaints may interfere with basic psychological need satisfaction. This may also explain the strong positive association between basic psychological needs satisfaction and satisfaction with life that was found in the current study.

The mediator function of basic psychological need satisfaction in the relationship between psychological complaints and satisfaction with life was similar for men and women. Only one significant difference was found in the multigroup invariance test investigating possible differences between men and women in the SEM. This difference was the strength of the negative association between psychological complaints and basic psychological need satisfaction. Although the relationship was present in the models for both men and women, this negative association was significantly stronger for men compared to women. This

could also explain why the relationship between psychological complaints and satisfaction with life was fully mediated by basic psychological need satisfaction for men, while the same relationship was only partially mediated by basic psychological need satisfaction for women. A high degree of psychological complaints seems to make it more difficult for men to satisfy basic psychological needs compared to women. Men therefore may be more vulnerable to experiencing these complaints than women. This is in line with Gjesdal et al. [55] findings that of individuals on certified sick-leave with a psychiatric diagnoses, men had a higher risk of transitioning to disability pension compared to women.

The gender difference could be explained by differences in vulnerability, risk factors, and coping strategies that exist between the genders in relation to experiencing and developing mental health problems [56]. As an example, women usually have larger primary social networks, and engage in close social ties more often than men do [56]. This could provide women with an alternative way of having their basic psychological needs satisfied. It could also explain why no differences were found in relation to satisfaction with life between the genders, despite women reporting a higher severity of psychological complaints compared to men.

Somewhat surprisingly, musculoskeletal pains did not influence basic psychological need satisfaction and satisfaction with life in the same way as psychological complaints did, even though the prevalence of these complaints was high. Even more surprisingly, for men the relationship between musculoskeletal pains and basic psychological need satisfaction was positive, indicating that having a higher degree of such complaints would have a positive influence on basic psychological need satisfaction, which contradicts the SHC literature and the theoretical framework of SDT. However, psychological complaints might be more related to basic psychological need satisfaction than musculoskeletal complaints, because they both represent mental processes. The current findings that psychological complaints have a negative association with basic psychological need satisfaction, is also in accordance with findings that anxiety and depression have a high explanatory power for functional status [57], as basic psychological needs are considered essential for function and well-being by the SDT [32-35]. Other factors or mechanisms with a stronger connection to physical functioning could therefore be more relevant for understanding how musculoskeletal pains influence individuals in different ways. This possibility has also been corroborated by a recent study by Øyeflaten et al. [58], who identified poor physical function as a mediator in the relation between musculoskeletal complaints and fear avoidance beliefs for patients in vocational rehabilitation. The results of the current study give new insight about individuals participating in prevocational training on care farms. These clients have been out of work for a long period, and seem

to struggle with a high degree of health complaints. Further, the results showed that basic psychological need satisfaction was one important mechanism mediating the negative relationship between psychological complaints and satisfaction with life. Prevocational training programs on care farms could therefore, rather than attempting to treat the health complaints, focus on creating contexts that support satisfaction of basic psychological need for the clients. Because basic psychological need satisfaction was positively associated with satisfaction with life, such a focus could also reduce the negative relationship between psychological complaints and satisfaction with life. From the SDT perspective, basic psychological need satisfaction could therefore counteract some of the negative consequences associated with having a high degree of psychological health complaints by facilitating autonomous motivation, function, and well-being [32-35]. These findings are also corroborated by Opsahl et al. [59] study showing that among individuals with chronic lower back pain, it was the individuals' expectancies of return to work that was most strongly associated with successful return to work [59]. From the SDT perspective, satisfaction of basic psychological needs would be one way of facilitating motivation and optimal function that could also lead to a more positive belief of being able to return to work. A recent study by Farholm et al. [60] also found that providing support for autonomy, competence and relatedness improved well-being, physical activity and return to work for patients in vocational rehabilitation.

Some weaknesses should be considered when interpreting the results of this study. The cross-sectional design means we cannot infer causality. Therefore, the direction of the pathways between the variables in the SEMs could go in the opposite direction. However, the application of SDT is a strength, ensuring a sound theoretical rationale for the postulated direction of the relationship in the models. Further, because there was no official registers of care farm clients, the farmers distributed invitations to participate in the study and questionnaires to the clients. We therefore had no exact information about the response rate or about the clients that refused to participate. This means that we cannot be sure that the sample is representative of the population. This selection bias is a sampling bias that can threaten the internal validity of the results. However, the high number of participating care farms and the substantial geographical spread of these farms indicates that the representativeness of the participants may be satisfactory. Even though the results most likely have a limited applicability to the population at large, the results may be more relevant for other clients participating in prevocational training on care farms. However, results related to prevalence, including descriptive findings about the



clients, level of SHC and level of satisfaction with life may have a weaker transferability than the associations between variables found in the SEMs.

In conclusion it seems that clients in prevocational training on care farms have been outside the workforce for a long time, have a high level of SHC, and a low level of satisfaction with life. This means they could have several struggles in life and have a challenging and long-lasting return to work process ahead of them. Further, clients' high degree of psychological health complaints was negatively associated with satisfaction with life, and this relationship was mediated by satisfaction of basic psychological need. By creating need supportive contexts making the clients feel autonomous, related and competent, prevocational training on care farms could, according to SDT, counteract some of the negative consequences of having a high degree of psychological health complaints by facilitating function and well-being. This could also aid clients' challenging process of returning to ordinary work.

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#### **Declaration of interest**

The authors report no conflict of interest.

Table 1. Proportion (%) women and men in categories related to marital status and highest reported level of education.

Variables	Total (n=201) N (%) <sup>a</sup>	Women (n=115) N (%) <sup>a</sup>	Men (n=86) N (%) <sup>a</sup>
<b>Marital status</b>			
Unmarried	128 (63.7)	60 (52.2)	68 (79.1)
Divorced	24 (11.9)	13 (11.3)	11 (11.0)
Married/Partner/Cohabitant	44 (21.9)	38 (33.0)	6 (7.0)
<b>Education</b>			
Secondary school (up to 9 years)	81 (40.3)	47 (40.9)	34 (39.5)
Upper secondary School (10-12 years)	92 (45.8)	48 (41.7)	44 (51.2)
University/college (more than 12 years)	17 (8.5)	11 (9.6)	6 (7.0)
Other	8 (4.0)	6 (5.2)	2 (2.3)

<sup>a</sup> Values on categories do not add up to 100% due to missing values (range 1-2.6%)

Table 2. Mean, Standard deviation (SD) and range of scores for variables in the SEM: Musculoskeletal pain, Psychological complaints, and the three basic psychological needs Competence, Relatedness and Autonomy.

Variables in the structural equation model (SEM)	Total (n=201)			Women (n=115)			Men (n=86)		
	N <sup>a</sup>	Mean (SD)	Range	N <sup>a</sup>	Mean (SD)	Range	N <sup>a</sup>	Mean (SD)	Range
Musculoskeletal pain	199	6.60 (5.45)	0-23	115	7.52 (5.32)	0-23	85	5.41 (5.41)	0-19
Psychological complaints	199	7.70 (4.89)	0-21	115	8.64 (4.76)	0-21	85	6.39 (4.80)	0-18
Psychological needs									
Autonomy	199	4.70 (1.00)	1.9-7	115	4.74 (0.89)	2.3-6.7	84	4.64 (1.14)	1.9-7
Competence	199	4.44 (1.07)	1.3-7	115	4.37 (1.08)	2.3-7	84	4.53 (1.07)	1.3-7
Relatedness	199	5.15 (1.06)	1.6-7	115	5.20 (1.00)	1.6-7	84	5.07 (1.13)	2.3-7

<sup>a</sup> N values less than total N is due to missing values (range 0-2)

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# Paper II





## Understanding how prevocational training on care farms can lead to functioning, motivation and well-being

Lina H. Ellingsen-Dalskau, Bente Berget, Ingeborg Pedersen, Gunnar Tellnes & Camilla Ihlebæk

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RESEARCH PAPER

## Understanding how prevocational training on care farms can lead to functioning, motivation and well-being

Lina H. Ellingsen-Dalskau<sup>a</sup>, Bente Berget<sup>b</sup>, Ingeborg Pedersen<sup>a</sup>, Gunnar Tellnes<sup>c</sup> and Camilla Ihlebæk<sup>a,d</sup>

<sup>a</sup>Department of Landscape Architecture and Spatial Planning, Section for Public Health Sciences, Norwegian University of Life Sciences, Ås, Norway; <sup>b</sup>Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences, Ås, Norway; <sup>c</sup>Institute of Health and Society, University of Oslo, Oslo, Norway; <sup>d</sup>Faculty of Health and Social Work Studies, Østfold University College, Fredrikstad, Norway

### ABSTRACT

**Purpose** Prevocational training aims to improve basic vocational and social skills, supporting return to work for people who have been out of work for a long time. Care farms provide prevocational training; the aim of the study was to use the self-determination theory to gain an understanding of how these programmes can lead to healthy functioning and motivation for clients. **Method** A total of 194 participants in prevocational training on care farms answered questions about demographic information, their perception of being a colleague, the social community on the farm, experiencing nature and animals and need satisfaction. A cross-sectional design resulting in a structural equation model was used to understand how elements of the care farm context influence satisfaction of three psychological needs. **Results** The results showed that a feeling of being a useful colleague led to competence, experiencing a sense of group belonging led to relatedness and autonomy, while receiving social support from the farmer led to satisfaction of all three needs for the participants. **Conclusions** The results explain how prevocational training can stimulate participants' functionality, motivation and well-being. This understanding enables initiators and managers of prevocational training to understand and further strengthen the need-supportive elements of such programmes.

