Introduction
Chapter 1. Introduction

I spend less time these days focusing on the frequency or intensity of [patients’] specific symptoms and more time looking at their overall quality of life. In brief, I have prioritized “recovery-oriented outcomes” (...) as follows: Do they have “a place called home, a decent job and a date on Saturday night”? (Flaum, 2010)

Michael Flaum, M.D., Director of Iowa Consortium for Mental Health

The statement above, taken from a recent editorial published in the American Journal of Psychiatry, is illustrative of the increased focus on recovery within mental health care (Cross Government Strategy: Mental Health Division, 2009; GGZ Nederland, 2009a; Lapsley, Nikora, & Black, 2002; The President’s New Freedom Commission on Mental Health, 2003). In mental health care, strategic efforts to align services to the recovery concept are relatively recent, despite long term interest in recovery itself. Whether or not recovery is possible, for whom and under which circumstances, are issues that have been long debated, and only partially answered. In this thesis, I attempt to further the understanding of recovery of people with mental disorders, based on the study of care farms.

Promises and challenges in mental health care

Over the past two centuries, the debate on whether or not people with mental disorders can recover has been subject to many different interpretations which have shaped the development, organization and provision of mental health care services. Historically, mental disorders were viewed as life-long conditions with downward trajectories and no prospect of recovery. Those with mental ill health were removed from their families and placed in state mental hospitals (asylums) in remote areas where they spent the rest of their lives. Built to separate the sane from the insane (Ravelli, 2006), the mental asylum and its green spaces represented symbols of exclusion, of “spatially separating individuals from the community” (Park & Radford, 1997). The model of mental asylums was gradually abandoned due to two major events: the development of psychoactive drugs in the 1950s (Healy, 2003) which made possible new approaches to the treatment of mental disorders, and the increasing criticism of the inhumane treatment of inmates in asylums (Ravelli, 2006) which eventually culminated
with the deinstitutionalization movement. From 1970s onwards, mental health care reforms were introduced across the Western world: hospital admissions were reduced, admission periods became shorter and residential patients were transferred to newly developed services in the community (Priebe et al., 2005; Schene & Faber, 2001). However, the deinstitutionalization movement was also criticised on the grounds that “chronically mentally ill people may be discharged into poor and deprived areas of cities where they receive few services and where the community is un receptive, uncaring and resistant” (Pattison & Armitage, 1986). Moreover, the overall understanding that people with mental disorders remained chronically ill was unchanged. This view was challenged by the Consumer/Survivor Movement which campaigned for holistic services addressing the multitude of life domains affected by mental health disorders. The 1980s became a “decade of recovery as mental health care providers were introduced to the controversial vision that people with mental disorders could develop “new meaning and purpose in one’s life as one grows beyond the catastrophic effects of mental illness” (Anthony, 1993).

In the 1980s and 1990s, mental health care services increasingly focused on enabling people with mental disorders to resume meaningful roles in society. Psychiatric rehabilitation was developed in order to assist people with mental disorders in achieving the skills needed for an independent life in the community. This involved a range of psycho-social interventions, including adequate housing, targeted education, training in social and living skills and paid employment (Rössler, 2006). In this period, different rehabilitation projects were started, including walk-in centres, day centres, residential care facilities, as well as consumer-run services (Schene & Faber, 2001), which in areas of high-level resources are now commonly provided (Tansella & Thornicroft, 2013). Currently, the concept of mental health recovery is widely accepted but the specific implications for practice, as well as the guidelines for developing recovery-oriented services, were still largely absent (Farkas, Gagne, Anthony, & Chamberlin, 2005; Leamy, Bird, Le Boutillier, Williams, & Slade, 2011).

Advancing the understanding of how recovery can be facilitated is increasingly relevant, given the considerable burden of disease on people with mental disorders, as well as on mental health care systems and services. As a group, mental disorders are highly prevalent, with 40-50% of the general population being diagnosed with a mental disorder during their lifetime (Bijl, Ravelli, & van Zessen, 1998; Kessler et al., 1994). Among people with common mental disorders (such as depressive or anxiety disorders), a large number seem not to respond to medication (Kirsch et al., 2008; Turner, Matthews, Linardatos, Tell, & Rosenthal, 2008) or to psychotherapy (Cuijpers, van Straten, Bohlmeijer, Hollon, & Andersson, 2010). Among people with severe mental disorders (such as schizophrenia), mental (Kingsep, Nathan, & Castle, 2003) and physical (Leucht, Burkard, Henderson, Maj, & Sartorius, 2007) co-morbidity,
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as well as impaired functioning (Morimoto, Matsuyama, Ichihara-Takeda, Murakami, & Ikeda, 2012), remain a problem. Mental disorders can have consequences for a range of life domains. People with mental disorders report low quality of life, poor educational achievement, and impaired social and occupational functioning (Alonso, Angermeyer, et al., 2004; Craig, 2013; Tenorio-Martinez, del Carmen Lara-Munoz, & Elena Medina-Mora, 2009). For example, up to 80-90% of people with serious mental disorders are unemployed, and 50% lack daily activities (Harnois & Gabriel, 2000; van Weeghel, 2010). High rates of unemployment among people with mental disorders are partly an expression of societal stigma which remains a persistent problem, despite a broad range of interventions targeting the general population or specific groups (Corrigan & Shapiro, 2010; Schomerus et al., 2012). Social exclusion forces people with mental disorders to turn to health and social services (Aschbrenner, Grabowski, Cai, Bartels, & Mor, 2011; Davis, Fulginiti, Kriegel, & Brekke, 2012). As a result, admissions to state mental hospitals in the USA showed an upward trend during 2002-2005 for the first time since the 1970s (Manderscheid, Atay, & Crider, 2009). Moreover, US nursing homes are increasingly admitting people with mental disorders aged 18 to 64, despite the fact that these institutions are poorly prepared to serve the complex needs of their new user group (Aschbrenner et al., 2011). Similar trends have been observed in the Netherlands where the number of users of residential care facilities for the mentally ill increased more than twice during the 2003-2009 period, with a 30% increase in the proportion of users who remain more than 1 year (GGZ Nederland, 2006, 2010).

The partial success of current therapeutic approaches in returning people with mental disorders to society has also had an impact on mental health professionals who frequently report feeling overburdened by the complex needs of their patients (Edwards, Hannigan, Fothergill, & Burnard, 2002; Garske, 1992; Kristiansen, Hellzen, & Asplund, 2010; Meldrum & Yellowlees, 2000) and excessive job demands (Evans et al., 2006; Morse, Salyers, Rollins, Monroe-Devita, & Pfahler, 2012).

In response to the complex challenges in the field of mental health care, new interventions that engage other sectors of society are developed and studied. For example, current approaches to promote social engagement and to diminish stigma associated with medical conditions (such as leprosy) use a combination of interventions from health care (such as counselling and rehabilitation) and the financial sector (for example, microcredit to stimulate income-generating activities) (Royal Tropical Institute, 2007). In line with these approaches, this thesis proposes to take a closer look at the contribution the agricultural sector can make to facilitate the recovery of people with mental disorders. This approach is currently practiced on the so-called care farms.
Care farms: A development at the interface between agriculture and care

Care farming consists of “the use of commercial farms and agricultural landscapes as a base for promoting mental and physical health, through normal farming activity” (Hine, Peacock, & Pretty, 2008). Care farms represent a link between agriculture and aspects of traditional health care (Haubenhofer, Elings, Hassink, & Hine, 2010). Practiced in countries throughout Europe (for example France, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Slovenia) and the USA (Hassink & Van Dijk, 2006), care farming is described in the literature in the context of green care, together with other interventions such as gardening, landscape or nature conservation, animal husbandry and exercise in natural environments (Haubenhofer et al., 2010).

Green care represents a spectrum of health-promoting interventions that use both biotic (relating to living organisms) and abiotic (relating to non-living, environmental factors, such as landscape and the weather) elements of nature to maintain or promote a social, physical, mental, or educational well-being (Hine et al., 2008; Sempik, 2007; Sempik, Aldridge, & Becker, 2005). Green care interventions have only recently become the focus of academic interest (Haubenhofer et al., 2010), but many of them have a long-standing tradition in mental health care. For example, in the 1950s, various horticultural therapy interventions were used for people with disabilities (Burlingame, 1958; York, 1955). Before 1950s, at a time when people with mental disorders were isolated in asylums, labour was viewed as healing, and involvement of residential patients in agricultural work on farms or gardens of the asylum was a common therapeutic practice (Frumkin, 2001; Hickman, 2005). Once psychiatric treatments became available, asylums were gradually dismantled, and the surrounding lands were sold (Ravelli, 2006). However, the use of farms and gardens in therapeutic practice was not completely abandoned. Farms and gardens continued to be used in mental health care, albeit to a limited extent, as an addition to the developing psychiatric treatments and rehabilitation interventions (Frumkin, 2001). With the upsurge of psychiatric rehabilitation interventions in the 1990s, farms were considered to be sheltered workshops situated in real-life settings, although they were exceptions to the developing psychiatric rehabilitation services (Corbiere & Lecomte, 2009). This situation changed dramatically after 2000, when many private farms became increasingly involved in providing services for people with (mental) disabilities (Di Iacovo & O’Connor, 2009), a development that was documented as part of a broader green care phenomenon that emerged in several Western European countries.

Across Europe, farms that combine agriculture and services for people with disabilities are known as care farms (Hassink, Zwartbol, Agricola, Elings, & Thissen, 2007), green care farms (Vik & Farstad, 2009) or social farms (Di Iacovo & O’Connor, 2009). The
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Varying terminology indicates that the concept includes diverse approaches and, in addition, there are also characteristic national approaches. For example, in Germany care farms are fully integrated into health care services and are not able to operate on any other terms (Haubenhofer et al., 2010). In the Netherlands, most care farms are private farms providing services to individual users or to users referred by health care organizations (Hassink et al., 2007). In Italy, care farms are generally oriented towards providing employment to people with disabilities, including mental disabilities (Di Iacovo & O’Connor, 2009).