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### KEYWORDS

Care farms; need support; return to work; self-determination theory; vocational rehabilitation

### ► IMPLICATIONS FOR REHABILITATION

- Prevocational training on care farms can facilitate motivation, functioning and well-being for clients.
- Making clients feel like useful colleagues that belong to a client group will strengthen the positive qualities of these programmes.
- Support, understanding and acknowledgement from the farmer are the most important elements for a positive development for the clients.

## Introduction

Work can be health promoting and contribute to building social identity, competence, self-worth and self-esteem by including people in the community.[1–3] Participation in society also enhances well-being and provides a means of achieving individual satisfaction and accomplishment.[4] On the other hand, recipients of disability benefit report poorer perceived physical and mental health [5–7] and lower well-being [8] compared to employees. Unemployment and long-term sickness absence can also lead to a state of deprivation and distress,[9] and Dooley et al. [10] found that those who became unemployed had over twice as much a risk of

increased depressive symptoms and of becoming clinically depressed. As such, loss of work has been linked to a range of serious problems, from low self-esteem, relational conflicts, substance abuse, depression and anxiety [4] to poverty, social isolation, stigma [11] and increased mortality risk over time.[11–13] The positive value of work in relation to health and well-being,[14] and the detrimental effect of being out of work indicate a need for vocational programmes that can contribute to aiding the challenging transition back to ordinary work.[15] These programmes should therefore both counterbalance the negative consequences of being

out of work and help the person to build necessary skills that support the process of return to work.

Prevocational training provides a temporary work environment for individuals who have been out of work for many years. The aim is to improve basic vocational and social skills that enable individuals to move on to competitive employment at a later stage.[16–19] Several care farms offer prevocational training, which is part of the Green Care concept,[20] where health is promoted through practical and varied farming activities.[21–24] These programmes typically comprise practical and varied work experience that can include livestock farming, forest management, the cultivation of grain, fruit or vegetables or other activities on a farm.[22] Prevocational training on care farms is one of the work rehabilitation programmes offered by the Norwegian health and social service system. It is aimed at helping individuals on long-term sick leave to return to ordinary employment. It is a low-threshold programme for a variety of client groups, referred from different health and social care agencies. The Norwegian Labour and Welfare Administration (NAV) is one such stakeholder. Health care institutions at the municipal level are another. A 2006 survey estimated the number of such farms to be 650.[25] In 2010, this number had increased to approximately 950.[26] In 2012, a national approval system was introduced, where 375 farms have currently achieved care farm certification.[27] They offer a wide range of services to different user groups, including children, youths, adults and elderly people with dementia.

Previous studies have shown that care farms offer real and meaningful work activities that provide an opportunity to learn new skills and build new confidence.[21,28–30] In addition, it has been emphasized as a positive characteristic of care farms that they offer a flexible work environment, where clients have an opportunity to experience ordinary working life while being sick at the same time,[28] to work at their own pace [29,31] and have freedom to switch between activities according to their interests and levels of functioning.[19,29]

The social community on the farm, which includes a farmer who provides practical and emotional support, guidance and feedback, has also been described as an important factor in prevocational training on care farms.[28,29,31] In addition to the farmer, the social community includes other clients with whom one can spend time.[21] Being part of a client group has been shown to increase feelings of security and acceptance,[19,29,31,32] which contribute to clients' mental well-being.[29]

Last, being in nature and working with animals are often part of the care farm context. Studies have shown that clients appreciate the opportunity to work outside in natural surroundings,[31] experience calmness and be in a space that gives an opportunity to be alone.[21,29,31] These findings are supported by the research illustrating mental health benefits of exposure to nature.[33] Furthermore, animals offer closeness, warmth and calmness,[28] and it has been found that clients enjoyed working with animals because this involves taking care of other living beings.[31] Animals are also experienced as safe, enabling clients to share problems with another being that neither judges nor gossips.[31]

Despite previous studies, there is still a need for further research on how the farmer and the farm context can promote individual progress towards recovery.[19] The self-determination theory (SDT) [34] explains how contexts can stimulate healthy functioning, motivation and well-being,[35–37] and it can provide useful insight into how the prevocational context on care farms can build the basic skills necessary to eventually move on to competitive employment.

According to SDT, functioning, motivation and well-being are promoted through contexts that support the psychological needs of competence, relatedness and autonomy.[34–37] Competence is the need to be effective in dealing with the environment. Relatedness reflects the need to be connected to and care for others, and autonomy reflects the universal desire to experience volition and be a causal agent.[34] Contexts that undermine need satisfaction lead to controlled motivation [35,38,39] and have negative effects on well-being.[38] On the other hand, need-supportive contexts lead to autonomous motivation [35,38,39] related to psychological health,[38] self-esteem, well-being and the experience of meaningfulness.[39–41] Need-supportive contexts typically provide a clear structure, a feeling of choice [39,42] and involve interesting and challenging activities.[39] However, autonomy support, which involves being understood and acknowledged by a relationship partner,[38,39,43–45] is the most important factor facilitating autonomous motivation.[39] It has been related to secure attachment, intimacy,[42,46] increased self-esteem, positive affect, better relationship quality and well-being.[46] Understanding the mechanisms and consequences of need fulfilment can therefore explain how some contexts stimulate motivation, functionality and psychological well-being.

Research has identified several important elements of the prevocational care farm context. However, there is still little systematic knowledge about how such programmes can contribute to positive development for

clients. The purpose of this study is to understand how the main elements of the prevocational training context on care farms can lead to healthy functioning, motivation and well-being, by examining the relationship between elements of the care farm context and the satisfaction of psychological needs. This understanding is valuable for initiators of prevocational programmes, as well as for the farmers and managers who are in daily contact with clients on the farms, because it provides an opportunity to understand and further strengthen health-promoting mechanisms of the prevocational contexts.

## Methods

### *Procedure and recruitment*

As there was no official national register of care farms in Norway in 2011, care farms were identified by contacting the local departments of agriculture in each county in Norway. We received lists with approximately 800 possible care farms from coordinators in all 19 counties. After excluding farms with other user groups and farms that had not yet started up, questionnaires were mailed to 130 active care farms with adult participants attending ongoing prevocational programmes or clients struggling with addiction or mental health problems. The main supervisor in charge of the clients on the farm was asked to hand out the questionnaires to clients between 18 and 66 years of age (working age), who had attended the care farm programme for at least one month. The farms were then contacted by phone to ensure that questionnaires had been handed out and also to map possible reasons for missing answers. This resulted in a further 61 farms being excluded due to information that there were currently no clients on the farm, that the clients were not in the target group or that the programme on the farm had been terminated. In total, we received questionnaires from 69 farms. Last, an additional four farms were excluded because of missing informed consents from the participants, and nine farms were excluded because they only had one client on the farm. This resulted in a total of 56 participating farms.

### *Participants*

The sample consisted of 194 participants in prevocational training programmes from 56 different care farms, including farms from 16 of the 19 counties in Norway. The study population consisted of out-of-work adults who were recipients of different kinds of social benefits from the NAV. Our calculations indicated that the participant response rate was approximately 45%.

## Materials

A questionnaire was developed for the purpose of a large research project investigating prevocational training on care farms in Norway. The project group consisted of the authors, except for the third author, representatives of the two Norwegian farmers' unions, NAV and a user representative from the patient organization for mental health. The questionnaire contained a range of questions eliciting demographic and background information, including sex, age, marital status and prior working situation, as well as standardized scales for health and social support. In addition, questions about prevocational training on the farm were developed by the authors for the purpose of the project. Questions about working with animals and performing work tasks were constructed on the basis of a qualitative study of clients on a care farm.[28] Questions about perceptions of group belonging were obtained from a large questionnaire mapping the quality of care farming in the Netherlands. Only questions used in this study are described in further detail later.

### *Perception of being a useful colleague*

Participants' perception of being a useful colleague was measured by five statements: 'There is always something meaningful for me to do here'; 'The activities are well organized'; 'I feel like an equal part of a work group'; 'It is easy to feel useful on the farm'; and 'I feel inadequate working on the farm' (reversed). The statements were rated on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

### *Social support from the farmer*

The non-directive subscale [47,48] of the Social Support Inventory [49] was used to measure support from the farmer. The subscale contain eight support statements (e.g., 'Made it easy to talk about anything you thought was important') to be rated on a five-point Likert scale ranging from 1 (not at all typical) to 5 (very typical).

### *Group belonging*

Participants answered five statements about their experiences of belonging to a group with other clients on the farm. Statements included: 'I feel comfortable being with the other clients on the farm'; 'I am satisfied with the contact I have with the other participants'; 'I like the atmosphere here'; 'I think the size of the group is ok'; and 'I feel like I belong in the group'. The statements

were rated on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

### *Work and contact with animals*

Participants answered six statements about their experience of work and contact with animals on the farm. Statements included: 'The physical contact with the animals is important to me'; 'It feels good to be close to and to care for the animals'; and 'The animals do not demand more than I can give'. The statements were rated on a five-point Likert scale ranging from 1 (totally disagree) to 5 (totally agree).