Figure 1.1. Number of care farms in a selection of European countries

Among the European countries, the Netherlands hosts the largest number of care farms (Figure 1.1). Since the first official records in 1998, the number of care farms has increased each year to more than 1,000 care farms in 2009 (Figure 1.2) (Federatie Landbouw en Zorg, 2012). These care farms are generally family-owned, with well-established national and regional networks (Di Iacovo & O’Connor, 2009). They are complemented by strong intermediary organizations which mediate contact between care farms and health and social care organizations (Hassink, Grin, & Hulsink, 2010). Although many of the care farms in the Netherlands still consider agricultural production as their core activity (Di Iacovo & O’Connor, 2009), links with health care services are strong. Hassink et al showed that nearly one third of all care farms collaborated with health care services, and that people with mental disorders (including intellectual retardation, autism, dementia, addiction and burnout) accounted for approximately two-thirds of care farm users in 2005 (Hassink et al., 2007).

However, little is known about the effects of farm-based care (see next chapter). This knowledge gap has been denounced by several stakeholders. For example, practitioners, researchers and health care professionals have expressed a need for systematic investigation of the health effects of green care interventions, emphasizing that studies on this topic need to be high quality in terms of research standards but also need to take into account the complexity of green care interventions in practice (Sempik, 2007; Sempik, Hine, & Wilcox, 2010). Similar calls for scientific evidence underpinning the relevance of care farms for health care have been issued by policy makers, such as the Health Council of the Netherlands and the Dutch Advisory Council for Research on Spatial Planning, Nature and the Environment. These bodies brought forward the argument that clarity regarding the potential role of care farms would help shape the development of services that match the demands of clients and are cost effective (Gezondheidsraad en RMNO, 2004).

Responding calls for more clarity regarding the relevance of care farms, and taking into account the complex challenges in the field of mental health, the current thesis was guided by the following research question:

“*In what way, and to what extent, can care farms play a role in mental health recovery and rehabilitation?*”

The knowledge and concepts on which my thesis builds are discussed in the following chapter.

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2 Source: Federation for Agriculture and Care (In Dutch: Federatie Landbouw en Zorg) (www.landbouwzorg.nl) (Federatie Landbouw en Zorg, 2012). In 1999 and in 2002, no surveys were carried out, so data were imputed as the mean values of the previous and following years.

3 In Dutch: Gezondheids Raad en Raad voor ruimtelijk, milieu- en natuuronderzoek
Chapter 2. Theoretical concepts

Recovery is not a gift from doctors but the responsibility of us all ... We must become confident in our own abilities to change our lives; we must give up being reliant on others doing everything for us. We need to start doing these things for ourselves. We must have the confidence to give up being ill so that we can start becoming recovered. (Coleman, 1999)

The concept of recovery – the notion that the majority of people can overcome the consequences of mental disorders and live meaningful lives in community (Farkas et al., 2005) – is widely accepted in the field of mental health. However, it can also create confusion, due to the different ways in which various stakeholders view this concept (Jacobson & Greenley, 2001). For example, recovery can be described in relation to people with mental disorders, in two different ways: they can recover from a mental disorder and thus return to a (nearly) normal state, or they can recover despite persisting limitations, and develop a new way of life that builds on the experience of mental disorder (Slade & Davidson, 2011). These are two different perspectives on recovery, as proposed by outcomes research and by personal narratives respectively. Furthermore, the concept of recovery can also be described from the perspective of health care system (services, providers). Again, two perspectives have been described: the system reform / transformation and service provision (Amering & Schmolke, 2009; Jacobson & Greenley, 2001; Slade & Davidson, 2011). The system reform perspective relates to the development and organization of mental health care services, and the allocation of resources to effectively contribute to the recovery of people with mental disorders, whereas the service provision perspective refers to the implementation of mental health services and to issues surrounding the role of mental health professionals.

These four perspectives (outcomes research, personal narratives, system reform / transformation, and service provision) emerged at different times in the relatively short history of psychiatry. Their main characteristics, as well as the development in time, are summarized in the following paragraphs, building on the historical insights presented in the previous section.
Chapter 2

Mental health recovery and rehabilitation: A brief history

Recovery: Perspectives from outcomes research

The concept of recovery originated from the 12-step movement of the addiction community that emerged in the 1930s (Sowers, 2005). It was introduced to the study of severe mental disorders in the 1980s by Harding et al, who found that more than half of the people with schizophrenia experienced amelioration of symptoms, as well as normalization of functioning (Harding, Brooks, Ashikaga, Strauss, & Breier, 1987). This study demonstrated that positive outcomes are possible even for disorders traditionally associated with a deteriorating course. Similar results were found by other studies taking an outcomes research perspective on recovery. Across studies, recovery from various mental disorders was conceptualized as the amelioration of symptoms to a degree that allowed daily functioning within normal levels (Davidson, O’Connell, Tondora, Lawless, & Evans, 2005). In other words, it followed a problem-oriented perspective which focused on the limitations of people with mental disorders and on interventions that could successfully address these problems (as schematically depicted in Figure 2.1.). The operationalization of the recovery concept remained a question of debate, as researchers used definitions that differed in terms of the level of residual symptoms, the existence and length of a stable phase, and the relevant domains of functioning (Faerden, Nesvag, & Marder, 2008). To date, consensus definitions for recovery have been proposed for two disorders (major depressive disorder (Keller, 2003b) and schizophrenia (Faerden et al., 2008)), both recommending the independent assessment of symptoms and functioning because they are largely unrelated. Whether this holds true for other mental disorders, however, remains an open question.

Figure 2.1. The concept of recovery from an outcomes research perspective

Recovery: Perspectives from personal narratives

The narratives of people with mental disorders were published for the first time in the 1980s (e.g., see Deegan (Deegan, 1988)), roughly simultaneous with the study by Harding and colleagues. Both Harding and Deegan introduced a positive view on the course of mental disorders and possible recovery but they differed fundamentally in their understanding of what recovery meant. Outcomes research (initiated by Harding) focused on recovery from mental disorders, thus adopting a problem-oriented perspective, while personal narratives (initiated by Deegan) described recovery within and beyond the mental disorder and adopted a person-
oriented perspective. Common throughout the body of literature from the person-oriented perspective is the idea that people with mental disorders experience recovery as a process, a personal journey in which they adapt to a new status quo and learn to find personal meaning, despite the limitations imposed by the mental disorder. This process was later summarized in five stages:

1. **Moratorium**: denial of the mental diagnosis, confusion, helplessness, withdrawal from society;
2. **Awareness**: hope for better life, awareness of a possible identity beyond that of a “sick person”;
3. **Preparation**: steps towards recovery, focus on one’s own values, strengths and weaknesses, and connections with peers;
4. **Rebuilding**: actively pursuing a positive identity, establishing goals and taking responsibility;
5. **Growth**: living beyond disability and being resilient in the face of setbacks (Andresen, Oades, & Caputi, 2003), or aiming for community integration and successful occupational performance (Leamy et al., 2011).

The literature on personal narratives of people with mental disorders also articulates the factors that seem to facilitate the process of recovery, such as: rebuilding/redefining a positive sense of identity, undertaking roles that are valued by society, gaining control and assuming personal responsibility in steering one’s recovery, building up the determination to continue despite adversity, and connecting with peers for mutual support (Davidson et al., 2005; Leamy et al., 2011; Liberman, 2008; Onken, Craig, Ridgway, Ralph, & Cook, 2007; Slade, Amering, & Oades, 2008).

**Rehabilitation: Perspectives from system reform / transformation**

The concept of rehabilitation in mental health emerged in the 1990s, at a time when mental health care service providers and policy makers became increasingly conversant with the concept of recovery as used by mental health researchers and activists. This was directly reflected in the reform efforts at that time: mental health care systems in Western countries gradually established rehabilitation services that aimed to improve and maintain functioning across all domains of life (such as work, housing, recreation, relationships) (Rössler, 2006). The vision was to create strategies and programs that were built on the concept of recovery (Jacobson & Curtis, 2000) and fostered empowerment (Dickerson, 1998), and to change existing insurance policies and services so that they would accommodate for the needs of
people with mental disorders (Fisher, 1994). These changes represented a *system reform* perspective on recovery and rehabilitation. Current changes within the mental health care systems no longer have the breadth of the reforms undertaken in the 1990s. Rather, issues revolve around the most cost-effective ways of organizing and delivering services. For example, policy makers and managers have to deal with questions regarding which services to maintain “in-house”, despite additional costs (i.e., “in sourcing”), and which to renounce and purchase from third parties (i.e., “out-sourcing”) (Young, 2008). Therefore, a more adequate description for this perspective in the current economic climate would be that of *system transformations*.

**Rehabilitation: Perspectives from service provision**

The current focus in rehabilitation has shifted towards the operationalization of the recovery concept, leading to the *service provision* perspective. Guidelines published from the year 2000 onwards aimed to improve the quality and management of services (Sowers, 2005) by incorporating key values and components of recovery, derived from the literature on personal narratives, into the delivery of mental health care services (Farkas et al., 2005). Guidelines included recommendations on how to take into account users’ preferences when designing service locations but, more importantly, redefined the roles and responsibilities of rehabilitation professionals in recovery. Mental health care providers (including rehabilitation professionals) were expected to adopt facilitative and enhancing roles, rather than directive or paternalistic ones (Sowers, 2005) and to reach beyond the organizational realm into the environments in which people with mental disorders lived (Rössler, 2006), in order to promote their equal citizenship and to support their (re)integration into society (Le Boutillier et al., 2011; Slade, 2012; Ware, Hopper, Tugenberg, Dickey, & Fisher, 2007).

But who are the people who could potentially benefit from rehabilitation services? This question is still challenging mental health researchers and practitioners, and some have argued that a better formulation would be “who does not need rehabilitation?” (Javed, 2012). The publication of the article “*Psychiatric rehabilitation today: an overview*” (Rössler, 2006) revealed that there is still much debate regarding this topic. While the author described psychiatric rehabilitation as an approach reserved for people with severe mental disorders, opponents argued that people with common mental disorders (such as depressive and anxiety disorders) could also benefit from interventions aiming to improve functioning (Cancro, 2006; Liberman, 2006). Whether or not this might be true was, however, unclear, as research on the relationship between symptom remission and functioning in common mental disorders is relatively scarce. For depressive disorder, recent studies have indicated that, although reduction in the severity of symptoms are accompanied by improvements in functioning,
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functional impairments may persist (Verboom, Ormel, Nolen, Penninx, & Sijtsema, 2012). This suggests that psychosocial interventions targeting functioning are relevant for at least a proportion of people with depressive disorder. For anxiety disorders, however, similar studies are largely missing. This means that the question of whether or not psychiatric rehabilitation should be recommended on basis of diagnosis, or on basis of actual levels of functioning, remained largely unanswered.