### *Experience of the nature surroundings on the farm*

The fascination subscale published by Hartig et al. [50] from the Perceived Restorativeness Scale [51] was used to measure participants' experience of the nature surroundings. Participants were asked to indicate how much they agreed with five statements related to fascination (e.g., 'There is much to explore and discover here' and 'My attention is drawn to many interesting things') on an 11-point Likert scale ranging from 0 (not at all) to 10 (completely).

### *Psychological needs*

Respondents answered the basic Psychological Needs Scale [52] to measure the extent to which the psychological need for competence (6 items), relatedness (8 items) and autonomy (7 items) was generally satisfied in their lives. Items were rated on a Likert scale ranging from 1 (not true at all) to 7 (completely true). The subscales consist of items such as 'I often do not feel very capable' (competence), 'People in my life care about me' (relatedness) and 'I feel pressured in my life' (autonomy).

### *Statistical analysis*

Statistics were produced using SPSS and AMOS version 23.0, and the level of statistical significance was set to 0.05. Structural equation modelling (SEM) is a method whereby numerous linear models can be fitted simultaneously,[53] and an SEM was created to examine the relationship between elements of the care farm context and satisfaction of the three psychological needs (Figure 1). Answers on scales relating to non-directive support ( $\alpha = 0.89$ ), being a useful colleague ( $\alpha = 0.77$ ), client group belonging ( $\alpha = 0.88$ ), work/contact with animals ( $\alpha = 0.94$ ) and experience of nature ( $\alpha = 0.88$ ) were averaged to create observable variables reflecting

elements of the care farm context. Furthermore, answers to items relating to each need were averaged to produce observable variables for satisfaction of competence ( $\alpha = 0.63$ ), relatedness ( $\alpha = 0.82$ ) and autonomy ( $\alpha = 0.62$ ). Cronbach's alpha values [54] showed acceptable or good internal consistency of all scales. The two levels in the SEM were theoretically anchored in the SDT, describing how different contexts can be more or less need-supportive.[34] The first level therefore consists of exogenous variables representing the elements of the farm context, while the second level consists of endogenous variables representing the three psychological needs. To avoid excluding the 20.6% of cases with missing variables, missing values (2.24% in total) were imputed using expectation maximization (EM) in SPSS.[55,56] The full model, including direct pathways between all exogenous and endogenous variables, was calculated and then reduced until non-significant regressions were removed to create a parsimonious model (Figure 1). The parsimonious model was then re-run using the original data, resulting in a virtually identical model. Last, a multi-group invariance test of the full model was conducted to check for possible gender differences.[57] No significant differences were found between genders, and men and women will therefore be treated as one group in the following analysis.

### *Ethical considerations*

The study was approved by the Norwegian Regional Ethics Committee for Southeast Norway (2010/2042) and Norwegian Social Science Data Services. Informed written consent was obtained from all participants.

## **Results**

### *Descriptive statistics*

There was an even distribution of men (43.8%) and women (56.2%) in the sample, and the mean age was 34.63 years (SD 12.2), with respondents ranging between 18 and 66 years of age (Table 1). A large proportion of participants were unmarried (63.9%), and women reported that they were living with a cohabitant significantly more often than men,  $\chi^2(4) = 16.66$ ,  $p < 0.01$ . Participants also had a low level of education, with 85.6% reporting only having completed lower secondary school or upper secondary school (Table 1). Just over 50% of participants had been introduced to the care farm by the NAV, while 40% had been introduced to the programme by other actors in the health care sector. It varied greatly how long participants had attended the programme at the farm. While most (36.6%) reported

attending for 1–6 months, 22.6% had attended for 1–2 years and 20.6% for more than 2 years. There was no typical pattern for how many days per week participants attended the care farm, with answers ranging from once a week to five times a week, and with significantly more women coming to the farm once a week than men,  $\chi^2(4) = 9.71, p < 0.05$ .

### The care farm

The surroundings of the farm were experienced as important or very important by 84.5% of participants. In addition, the farm context included animals for more than 90% of participants, and 94.5% of women and 84.7% of men reported that they worked with animals. Working with animals was also the most frequently reported activity at the farm (63.6%), followed by firewood production (26.2%), cooking and preparing food (19%) and working with plants or in the garden (17.9%). With respect to the social community on the farm, most participants (38.1%) reported being at the farm with 4–6 other clients, 24.7% were in groups with 1–3 other clients, 14.5% with 7–9 other clients and 16.5% reported being together with 10–15 clients. The majority of participants reported that the farmer (69%) or the

farmer's spouse (7.7%) had chief responsibility for the clients on the farm. Only 18.2% reported that a vocational rehabilitation coordinator or other employee on the farm had chief responsibility. The term 'farmer' will therefore be used when referring to the responsible supervisor on the farm, even though some participants are supervised by others.

### Structural equation model

For the variables reflecting the main elements of the farm context included in the SEM, both men and women reported generally high mean values (Table 2). However, women reported a significantly higher score for the positive experience of working with animals compared to men,  $t(170) = -2.92, p < 0.05$  (Table 1). The reported mean levels of the psychological needs were in the upper mid-range of the scale, and there were no differences between men and women (Table 2).

The two exogenous variables of work and activity with animals and nature experiences were excluded from the model as they had no significant pathways to any of the endogenous variables. All pathways displayed in the model were significant at the 0.01 level (Figure 1). The exogenous variable, useful colleague, had one

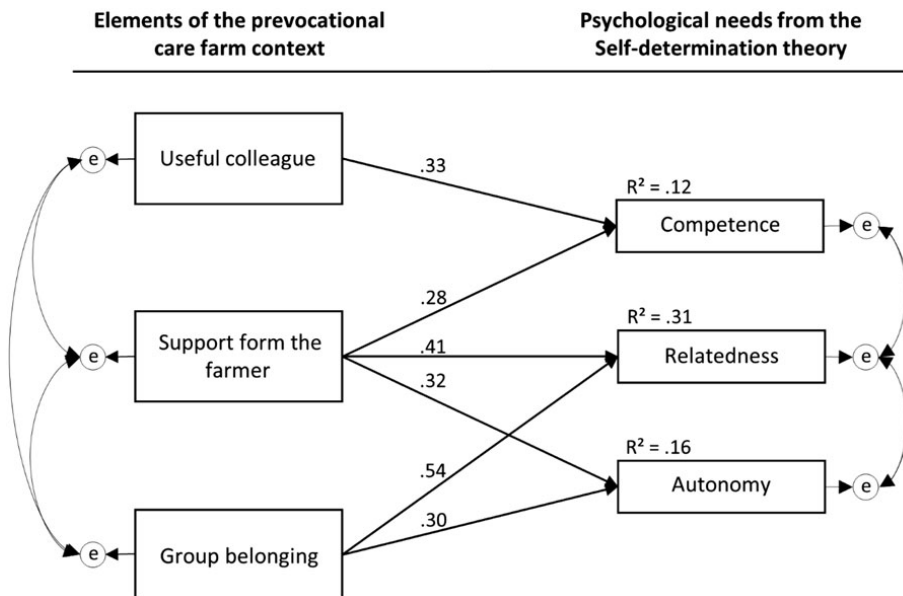


Figure 1. Structural equation model with standardized regression weights ( $\beta$ ) that show direct effects between variables reflecting the care farm context; useful colleague, support from the farmer, and group belonging, and the three psychological needs competence, relatedness and autonomy.  $R^2$  values are given for each of the three dependent variables.  $e$  represents the measurement error associated with the observed variables.



positive direct pathway to the endogenous variable competence ( $\beta = 0.33$ ). The second exogenous variable, support from the farmer, had direct pathways to all three endogenous variables. In descending order of magnitude, these pathways reflect the positive influence of social support from the farmer had on relatedness ( $\beta = 0.41$ ), autonomy ( $\beta = 0.32$ ) and competence ( $\beta = 0.28$ ). The third exogenous variable, group belonging, had two direct pathways to endogenous variables. In descending order of magnitude, these pathways reflect the positive influence that group belonging had on relatedness ( $\beta = 0.54$ ) and autonomy ( $\beta = 0.30$ ). A total of 12% of the variance in competence, 31% of the variance in relatedness and 16% of the variance in autonomy were explained by variables reflecting

elements of the prevocational care farm contexts in the model (Figure 1). The fit statistics indicated an overall good fit of the model to the data,  $\chi^2(3) = 4.728$ ,  $p > 0.05$ ;  $\chi^2/df = 1.576$ ; TLI = 0.98, CFI = 0.996, RMSEA = 0.055.

## Discussion

The results showed that participants reported generally high levels of feeling like a useful colleague, social support from the farmer and client group belonging. As expected, the model indicated that these three main elements of the care farm context described in the literature were related to need support. Contrary to our expectations, work and contact with animals and

Table 1. Proportion (%) of women and men in categories related to, marital status, education, time out of work and how long and how often the participants have been attending the programme on the farm.