Combining the perspectives on mental health recovery and rehabilitation

The summary presented above followed the line of historical developments related to the emergence of the four perspectives on recovery and rehabilitation. In the following chapters, however, the four perspectives are listed in line with the actors they mostly concern (also depicted in Table 2.1):

a. people with mental disorders, conveying the perspectives of outcomes research and of personal narratives;

b. mental health care professionals and their role in recovery, conveying the service provision perspective;

c. mental health care organizations, conveying the service transformation perspective on recovery.

Table 2.1.
The concept of recovery, deconstructed to address four perspectives of three actors

<table>
<thead>
<tr>
<th>Actors</th>
<th>Recovery perspective</th>
<th>Main characteristics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service users</td>
<td>Outcomes research</td>
<td>Problem-oriented: “recovery from mental disorders”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Symptom remission and normalized functioning as outcomes</td>
</tr>
<tr>
<td></td>
<td>Personal narratives</td>
<td>Person-oriented: “recovery despite mental disorders”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Recovery as a process</td>
</tr>
<tr>
<td>Professionals</td>
<td>Service provision</td>
<td>Active role of rehabilitation professionals in supporting social</td>
</tr>
<tr>
<td></td>
<td></td>
<td>inclusion and equal citizenship of people with mental disorders</td>
</tr>
<tr>
<td>Organizations</td>
<td>System transformation</td>
<td>Development and organization of services in changing economic</td>
</tr>
<tr>
<td></td>
<td></td>
<td>climate</td>
</tr>
</tbody>
</table>

Many challenges remain, such as the high prevalence of mental disorders, the limited response to current therapeutic approaches, the barriers to participation emerging from society (see previous chapter). As new interventions are developed to address these challenges, and to promote mental health recovery, outcomes research will continue to play an important role in assessing their effectiveness and guiding the selection of the most promising approaches. In
practice, however, the implementation of new interventions depends not only on the scientific evidence for their effectiveness, but also on patient needs, professional issues, organizational structures, financial mechanisms, and health care cultures (Drake, Skinner, & Goldman, 2008). In this context, the personal narratives of people with mental disorders are highly important, as they can provide insights into whether new interventions are perceived as helpful in the recovery process, and why. Similarly, exploration of views, perceptions and experiences of mental health care professionals can provide insights into whether and how the new approaches support them in service provision. And finally, research guided by the system transformation perspective is needed to contextualize the new interventions to existing financial mechanisms, organizational structures and health care cultures.

In the light of these arguments, this thesis encompasses all four perspectives on recovery and rehabilitation, and incorporates methodologies related to outcomes research, personal narratives, service provision and system transformation to explore the relationship between care farms, on the one hand, and mental health recovery and rehabilitation, on the other hand. It aspires to contribute to the existing body of literature on care farms, taking an integrated view that places care farms within the context of current trends and challenges in the provision of mental health care.

**Care farms for people with mental disorders**

The English language literature on care farms is relatively recent and, to my best knowledge, consists of 26 articles (reference date: September 1st, 2012). These are presented in Table 2.2 and briefly described below.

The first study published in an English-language journal appeared in 2006 (Schols & van der Schriek-van Meel, 2006), and introduced “a new type of day care [for demented patients in the Netherlands], offered on a small dairy farm setting”. Based on a small observational study comparing patients on a care farm with patients attending a regular nursing home, the article described promising first results: patients on care farms showed fewer behavioural problems, used fewer drugs and were more actively involved in normal daily activities, compared to patients on the nursing home (Schols & van der Schriek-van Meel, 2006). The study was followed by a larger observational research on effects of farm-based day care for elderly with dementia, conducted in the Netherlands, which resulted in four articles (de Bruin et al., 2009; de Bruin, Oosting, Tobi, et al., 2010; de Bruin et al., 2012; de Bruin, Oosting, van der Zijpp, Enders-Slegers, & Schols, 2010).
Studies on care farms for people with mental disorders were conducted in the Netherlands, United Kingdom and Norway. In the Netherlands and United Kingdom, qualitative research with users of farm services proposed that care farm users appreciate the ordinary nature of farm work, the community life and the presence of farmers and their families (Elings & Hassink, 2008; Hassink, Elings, Zweekhorst, van den Nieuwenhuizen, & Smit, 2010; Hine et al., 2008). In Norway, intervention studies conducted on farms showed that work with farm animals and gardening activities might play a role in decreasing the severity of depressive symptoms (Gonzalez, Hartig, Patil, Martinsen, & Kirkevold, 2009, 2010; Pedersen, Martinsen, Berget, & Braastad, 2012), in increasing self-efficacy (Berget, B., O. Ekeberg, & B. O. Braastad, 2008a; Pedersen, Martinsen, et al., 2012), in developing coping skills and in improving work abilities (Berget et al., 2008a; Berget, Skarsaune, Ekeberg, & Braastad, 2007; Pedersen, Martinsen, et al., 2012).