Variables	Total (n = 195) N (%) <sup>a</sup>	Women (n = 109) N (%) <sup>a</sup>	Men (n = 85) N (%) <sup>a</sup>
Marital status			
Unmarried	124 (63.9)	58 (53.2)	66 (77.6)
Divorced	27 (13.9)	15 (13.7)	12 (14.1)
Married/partner/cohabitant	41 (21.1)	34 (31.2)	7 (8.2)
Education			
Lower secondary school (up to 9 years)	77 (39.7)	44 (40.4)	33 (38.8)
Upper secondary school (10–12 years)	89 (45.9)	46 (42.2)	43 (50.6)
University/college (more than 12 years)	15 (7.7)	9 (8.3)	6 (7.1)
Time out of work when participant started attending the programme at the farm			
0–1 year	42 (21.6)	26 (23.8)	16 (18.9)
1–2 years	31 (15.9)	17 (15.6)	14 (16.5)
2–5 years	38 (19.6)	23 (21.1)	15 (17.6)
More than 5 years	46 (23.7)	22 (20.2)	24 (28.2)
No work experience	34 (17.5)	20 (18.3)	14 (16.6)
How long have you attended the care farm programme?			
1–6 months	71 (36.6)	39 (25.7)	32 (37.7)
7–12 months	39 (20.1)	26 (23.9)	13 (15.5)
1–1½ years	28 (14.4)	19 (17.4)	9 (10.6)
1½–2 years	16 (8.2)	10 (9.2)	6 (7.1)
More than 2 years	40 (20.6)	15 (13.8)	25 (29.4)
How many days per week do you spend at the farm?			
Once a week	35 (18)	27 (24.8)	8 (9.4)
Twice a week	41 (21.1)	22 (20.2)	19 (22.4)
Three times a week	53 (27.3)	31 (28.4)	22 (25.9)
Four times a week	47 (24.2)	22 (20.2)	25 (29.4)
Five times a week or more	817 (8.8)	7 (6.4)	10 (11.9)

Table 2. Mean, standard deviation (SD) and range of answers for variable in the SEM; useful colleague, support from farmer, group belonging, work and contact with animals and nature experiences, and the three psychological needs competence, relatedness and autonomy.

Variables in the structural equation model (SEM)	Total (n = 195)			Women (n = 109)			Men (n = 85)		
	N <sup>a</sup>	Mean (SD)	Range	N <sup>a</sup>	Mean (SD)	Range	N <sup>a</sup>	Mean (SD)	Range
Useful work colleague	190	4.44 (0.64)	2.4–5	108	4.47 (0.63)	2.4–5	82	4.39 (0.65)	2.6–5
Support from the farmer	187	4.16 (0.75)	2–5	105	4.23 (0.75)	2–5	82	4.07 (0.74)	2.4–5
Group belonging	193	4.43 (0.72)	2–5	109	4.5 (0.65)	2.5–5	84	4.33 (1.14)	2–5
Work and contact with animals	172 <sup>b</sup>	4.27 (0.99)	1–5	102 <sup>b</sup>	4.45 (0.96)	1–5	70 <sup>b</sup>	4.01 (0.99)	1–5
Nature experience	187	8.17 (1.7)	0.6–10	105	8.35 (1.69)	0.6–10	82	7.94 (1.7)	3–10
Psychological needs									
Competence	192	4.44 (1.06)	1.3–7	109	4.4 (1.09)	2.3–7	83	4.5 (1.03)	1.3–7
Relatedness	192	5.14 (1.08)	1.6–7	109	5.21 (1.03)	1.6–7	83	5.05 (1.14)	2.3–7
Autonomy	192	4.69 (1.0)	1.9–7	109	4.75 (0.89)	2.3–6.7	83	4.61 (1.12)	1.7–7

<sup>a</sup>N values less than total N (194) are due to missing values (range 1–7).

<sup>b</sup>The N value for work and contact with animals is lower because not everyone worked with animals on the farm.

experience of nature did not predict need support. This was somewhat surprising, considering the positive descriptions of nature and animals found in several articles.[21,28,29,31] However, lancu et al. [19] also found that accounts of nature were mentioned less in their studies on care farms. In relation to need support, feeling like a useful colleague, social support from the farmer and the relationship with other clients therefore are of greater importance. However, considering that almost all participants value the surrounding of the farms and that working with animals is the most common task, the meaning of animals and nature in the care farm context needs to be explored further. A total of 12% of the variance in competence, 31% of the variance in relatedness and 16% of the variance in autonomy were explained by the three elements of the farm context that remained in the model. The need-supportive role of each of these three elements will be discussed in relation to existing literature in order to enhance our understanding of how prevocational training on care farms can lead to healthy functioning, motivation and well-being.

Experiencing being a useful colleague led to competence for the participants. This finding is in accordance with other studies in the care farm literature, which have found that work and activities are important in relation to acquiring new skills and confidence.[21,28,29] Having organized work tasks that were perceived as meaningful and a feeling of being a useful resource were part of feeling like a useful colleague. According to theory, need-supportive contexts typically provide a clear structure and involve interesting and challenging activities.[39] Activities carried out in autonomy-supportive contexts are also perceived as meaningful, since meaningfulness is a result of need satisfaction.[41] However, even though experiencing being a useful colleague led to competence, it did not support the needs for autonomy and relatedness. Even if competence is necessary for any type of motivation, satisfaction of autonomy is required for the motivation to be autonomous.[34] Having useful work and feeling like a useful colleague are therefore not sufficient on their own to promote functionality, motivation and well-being for the participants.

In contrast, findings show that experiencing non-directive support from the farmer led to support of all the three needs. Autonomy support has been shown to be fully mediated by need support,[52] meaning that support from the farmer constitutes an autonomy-supportive relationship. This is in accordance with the SDT, where autonomy support, involving a responsive relationship partner who provides choice, encourages self-initiation [38,39,43,45] and gives sincere, specific positive feedback [38] and constructive negative

feedback [44] is described as the most important contextual factor facilitating need satisfaction.[39] In addition, an autonomy-supportive relationship also facilitates a feeling of choice,[39,42] which can explain the farmer's role in creating a flexible and varied work environment as described in the care farm literature.[19,29,31] Receiving recognition and understanding from the farmer enables participants to engage in activities based on their interests and level of functioning.[19,28,29,31,58] This result therefore explains why an involved farmer,[28,31] who takes a personal interest and provides practical and emotional support,[29] can promote individual progress towards recovery for the participants.

However, the social community on the farm also entails spending time with other clients. Our results show that having a sense of belonging to a group of other clients lead to relatedness and autonomy. This is in accordance with the care farm literature, where being part of a group gives clients confidence to be themselves, a feeling of being accepted,[19] and a sense of belonging and feeling secure.[29,31] The literature also states that accepting and respecting others contribute to mental well-being,[29] which is in line with the SDT, which states that giving autonomy support to others also leads to need fulfilment.[43] This finding underscores the positive consequences for participants of working together in groups.

These results clearly show how a need-supportive farm context is dependent on a supportive social community. Deci and Ryan [38] found that feeling related to a group facilitates internalization of values and behaviours endorsed in that setting, a mechanism that is based on the human desire to belong and feel connected.[36,38,41] Autonomy-supportive relationships also contribute to closeness, intimacy,[42,46] better relationship quality and well-being,[43,46] which point to the importance of having supportive and warm relationships in the prevocational context. A focus on need-supportive elements within the care farm context will therefore promote autonomous motivation, which has consistently been shown to be related to better psychological health, functionality and psychological well-being.[35–38,40] People feel free to follow their interests [38] and experience increased self-authorship when trying to reach their potential.[59] These positive consequences of a need-supportive context therefore show the importance of such experiences in a prevocational training programme aimed at strengthening social and vocational skills.

This study has several weaknesses and strengths. First of all, the cross-sectional design of the study entails limitations in terms of concluding on causal

relationships. Furthermore, due to the lack of official registers of care farm clients, we had to rely on farmers to distribute invitations to possible participants. This may have led to a biased sample with more positive attitudes towards the programme. However, to avoid this bias, farmers were asked to hand out the questionnaires to all relevant clients, and participants were asked to fill in the questionnaires in private. The lack of a national register also means that we have no exact information about the response rate and no data on clients who might have refused to participate. However, the careful mapping process, the high number of participating care farms and the substantial geographical spread, makes it possible to assume that the representativeness of the participants was satisfactory. Another weakness is the lack of standardized and validated questionnaires about prevocational training on the farms. However, standardized scales were used when possible, and the questionnaire was developed in close cooperation with relevant stakeholders. It was based on the care farm literature in order to ensure that the questions were relevant, and it was also pilot tested on a small group of clients. The standardized need satisfaction scale was used. It measures need satisfaction on a general level rather than in relation to the specific farm context. This was done to ensure validity by not having to alter the items. The scale was also part of a larger questionnaire focusing on experiences on the farm, which makes it probable that the answers reflect these experiences. Last, the application of a theoretical framework is a strength, making the results applicable to a broader range of work rehabilitation programmes. Further research could focus on following the participants and obtaining longitudinal data on the return-to-work process in order to more fully understand the meaning of need support in this process.