Benefits of care farming, as perceived by mental health care professionals, were described in three qualitative studies conducted in Norway and in the Netherlands. These showed that half of the professionals interviewed expected that farm work and contact with farm animals would, to some extent, improve social functioning (Berget, B., O. Ekeberg, & B. O. Braastad, 2008b; Berget & Grepperud, 2011) and coping, confidence and physical ability, and decrease anxiety and depressive symptoms (Berget & Grepperud, 2011). Furthermore, professionals with experience of the care farm environment viewed the real-life setting of farms, and the emphasis on users’ abilities, instead of on limitations, as valuable additions to regular mental health care services (Hassink, Grin, et al., 2010).

And finally, a small number of studies provided detailed description of the how the care farming movement developed. In addition to analysing the movement, in terms of number and type of care farms and users, these articles also provided an overview of the types of relationships with health care services (Hassink et al., 2007; Haubenhofer et al., 2010; Hine et al., 2008), or described how challenges in the agricultural sector or in other sectors of society (such as markets and governance (Vik & Farstad, 2009), or the emergence of multifunctional agriculture (Meerburg, Korevaar, Haubenhofer, Blom-Zandstra, & Van Keulen, 2009)) influenced the developments in and adoption of care farming (Schuessler, Siegmund-Schultze, van Elsen, & Zarate, 2011).
Table 2.2.
Overview of articles on care farms in the English language literature (n=26)

<table>
<thead>
<tr>
<th>ID. Title (Reference)</th>
<th>Country / Year</th>
<th>Research topic</th>
<th>Study population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Humans with mental disorders working with farm animals: a behavioural study (Berget et al., 2007)</td>
<td>N/2007</td>
<td>Care farming</td>
<td>Adults¹</td>
</tr>
<tr>
<td>2. 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 (Berget et al., 2008a)</td>
<td>N/2008</td>
<td>User benefits</td>
<td>✓</td>
</tr>
<tr>
<td>3. Attitudes to animal-assisted therapy with farm animals among health staff and farmers (Berget et al., 2008b)</td>
<td>N/2008</td>
<td>Views of MHP</td>
<td>✓</td>
</tr>
<tr>
<td>5. Animal-assisted therapy with farm animals for persons with psychiatric disorders (Berget &amp; Braastad, 2011)</td>
<td>N/2011</td>
<td></td>
<td>✓ ⚫</td>
</tr>
<tr>
<td>6. Animal-assisted therapy with farm animals for persons with psychiatric disorders: effects on anxiety and depression, a randomized controlled trial (Berget, Ekeberg, Pedersen, &amp; Braastad, 2011)</td>
<td>N/2011</td>
<td></td>
<td>✓ ⚫</td>
</tr>
<tr>
<td>7. Green care farms promote activity among elderly people with dementia (de Bruin et al., 2009)</td>
<td>NL/2009</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>8. Day care at green care farms: a novel way to stimulate dietary intake of community-dwelling older people with dementia (de Bruin, Oosting, Tobi, et al., 2010)</td>
<td>NL/2010</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>9. The concept of green care farms for older people with dementia: an integrative framework (de Bruin, Oosting, van der Zijpp, et al., 2010)</td>
<td>NL/2010</td>
<td></td>
<td>✓ ⚫</td>
</tr>
<tr>
<td>10. Comparing day care at green care farms and at regular day care facilities (de Bruin et al., 2012)</td>
<td>NL/2012</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>11. Green care farms, a safe community between illness or addiction and the wider society (Elings &amp; Hassink, 2008)</td>
<td>NL/2008</td>
<td></td>
<td>✓</td>
</tr>
<tr>
<td>12. Therapeutic horticulture in clinical depression. A prospective study (Gonzalez et al., 2009)</td>
<td>N/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. Therapeutic horticulture in clinical depression. A prospective study of active components (Gonzalez et al., 2010)</td>
<td>N/2010</td>
<td></td>
<td>✓</td>
</tr>
</tbody>
</table>
### Table 2.2.
Overview of articles on care farms in the English language literature (n=26) (continued)

<table>
<thead>
<tr>
<th>ID</th>
<th>Title (Reference)</th>
<th>Country / Year</th>
<th>Research topic</th>
<th>Study population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Care farming</td>
<td>User benefits</td>
</tr>
<tr>
<td>15</td>
<td>A prospective study of group cohesiveness in therapeutic horticulture for clinical depression (Gonzalez, Hartig, Patil, Martinsen, &amp; Kirkevold, 2011b)</td>
<td>N/2011</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>16</td>
<td>Current status and potential of care farms in the Netherlands (Hassink et al., 2007)</td>
<td>NL/2007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Care farms in the Netherlands: attractive empowerment-oriented and strengths-based practices in the community (Hassink, Elings, et al., 2010)</td>
<td>NL/2010</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>The development of green care in western European countries (Haubenhofer et al., 2010)</td>
<td>NL/2010</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Care farming in the U.K.: contexts, benefits and links with therapeutic communities (Hine et al., 2008)</td>
<td>UK/2008</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>The changing role of agriculture in Dutch society (Meerburg et al., 2009)</td>
<td>NL/2009</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>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 (Pedersen, Nordaunet, Martinsen, Berget, &amp; Braastad, 2011)</td>
<td>N/2011</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>Farm animal-assisted intervention for people with clinical depression: a randomized controlled trial (Pedersen, Martinsen, et al., 2012)</td>
<td>N/2012</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Important elements in farm animal-assisted interventions for persons with clinical depression: a qualitative interview study (Pedersen, Ihlebaek, &amp; Kirkevold, 2012)</td>
<td>N/2012</td>
<td>√</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>Impact of support centres for social farming on benefits from livestock in northern Europe (Schuessler et al., 2011)</td>
<td>G/2011</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Green care governance: between market, policy and intersecting social worlds (Vik &amp; Farstad, 2009)</td>
<td>N/2009</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL</td>
<td></td>
<td></td>
<td>6</td>
<td>19</td>
</tr>
</tbody>
</table>

**Notes:**
- MHP = mental health professionals; ¹ = adults with mental disorders; ² = elderly with dementia; ³ = heterogeneous groups.
- Country abbreviations: G = Germany; N = Norway; NL = the Netherlands; U.K. = United Kingdom.
- R = literature reviews; *only original articles were included here - i.e., the literature review (article ID 5) was not considered.*
Chapter 2

The literature on care farms, although limited, indicates that farms might serve as places for recovery for people with mental disorders. However, to date, we know very little about the relevance of care farms for the current models of facilitating recovery. The literature on care farms largely lacks an integrative approach, namely one that would relate them to the mental health care system. This knowledge gap is schematically depicted in Figure 2.2., superimposed on the three types of actors described before (i.e., users, professionals and organizations, represented by the three colour-coded bands) and the two sectors linked by care farms (i.e., mental health care and agriculture, each represented as a column). This visualization presents the focus of the 26 articles on care farms reviewed above, and illustrates the fact that we currently have a better understanding of how care farms fit into a changing agriculture context than their relation with mental health care services.

Figure 2.2. Focus of the English language literature on care farms

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4 Numbers in circles correspond to article IDs, as listed in Table 2.2.
Chapter 3. Research design

Study aim, objectives and research question

The overview of the literature on care farms, summarized in Table 2.2., shows that research on care farms has so far lacked an integrative approach, one that would relate the services offered on care farms to the services provided within the mental health care sector. The aim of this thesis is to fill in this knowledge gap by exploring the relevance of care farms for the recovery and rehabilitation of people with mental disorders.

The main research question that guides the current research is

“In what way, and to what extent, can care farms play a role in mental health recovery and rehabilitation?”

The objectives formulated for the current research address the recovery and rehabilitation perspectives described in the previous sections.

I. To contribute to a better understanding of recovery in common mental disorders;

II. To provide insights into experiences of mental health recovery on care farms;

III. To analyse care farm services and practices from a psychiatric rehabilitation approach.

The thesis consists of five studies divided into three parts, reflecting the three objectives described above. Part 1 focuses on recovery in people with common mental disorders (such as anxiety disorders), and sets the scene for further research on care farms. Parts 2 and 3 constitute the main body of the thesis and present the results of the research conducted on the topic of care farms. Part 2 focuses on mental health recovery and therefore has been undertaken with people with mental health disorders who attend care farm and other rehabilitation services. Part 3 focuses on psychiatric rehabilitation and therefore has been undertaken at the level of service providers (professionals and / or organizations). The current thesis provides an integrated approach to care farm services by combining the different levels and perspectives on mental health recovery and rehabilitation.
Research approach

The current thesis incorporates different perspectives on mental health recovery and rehabilitation. The different perspectives require different research approaches. For example, an outcomes research perspective on recovery demands the use of quantitative methods, whereas the exploration of personal narratives on recovery can best be conducted using qualitative research methods. Furthermore, quantitative and qualitative methods are employed in a complementary manner, providing insights that would not be possible by using only one method. The research in this thesis relies on a combination of quantitative and qualitative research methods, an approach also known as “mixed-methods research” and defined as the process of “collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies” (Creswell & Plano-Clark, 2006).

Figure 3.1. Research approach: use of mixed-methods (quantitative and qualitative) research

Among the five studies that constitute the current thesis, one uses a quantitative approach, two use a qualitative approach, and two combine the qualitative and quantitative approaches (Figure 3.1.). The quantitative data referred to the characteristics of 1556 participants in a longitudinal study on the long-term course and consequences of depressive and anxiety disorders, as well as to the characteristics of 214 care farms. The qualitative data collection, summarized in Table 3.1., took place between 2008 and 2010 and consisted of 125 interviews conducted with users of care farms and rehabilitation services (n=46), service
providers on care farms and rehabilitation services (n=61), and other stakeholders (care farm organizations, research institutes, municipalities, care providers for veterans with mental disorders, anthroposophic care providers, health care insurers, health care agencies) (n=18). Overall, 52 exploratory interviews were conducted. These helped the members of the research team understand the context and particularities of care farm services, and their relations with other stakeholders in mental health care and with communities. The exploratory interviews were also used to invite service users’ and service providers’ reflections on the research questions proposed in this thesis, and to help sharpen the scope of the thesis. Based on the results of the exploratory interviews, an additional number of 73 interviews were conducted and analysed, and are presented in the thesis.