## Conclusion

Having the possibility to engage in interesting and challenging activities where you feel like a useful colleague, and being part of a social community, including an autonomy-supportive farmer and a reciprocal relationship with other clients, contributes to a need-supportive context on the farm. A focus on such elements will therefore promote healthy functioning, motivation and well-being for clients. Understanding the mechanisms and consequences of need fulfilment is valuable for initiators and managers of prevocational training, as it enables them to identify and further strengthen need-supportive elements of the programme, eventually benefitting clients in their challenging transition back to ordinary work.

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## Declaration of interest

The authors report no conflicts of interest.

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# Paper III





# Autonomy support and need satisfaction in prevocational programs on care farms: The self-determination theory perspective

Lina H. Ellingsen-Dalskau<sup>a,\*</sup>, Margrete Morken<sup>b</sup>, Bente Berget<sup>b</sup> and Ingeborg Pedersen<sup>a</sup>

<sup>a</sup>*Section for Public Health Sciences, Department of Landscape Architecture and Spatial Planning, Norwegian University of Life Sciences, Ås, Norway*

<sup>b</sup>*Department of Animal and Aquacultural Sciences, Norwegian University of Life Sciences, Ås, Norway*

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## Abstract.

**BACKGROUND:** Mental health problems are leading causes for early and prolonged withdrawal from the workforce. Green work on care farms represents a prevocational training program intended to stimulate return to work for people with mental health problems. Research suggests that care farms may improve mental health, but there is still little knowledge of the subjective perspective of clients in green work programs.

**OBJECTIVE:** To gain a deeper and broader understanding of the individual experiences of people with mental health problems participating in green work on care farms in Norway.

**METHODS:** A hermeneutic phenomenological research design was applied. Ten semi-structured interviews were conducted. The self-determination theory (SDT) was adapted to gain a deeper understanding of the themes that emerged in the analysis process of the interviews.

**RESULTS:** Five main themes materialize describing participants' experiences within the green work program. The main themes consist of (1) structure and flexibility, (2) understanding and acknowledgement, (3) guidance and positive feedback, (4) nature and animals, and (5) reflections on personal functioning and the future.

**CONCLUSION:** The main themes identified indicate a high degree of autonomy support and need satisfaction within the care farm context, which according to SDT can facilitate good human functioning, and well-being.

Keywords: Mental health problems, prevocational rehabilitation, return to work

## 1. Introduction

Mental health problems are one of the leading causes of disease and disability worldwide [1]. In Norway, mental health problems represent a leading cause for withdrawal from the workforce. Brage et al. [2] found

that for people between 25 and 39 years of age, mental illness caused half of all new disability grants. In addition, the lifetime prevalence of mental disorders is close to 50% [3]. Consequently, mental health problems contribute to both early and prolonged withdrawal from the workforce. Efficient treatment could therefore reduce suffering at the same time as it would be cost-effective for the employer and society at large [4].

There is a growing awareness of the importance of work in promoting or hindering mental health [1]. Work can promote recovery by bringing about a feeling of being needed, valued, and appreciated, an affirmation

\*Address for correspondence: Lina H. Dalskau, Norwegian University of Life Sciences, Section for Public Health Sciences, Department of Landscape Architecture and Spatial Planning, P.O. Box 5003, NO-1432 Ås, Norway. Tel.: +47 67 23 12 58; Mobile: +47 400 69 077; Fax: +47 64 96 53 01; E-mail: lina.dalskau@nmbu.no.

not easily acquired elsewhere [5]. Further, work shapes social identity and fosters self-worth by allowing people to participate and to be included in the community [6, 7], as well as building competence and self-esteem [5, 7]. Provencher et al. [8] concluded that the importance of work in relation to recovery for psychiatric patients was based on the empowerment, connectedness with others, and self-definition experienced or achieved at work. Work therefore promotes connection to the broader social and economic world, enhances well-being, and provides a means for individual satisfaction and accomplishment [9].

On the other hand, being out of work effectively excludes people from the benefits that employment brings. This may lead to a state of deprivation and distress [10]. The loss of work has been linked to serious health problems, stretching from low self-esteem, relational conflicts, substance abuse, depression, and anxiety [9] to poverty, social isolation, stigma, and ultimately, an increased mortality risk over time [11]. Those who became unemployed had a markedly lower sense of well-being [12] and over twice the risk of increased depressive symptoms and of becoming clinically depressed as those who continued to be employed [13]. Psychological health can deteriorate as a result of being out of work regardless of the reasons behind a person's falling out of the workforce.

However, more than 70% of people struggling with mental health problems want to work. The fact that only 10 to 12% do work not only reflects the challenges people with mental health problems face in the open labor market [1] but also demonstrates the urgent need for vocational interventions for this group.

### *1.1. Green work and prevocational training on care farms*

Green work is prevocational training on care farms provided by the Norwegian Labor and Welfare Administration (NAV) for people with mental health problems. It is part of the Green care concept, which focuses on the use of nature and natural resources to promote human mental and physical health [14] and is based on the use of a commercial farm to promote health through farming activity [15, 16]. This kind of service comprises practical and varied work experiences that may include livestock farming; forest management; the cultivation of grains, fruits, or vegetables; or other businesses on the farm, such as working in a farm shop or café [17]. Literature indicates that the clients' experience on care farms is unique because of a combination of different

characteristics. These include the structure and meaning of the work tasks, the social community on the farm, and exposure to nature and animals, and will be discussed further.

Work activities on care farms are often described as useful and meaningful [18, 19]. Overall, working on a farm offers a structure to everyday life with daily routines [20]; at the same time as, learning skills can lead to newfound confidence for clients [16]. However, the possibility of working at one's own pace and the opportunity to rest when having bad days seem to be important. Hassink et al. [20] found this to be particularly true for people with mental illness. In the qualitative study of Pedersen et al. [18] investigating the experiences of people with depression working on care farms, this was described by clients as the opportunity to experience ordinary working life and being sick at the same time. This kind of workplace flexibility, in which the intervention is tailored to each client's personal needs and abilities, has been identified as an important component of care farms.

The literature also describes the social community on the care farm, which seems to revolve around the personal and involved attitude of the farmer [18, 20]. According to social support theory [21], this type of involved attitude may lead to positive health effects by protecting the person from the adverse effects of stress and by contributing to increased self-esteem and self-regulation [22, 23]. Spending time with other people [16], having a sense of belonging, and feeling safe in a social group is emphasized by clients on care farms as important for healing [19, 20]. Elings & Hassink [19] describe how this "social factor" contributes to mental well-being as a result of clients feeling both accepted and respected as well as having the opportunity to give acceptance and respect to others [19]. Baumeister [24] describes how such positive relationship qualities may promote health by satisfying a basic biological need to belong [21].

Lastly, exposure to nature and animals is often part of the care farm context. Clients appreciated the opportunity to work outside in the fresh air [20], the calmness, and a space that gave the opportunity to be alone [16, 19, 20]. This appreciation is also supported by research that shows the immediate mental health benefits of exposure to nature [25]. Further, people with mental health problems experience work and contact with animals as safe. Those in past studies have described how animals neither judge nor gossip and how they could tell animals their problems [20]. Animals therefore offer a closeness, warmth, and calmness that is difficult to replace

[18]. In addition, clients in these studies enjoyed working with animals because it involved taking care of other living beings [20].

Research has demonstrated many benefits of working on a care farm, like better psychological and physical health, increased self-esteem, improved overall mood and self-efficacy, positive development of social skills, and feeling more energetic [16, 19, 26–29]. In addition, care farms seem to contribute towards the return to work process by getting the clients used to the structure of having a job, having responsibility, and working in a group [19]. However, despite this Elings & Hassink [19] found that client had difficulties formulating concrete future plans for return to work.

### 1.2. Aim

While research points to many important factors of care farming in general, to our knowledge no studies have been conducted on individuals own experiences of participating in green work. Based on factors identified as important to clients on care farms in other studies, we wanted to gain a deeper and broader understanding of the individual experiences of people with mental health problems participating in green work on care farms in Norway. This knowledge may be valuable for NAV, who is the initiator of the green work program, as well as for the farmers and managers on the care farms, as it can guide the development and design of optimal environments for the clients, important in a return to work process.

## 2. Method

### 2.1. Research design

Because the aim of the study was to gain a deeper and broader understanding of clients' experiences of green work on care farms, we used a hermeneutic phenomenological perspective [30]. This approach is suitable because we wanted to develop descriptions of clients experiences [30] of the work and social interactions on the care farm and their experiences of personal health and daily function. Secondly, we adapted the theoretical framework of the self-determination theory (SDT) [31] to elaborate on the main themes identified in the analysis of the interviews. The application of a theoretical framework implies a hermeneutical approach [32] offering a way of understanding phenomena, as well as a basis for organizing new insight

[33]. The application of SDT therefore is in line with the overall aim of the study. It can, based on the themes that emerged from the analysis of the interviews, tell us something about how the care farm context can motivate, engage, and contribute to better human functioning for clients participating in green work.

### 2.2. Ethical considerations

The study was approved by the Norwegian Regional Ethics Committee for Southeast Norway (2010/2042) and the Norwegian Social Science Data Services. Informed written consent was obtained from all participants.

### 2.3. Recruitment and study population

Clients from four care farms offering green work in southern Norway were included. At each particular care farm, the person responsible for the clients, being the farmer or a manager collaborating with the farmer, aided in the purposeful sampling of participants [34]. The study was limited to individuals who fit the following inclusion criteria: (1) they were participating in green work through NAV; (2) they were out of work; (3) they were receiving some kind of welfare benefit arrangement through NAV; and (4) they had been participating in green work at the care farm for at least one month, but for no longer than two years, prior to the interview. This resulted in a sample of 10 participants. Two men and eight women between 20 and 42 years of age who had participated in the green work program for between one month and one-and-a-half years accepted the invitation. Descriptive variables for each participant are presented in Table 1.

### 2.4. Data collection

The data was obtained through semi-structured individual interviews using an interview guide [32]. The interviews were conducted by the second author, and the first author was present. All interviews were taped, and lasted between 26 and 65 minutes. The participants were interviewed on the care farm in the spring of 2012. The interview guide was developed on the basis of earlier research identifying important elements of participating in interventions on care farms. The interview guide focused on five main themes and several relevant subthemes. These are presented in Table 2 and include (1) experiences with activities and work tasks; (2) social relationships with the farmer and other clients;

Table 1  
Background variables of the participants

Participant	Gender	Age	How many days per week at the farm/How many hours per day	Time out of ordinary work
A	Female	34	2 days/week/2 hours/day	10 years
B	Male	28	2 days/week/7 hours/day	4–5 years
C	Female	20	3 times/week/6 hours/day	No work experience
D	Female	22	3 days/week/7–7.5 hours/day	More than 1 year
E	Female	20	4 days/week/5 hours/day	10 months
F	Female	32	4 days/week/5 hours/day	3 years
G	Female	36	3 days/week/5 hours	4 years
H	Female	42	4 days/week/6 hours/day	12 years
I	Male	38	4 days/week/7 hours and 30 min	More than 3 years
J	Female	27	4 days/week/7 hours and 30 min	4–5 years

Table 2  
Main themes and sub-themes in the interview guide

Main themes	Sub-themes
1	Activities and work tasks In which activities or work tasks do you engage? How do you perceive your engagement in the activity/work task? Do you work with animals or in nature? How do you perceive working with animals or in nature?
2	Relationship with the farmer How do you perceive spending time with the farmer/manager? How do you like working with the farmer/manager? Relationship with other clients How do you spend time with the other clients on the farm? How do you perceive being with other clients on the farm?
3	Perception of personal health How do you experience your health right now? Has this changed since you started working on the farm? If so: What has contributed to this change?
4	Daily function and future plans How do you perceive your current everyday situation? How do you consider your possibilities for returning to work/education? Why do you think that you can/cannot return to work/education? How do you see your future?

(3) perception of personal health; and (4) outlook on daily function and future plans. It was emphasized that the guide only suggested a direction and that other themes brought forth during the interview would be welcomed. A strategy that contribute to more spontaneous and unexpected answers [32]. All interviews were conducted in Norwegian. Relevant quotes from the interviews used in the results section were translated from Norwegian into English by the first author and reviewed by the last author.

### 2.5. Data analysis

Interviews were transcribed verbatim by the second author, and N-Vivo software was used to aid the organizing of the process of analysis. The transcripts were analyzed in a four-step procedure according to a modified version of systematic text condensation (STC) inspired by Goirgi's phenomenological approach [35] as described in Malterud [30, 36, 37]. The following analysis process was conducted by the first and last

author. First, all the interviews were read several times by the authors to get a general sense of the material and to get an overall impression of the content related to the aims of the study. At the second stage of the analysis the interviews were reread before the two authors independently identified units of meaning that represented the participants' experiences with the green work program. Different themes related to these experiences were identified by the authors. At the third stage of analysis, involving an abstracting of the content of the units of meaning, the authors discussed and decided which units of meaning belonged to each sub-theme as described in Malterud [36]. Last, the authors reviewed the transcripts to check that the evolving themes and subthemes reflected the meanings conveyed. Throughout this process, five main themes emerged. They were labelled (1) structure and flexibility, (2) understanding and acknowledgement, (3) guidance and positive feedback, (4) nature and animals, and (5) reflections on personal functioning and the future. The self-determination theory (SDT) [31]

will be used to elaborate on the main themes after the themes have been presented in the result section.

### 2.5.1. *The self-determination theory*

SDT [31] is a theoretical framework that can give useful insight about underlying psychological mechanisms of experiences of being on care farms [38].

Motivation is about direction and persistence [39]. Self-determination theory is concerned with different types of motivation. Basically, extrinsic motivation feels pressured, while intrinsic motivation feels satisfying, as it originates from personal interests [40, 41]. However, while most behaviors are not intrinsically motivated, they are nonetheless valuable for effective functioning in the social world [42]. The salient question is therefore how individuals acquire the motivation to carry out these behaviors [40]. According to theory, this occurs as individuals internalize and integrate the social values and extrinsic regulations of uninteresting yet important activities into their identities [39, 42], resulting in autonomous motivation [40, 41]. Working, for example, can be experienced as something personally important even though the work tasks are, in themselves, not always experienced as interesting or enjoyable.

This internalization process is influenced by the social context [40, 42, 43]. Simply described, social contexts that facilitate satisfaction of the three psychological needs for competence, autonomy, and relatedness are described as autonomy supportive [31]. Such contexts facilitate autonomous motivation [39]. The understanding of conditions that facilitate or undermine autonomous human motivation can contribute to the development and design of social environments that stimulate optimal functioning and overall well-being.

### 2.6. *Rigour*

To ensure the trustworthiness of the investigation [44] several concerns will be addressed. First, the systematic text condensation used in this study ensures a transparent and systematic analysis that limits the effects of researchers' preconceptions in relation to the interpretation [30]. During the analysis process, the initial units of meaning in the text were independently identified by the first and last authors to ensure openness and to prevent premature closure with regard to themes and subthemes. At the next stage, the text analysis was done in collaboration to avoid biased results [30]. The authors' different professional backgrounds facilitated openness to different perspectives throughout the data

analysis process. The first author has a master's in health and social psychology, while the last author has a master's in animal sciences, as well as research experiences involving care farms as an arena in mental health rehabilitation. In addition to the strength of being multiple researchers working together, reflexivity was strived for through the use of a self-reflective journal [44], thereby ensuring self-awareness of preconceptions. Last, each interview ended with a verbal summary to ensure a common understanding and to help the participant to recall any forgotten aspects.

## 3. Results

Participants' experiences of important factors within the green work program can be categorized into five main themes: (1) structure and flexibility, (2) understanding and acknowledgement, (3) guidance and positive feedback, (4) nature and animals, and (5) reflections on personal functioning and the future.

### 3.1. *Structure and flexibility*

#### 3.1.1. *Everyday structure and routine*

Participants talked about acquiring the structure needed for learning how to work. This structure included getting up in the morning and coming to work on fixed days every week, and although it was sometimes experienced as demanding, it was also experiences as important to participants. One participant said,

*But it takes effort to get up every morning, and even if you are having a bad day, you can't just give a damn, sort of, but these are things you decide on.*

The working environment on the care farm was also structured, and the below description of how the beginning of each day was organized was typical of all the farms involved in the study:

*We arrive at 10 a.m. and have a meeting. We talk, and if anyone has anything to say they may do so—if you are having a bad day or something like that. . . Then we sit down and drink coffee and plan the day, speaking about anything and everything.*

#### 3.1.2. *Social structure*

In addition, the structure of the work included contact with other clients, making the farm an important arena for socialization, especially for people that had

anxiety about meeting other people. The description below illustrates how this was experienced by one participant:

*I was very nervous and stuff. Just sitting down to eat with the others [other clients on the farm] having lunch with the others was out of the question for me. I do it now. It's just something that has come about automatically, sort of.*

### 3.1.3. Having choices and being challenged

The care farm context also has a flexibility and diversity that contributes to the experience of having choices and feeling challenged, which was highly valued by participants:

*When you start with an activity and feel that this is me... I experience a great joy.*

*My day may quickly become deficient if I'm not being challenged.*

It was also common for participants to describe having choices about the work and activities in which they partook on the farm. This feeling of choice was experienced as important both in relation to having the possibility to follow interests and to having the flexibility to do something different when having a bad day. This is illustrated by the two below statements describing how the work situation is organized:

*It totally depends on what I can bear to do, or want to do that day.*

*It feels good that I can decide for myself.*

## 3.2. Understanding and acknowledgement

### 3.2.1. Relationship with the farmer/manager

All participants talked about being understood and acknowledged by the farmer/manager and about how good it felt to receive this understanding:

*They read you, really understand you well. If there is something we are unsure of they [the farmers/managers] see it straight away, and then they often provide an answer to a question or do something to ease the mood to prevent it from getting uncomfortable and sad.*

In addition, the relationship between the participants and the farmer/manager reflected a high degree of attachment and support. This is illustrated well in the below descriptions, given by two participants:

*I can get one of the managers to come with me if something is difficult in my everyday life. Whether it is after work hours or on weekends, I think they can come along. For instance, if I have a doctor's appointment I dread, or a meeting with NAV, they can always come along.*

*But when I'm here, the manager is like a second mother. And I feel I can talk to her; I don't always feel I can talk to my own mother about everything... With the manager it is different, and she gives good advice, and [I am]... very pleased with her.*

### 3.2.2. Relationship with other clients

This understanding and acknowledgement was also present in descriptions given by interviewees of their relationships with other clients on the farm. Here, participants also pointed to the positive impact of being in a group where they can help and support each other:

*Sometimes, you have a bad day, and then... we are here to help each other, and it feels good that we understand each other.*

*I get so involved in "why are you [other clients] here and what do you need help with?" Because we help each other, you know, we really do. We help each other in boosting each other's self-esteem. If there is a situation where someone thinks, "I don't really know if I can do this, if I dare to try," then we will come and give support.*

### 3.2.3. Feeling free to be yourself

Last, there were recurrent statements concerning the feeling of being able to be yourself and not feeling pressured to be someone else. This feeling, which seemed to be especially important to participants in relation to having bad days, is reflected in the below statement:

*And here [at the care farm], they take you as you are. Like me, if you have a bad day, they support you no matter what. It just makes everything a little easier.*

## 3.3. Guidance and positive feedback

### 3.3.1. Guidance from the farmer/manager

Another important theme of the work experience for participants revolves around getting guidance and positive feedback. The statements below exemplify how important guidance is for some participants and how

this guidance can contribute to participants' mobilization and action:

*How she [the manager] speaks to you and asks questions and guides you and helps you in situations in which you sort of have no clue. Or when you fail to see any solutions to a situation, she tells you not to give up; there is always a solution.*

Another dimension of being guided is the experience of being pushed to try new things, find solutions, and be independent. This experience of being encouraged to self-initiation is reflected in the statement below:

*The manager really wants us to figure things out on our own. We should find solutions... and not become dependent on her [the manager]. [She is] very concerned with getting people [clients] more confident.*

*But it doesn't matter if you fail; there is nothing wrong with that. Nobody is perfect. Then she [the manager] will help you if everything goes awry.*

### 3.3.2. Positive feedback

At the same time as participants are guided, they also receive positive feedback from the farmer or manager. One participant describes how positive feedback makes her more motivated:

*And when I realize that I really can do it, I take on challenges and stuff like that, and I see that I succeed. Also that people notice and tell me, that makes me—oh, then I grow even more, I want to continue on. So that helps a lot, getting feedback about positive things you do or say.*

## 3.4. Nature and animals

### 3.4.1. Calmness and inner peace

Working in nature and having contact with animals was also very much appreciated. For some, nature represented a break from everyday stressors and offered a sense of inner peace.

*It's so liberating... You are completely alone, and it's totally calm, and you can hear the birds, and it's just something about life. All the painful and negative thoughts disappear a little. They are put to the side. You get some kind of inner peace.*

### 3.4.2. Giving and receiving care

The animal contact also gave several participants a sense of being understood and having someone to turn

to. In addition, working with animals was described as important because it involved taking care of someone else. The next statement illustrates how this was perceived by several of the participants:

*If I were dealing with dead things, it would not give me the same sense of responsibility (laughing). Perhaps it would be easier to give a damn on a bad day. But I do; as long as you are dealing with live animals, you do care.*

## 3.5. Reflections on personal functioning and thoughts about the future

### 3.5.1. Psychological well-being

Descriptions related to psychological well-being resulting from being on the care farm were consistently found in the narratives. These experiences include enhanced mood, more positive and fewer negative thoughts, and the joint feelings of being able to face difficulties and having the ability to find solutions:

*I feel much better about myself now than ever before. I'm a little happier; I'm a little more positive. I try to always see the positive side of things. I try to do the opposite of what I did when I first got here, when everything was just negative. Things like that... I'm just happier and more content.*

*I deal with adversities in a better way, have a positive outlook on things, and see solutions and not just limitations.*

### 3.5.2. Vitality and energy

In addition, one participant described how activities that used to drain her of energy were suddenly experienced as positive. It is interesting how engagement in the same activity was experienced in a totally new way after participating in the green work program:

*Not just doing things because you have to. I have children, so there are lots of things you feel you must be involved in, but it didn't really give me anything; it used to drain me of energy, but now I feel that it gives me something.*

### 3.5.3. Newfound motivation

Last, several participants expressed a newfound motivation towards moving on in life and also towards resuming ordinary work. This desire was typically described as a change that had come about after participating in the green work program. The two below statements point to the desire to move forward in life and

to a newfound belief in being able to return to ordinary work:

*At the same time, do not hold on to past experiences that have been painful, but also see the positive things and the possibilities to move on. Actually, see what it is I have, my resources and what do I like to do, what are my interests, and maybe try something new that is truly something I want to do.*

*I think that I will go back to (ordinary) work again, while before I thought that I would never be able to do that. Now I think that some day (laughing) it will be my turn.*

#### 3.5.4. Future plans

However, even though most participants seem to experience new hope and aspirations for the future, there is great variation in how concrete these future plans for returning to work are. The statements below illustrate two opposite experiences of such future plans:

*Now, I feel ready to move on, get some practical work experience, and the plan is to start an evening school for furniture carpeting.*

*Don't really know what to do. First of all, I want to start working toward something a little more goal directed. That is important for me now.*

## 4. Interpretation of the findings

These themes will be elaborated on from an SDT perspective to deepen the understanding of how green work on care farms can foster or hinder positive human growth, personal integration, social functioning, self-motivation, and well-being [40, 43, 45]. This understanding is important as it provides a basis for understanding the health-promoting factors in green work that constituted the very foundation of a successful return to work process in this context.

### 4.1. Structure and flexibility

The farm context provided a structure for work. According to SDT, the presence of a structure is essential, as it represents the social values and behavioral regulations that become internalized [39, 41], leading to self-regulated behavior that allows the individual to function within the social world [42]. In addition, structure has been found to support competence, and La

Guardia [46] found that when parents and teachers provided structure for children, they created opportunities for the children to stretch their skills in an optimally challenging way. Further, participants' positive descriptions of the flexibility and diversity of the farm context offering choices and challenges also makes sense within an SDT framework. It has been found that autonomous work motivation is facilitated by challenging environments [41]. Additionally, the feeling of choice is important, especially when it allows one to find options that one wholeheartedly endorses [41, 47].

### 4.2. Understanding and acknowledgement

The feeling of being understood and acknowledged by the farmer/manager was described as important by all participants in the study. According to SDT, this constitutes the main elements of autonomy support, which is the most important contextual factor facilitating autonomous motivation [39, 41, 42, 48, 49]. Such understanding and acknowledgement facilitate autonomous motivation because it is a basic human desire to belong and feel connected [39, 43, 50], leading to a willingness to take in regulations and values held by others. Patrick et al. [51] found that satisfaction of the need for relatedness supported integration and motivation [52]. In addition, the closeness of the relationship between the farmer and the participants promoted attachment and intimacy, which is in line with previous research [47].

This attachment was also present in the relationship between the clients on the farm. Research has found that feeling involved with and related to a family or group facilitates internalization of values and behaviors endorsed in that setting [39, 51]. Participants felt especially good about helping and supporting each other. This is interesting, because giving autonomy support, as well as receiving it, has been found to lead to need fulfillment, relationship quality, and psychological well-being [48, 52].

Participants' feelings of being able to be true to themselves and not feeling pressured to be someone else also indicate a good relationship quality within the care farm context. This is in accordance with La Guardia et al. [53], who found that when a person felt autonomous in a relationship, they felt this freedom to be true to themselves, as well feeling greater attachment, security, and more relationship satisfaction. Patrick et al. [51] also found that need fulfillment in relationships was associated with greater individual well-being, like higher self-esteem, more positive affect, vitality, more secure



attachments to others, and better relationship quality. Emotional reliance on others is therefore brought about by autonomy support [53, 54], as people feel most related to those who support their autonomy [47].

#### 4.3. *Guidance and positive feedback*

However, autonomous motivation is also facilitated by providing opportunities for choice and by encouraging self-initiation [39, 41, 42, 48]. Several participants felt that the farmer or manager encouraged them to try out new activities and to find solutions on their own. SDT has found this type of involvement, where people are included in solving problems, to be autonomy supportive [49]. In addition, the experience of receiving guidance and positive feedback was important for participants. This type of responsiveness [39, 41, 48], getting positive feedback and receiving factual, non-judgmental feedback about problems [46], supports the need for competence [39].

#### 4.4. *Nature and animals*

In our study, the experience of nature and working with animals seemed to be very important for several of the participants. Interestingly, SDT literature suggests that nature experiences foster autonomous motivation [55], an effect mediated by the experience of autonomy and relatedness [55]. Overall, nature seems to represent an alternative to a stressful everyday life for many of the participants, and also to facilitate a sense of inner peace. This is in accordance with research on SDT, which describes this break from everyday stress as an opportunity to follow interests at the same time as pressure and social expectations are reduced [56]. Autonomous motivation is therefore promoted by a better understanding of personal interests, values, and needs [56]. In addition, Weinstein et al. [56] also found that nature leads to a closer connection to and focus on others. For participants in this study, this seems to be especially true regarding working with animals, as taking care of someone or something else leads to greater responsibility in work tasks.

#### 4.5. *Reflections on personal functioning and the future*

Contexts that facilitate autonomy lead to autonomous motivation and have persistently been related to better psychological health [39], self-esteem, and well-being, in addition to the experience of meaningfulness [41,

50], flow [57], and daily well-being [58]. In this study, participants' thoughts about their personal functioning broadly reflected behavioral and psychological outcomes related to need fulfillment and autonomy support in SDT literature. Enhanced mood, more positive thinking, and more positive affect are all experiences that constitute key aspects of psychological well-being, which has been repeatedly associated with need fulfillment and autonomy support [59]. In addition to feeling better, participants also described increased psychological flexibility and vitality. Feelings of being more capable of tackling difficulties and finding solutions to problems, as well as experiencing a replenishment of psychological energy [58–60], underline the positive impact well-being has on psychological health [31].

Last, narratives of newfound motivation towards moving on in life and also of resuming ordinary work were recurrent. Research has found need fulfillment to be positively associated with engagement in self-motivated and autonomous behaviors [60, 61]. This desire to pursue interests or reach for personally important goals in life [43] was often characterized as a change that had come about as a result of participating in the green work intervention, and it therefore fit well with the overall finding that participants seem to experience the green work care farm as an autonomy-supportive environment that can foster need fulfillment, autonomous motivation, and well-being for the participants.

## 5. Discussion

The results suggest that the experience of being understood, acknowledged, and guided within a structured and flexible work setting indicate that participants experienced a high degree of autonomy support and need fulfillment within the care farm context. More, the aspirations for returning to work and personal development described by participants support this notion. The main findings will be further discussed in relation to factors outlined by the existing research on care farms. These factors include doing meaningful work in an everyday setting, partaking in the social community on the farm, and experiencing nature and working with animals. Last, participants' reflections on personal functioning and the future will be considered in relation to earlier behavioral and psychological outcomes related to care farm programs in the literature. The discussion will also focus on the practical implications of this new insight.

### 5.1. *Meaningful work in an everyday setting*

The possibility to work in an everyday setting [18] and to have a structure to life [20] has been recognized as important to clients on care farms. These findings were supported by the current study. As described above, SDT recognizes such a structure as absolutely necessary for an internalization process to occur [39, 41]. Therefore, to stimulate the internalization of work as something important and valuable to the self, a clear structure to the work on the farm should be present.

In addition to working in an everyday, structured setting, the literature recognizes the presence of useful and meaningful work activities on care farms as a success criteria [18–20]. However, from an SDT perspective, experiencing meaningfulness, rather than being a success criteria itself, is a reflection of being in a highly autonomy-supportive context that fosters need satisfaction and successful integration [50]. Therefore, trying to find activities that are more meaningful than others is futile, as meaningfulness is most likely stimulated by the diversity and flexibility of the farm context, which offers choice and challenges for different skill levels. This represented an important factor in this study and has been described as an important facilitator for autonomous motivation in the literature [47]. The possibility to tailor the intervention to each client's personal needs and abilities therefore, seems to be a key element of Care farms [18, 20].

### 5.2. *The social community on the farm*

The social community on the farm has consistently been described as one of the most important factors of the care farm context for clients. This typically includes a close relationship with the farmer [18, 20], something that was shown to be true in this study. The experience of receiving understanding and acknowledgement, as well as guidance and positive feedback, from the farmer was shown to be at the core of the client–farmer relationship in our study. According to SDT, this type of social support, as described by social support theory [21], is one of the main elements of autonomy support, which is the most important contextual factor facilitating autonomous motivation [39, 41, 42, 48, 49].

In addition, having a sense of belonging in a group [16, 20] also seems to be important for patients on care farms. According to Baumeister [24], this reflects a basic biological need to belong [21]. Elings & Hassink [19] also point to the interesting finding that mental well-being could result from giving acceptance and

respect to others. This enjoyment of helping other patients on the farm was also apparent in our results. From an SDT perspective, giving autonomy support will contribute to well-being, as it leads to need fulfillment, high relationship quality, and psychological well-being [48, 52].

Last, participants' willingness to turn to the farmer/manager and other patients on the farm for emotional support [53, 54], as well as the feeling of being free to be themselves rather than feeling pressured to act in a particular way, reflect a high degree of need satisfaction and autonomy support to be present within the social relationships at the care farm. The theoretical application of SDT therefore offers a clear insight into how autonomy-supportive relationships develop on the farm and into why they hold a unique position for the clients. A focus on close, understanding relationships that provide positive feedback, which stimulates clients to manage activities and find solutions on their own, should be encouraged. In addition, having clients work together in groups in which they have the opportunity to support each other is also positive.

### 5.3. *Nature and animals*

The value of nature and animals has been consistently proven in the literature on care farms [16, 19, 20] and was also recognized in this study. Work in nature was typically described as giving a feeling of freedom and calmness, while work with animals was described as providing someone to turn to as well as contributing to a higher personal involvement with and responsibility for the work tasks. These experiences therefore reflect a high degree of need fulfillment, which leads to autonomous motivation. This fits well with other findings that nature generates immediate mental health benefits [25]. This important function of nature and animals, creating engagement and well-being, therefore encourages the provision of activities and work outdoors and involving animals within the green work farm context.

### 5.4. *Outcomes of working on care farms*

The literature on care farms indicates a variety of benefits for clients, reaching from psychological and physical health to a positive development of social skills [16, 19, 26–29]. Supporting the literature, participants in this study also experienced behavioral and psychological benefits from being on the farm. These experience would, from an SDT perspective, be a result

of being in contexts that facilitate autonomous motivation, which has been consistently related to better psychological health [39, 41, 50, 57, 58]. The function of psychological well-being is also illustrated by participants' feeling more capable of tackling difficulties and finding solutions to problems [31, 58–60]. Many participants also expressed a desire to move on in life, pursuing interests and resuming ordinary work. This wish to achieve personally important goals has been linked to autonomous motivation [43]. Participants' newfound motivation therefore fit well with the overall findings that participants seem to experience a high degree of autonomy support within the green work care farm contexts.

Last, Elings & Hassink's [19] findings that clients had difficulties formulating concrete future plans also seemed to be a concern for many of the participants in our study. The autonomy-supportive context of the care farm may therefore contribute to psychological well-being, as well an internalization of the value of work. However, even though these experiences may be essential, clients still have an urgent need for concrete, goal-oriented plans for a successful return to work.

### 5.5. *The value of work for people with mental health problems*

The positive impact green work on care farms has on people with mental health problems fits closely with the growing awareness of the effect of work in promoting mental health and hindering mental health problems [1, 5, 9]. Currently, mental health problems constitute one of the leading causes of disease and disability worldwide [1] and represent a leading cause for withdrawal from the workforce, especially for young people [2]. In addition, the fact that psychological health deteriorates as a result of being out of work demonstrates the urgent need to have available work rehabilitation programs for people with mental health problems. This would both be cost effective for society at large and prevent human suffering [4].

### 5.6. *Implications*

This study underlines the use of SDT as a way to understand clients' subjective experiences of work rehabilitation on care farms. In particular, SDT explains underlying mechanisms and recognizes important social-contextual factors contributing to autonomous motivation and optimal human functioning. Understanding these mechanisms within the green work

context is useful, as it provides a sound basis for making predictions about how various social forces and interpersonal environments can be health promoting and positive for the return to work process. This research is therefore both useful and empowering for professionals within the field of work rehabilitation, as it can guide the development and design of optimal social environments for clients.

### 5.7. *Strengths and limitations*

The recruitment of participants with the help of the farmer may well mean that the most satisfied participants on the farm were invited to take part in this study. This could lead to a biased sample with more positive attitudes towards the intervention than normal. On the other hand, the practice of having multiple researchers coding the material simultaneously was a strength. This ensued that the main themes reflected participants' experiences, and it generated a more balanced interpretation of the data at hand. Further, the application of SDT was constructive and contributed to a deeper understanding of the psychological mechanisms underpinning the individual experiences of participating in green work on care farms. Therefore, at the same time as the individual subjective experience is maintained, results are applicable beyond the individual experiences here expressed, making it relevant to a broad field of interventions aiming at moving people in a healthy direction.

## 6. **Conclusion**

Green work on care farms represents a type of prevocational training program for people with mental health problems. These programs utilize the positive value of work for psychological health, at the same time as they can protect people from the many negative effects related to being out of work. The use of an SDT perspective offers a deeper understanding of the conditions and underlying mechanisms that facilitate autonomous motivation and well-being. These conditions are important for the return to work process for clients participating in green work on care farms. All the main themes that emerged in this qualitative study indicated a high degree of autonomy support and need satisfaction within the care farm context. In addition, the participants' own experiences of newfound motivation towards working and better functioning also support the notion that the farm context facilitates autonomous

motivation; as such, motivation typically would lead to psychological well-being and a stronger internalization of the value of work. This research therefore builds on and extends the current literature on care farming. At the same time, it also benefits professionals with the intention of creating contexts designed to move individuals towards positive engagement and functionality.

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Norwegian University  
of Life Sciences

Postboks 5003  
NO-1432 Ås, Norway  
+47 67 23 00 00  
[www.nmbu.no](http://www.nmbu.no)