Table 3.1.

<table>
<thead>
<tr>
<th>Participants</th>
<th>Types interviews</th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Exploratory</td>
<td>In-depth</td>
<td></td>
</tr>
<tr>
<td>Service users</td>
<td>20</td>
<td>26</td>
<td>46</td>
</tr>
<tr>
<td>Service providers</td>
<td>12</td>
<td>47</td>
<td>59</td>
</tr>
<tr>
<td>Other stakeholders</td>
<td>20</td>
<td>0</td>
<td>20</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>52</strong></td>
<td><strong>73</strong></td>
<td><strong>125</strong></td>
</tr>
</tbody>
</table>

The rationale for these choices, as well as details regarding the research design for each of the five studies, are presented in the following section.

**Research sub-questions and methods**

The five studies have been guided by one or several research sub-questions, formulated on the basis of their close link to the overall research question and to the three objectives of the thesis, and therefore reflect the different perspectives on recovery and rehabilitation. The research sub questions and methods are presented below.

**Part 1. Setting the scene: Recovery in common mental disorders**

The first study presented in the thesis (Chapter 4) is conducted from an outcomes research perspective and uses a quantitative approach to analyse the relationship between symptom remission and functioning in anxiety disorders. Anxiety disorders are among the five most
burdensome disorders (Jorm, Griffiths, Christensen, & Medway, 2002; Melse, Essink-Bot, Kramers, & Hoeymans, 2000; Saarni et al., 2006; Saarni et al., 2007) due to high prevalence rates (Wittchen & Jacobi, 2005; Wittchen et al., 2011), chronic course (Fehm, Pelissolo, Furmark, & Wittchen, 2005; Goodwin et al., 2005; Keller, 2003a, 2006; Lieb, Becker, & Altamura, 2005; Wittchen & Fehm, 2003; Yonkers, Bruce, Dyck, & Keller, 2003), and consequences of impaired functioning (Acarturk et al., 2009; Batelaan, N. M. et al., 2007; Greenberg et al., 1999; Gustavsson et al., 2011; Leon, Portera, & Weissman, 1995). Under current practice, it is expected that treating symptoms until remission is accomplished allows the majority of patients to resume normal lives. However, it remains unclear whether or not people who reach symptom remission continue to experience functional impairments. For depressive disorder, recent studies have indicated that, although reduction in the severity of symptoms are accompanied by improvements in functioning, functional impairments may persist (Verboom et al., 2012). For anxiety disorders, such insights are not available.

The study of recovery outcomes in people with anxiety disorders is expected to have implications for the research on care farms because it could help shape the scope of services on care farms. At the start of the research presented in this thesis, issues related to the choice of study participants for care farm studies were frequently discussed among researchers, and created much debate about the most appropriate study populations and methods to be used in the field of care farm research. In turn, these issues posed difficulties in communicating research findings to mental health care providers and policy makers, and in bridging the gap between care farms and the mental health care sector (Haubenhofer et al., 2010; ZonMW, 2010).

Against this background, the study aimed to undertake a first step in analysing the relationship between clinical and functional recovery in anxiety disorders, by providing answers to the following research sub-questions:

1. What are the two-year trajectories of total and domain-specific functioning in participants with chronic and remitting anxiety disorders?

2. What factors can best predict functioning in people with anxiety disorders who achieved symptom remission?

Data were derived from the Netherlands Study of Depression and Anxiety (NESDA), an ongoing longitudinal cohort study on the long-term course and consequences of depressive and anxiety disorders (Penninx et al., 2008). The sample consisted of participants with chronic anxiety disorders (n=586), remitting anxiety disorders (n=385) and healthy controls (n=585). Baseline characteristics of participants were described using two-tailed chi square tests for
categorical variables and one-way analysis of variance statistics (ANOVA) for continuous variables. The two-year course trajectories of functioning in participants with chronic anxiety disorders, remitting anxiety disorders and healthy controls, were analysed using Linear Mixed Models (LMM), adjusting for the presence of baseline co-morbid depressive disorders. The magnitude of change in functioning scores was quantified using standardized mean difference (Cohen’s $d$) (Cohen, 1998). Predictors of functioning in participants with remitting anxiety disorders were identified by performing additional LMM analysis. Univariate and multivariate analysis was performed to assess the strength of associations between a large number of socio-demographics, clinical variables and vulnerability variables and functioning. Data analysis was performed using SPSS Statistics 20.0. and Comprehensive Meta Analysis 2.2.

**Part 2. Mental health recovery on care farms**

The second part of the thesis focuses on people with mental disorders and approaches mental health recovery on care farms from two perspectives: outcomes research and personal narratives. Part 2 begins with systematic review of the literature on farm-based interventions for adults with mental disorders (Chapter 5), and aims to provide the background to the subsequent studies on care farms by assessing the following research sub-question:

3. How effective are farm-based interventions for people with mental disorders?

The systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses standard (PRISMA) (Liberati et al., 2009). The review included controlled and uncontrolled treatment outcome studies of farm-based interventions for adults (i.e., 18 years of age or older) with mental disorders that used validated measurement scales (self-ratings or assessor ratings) to report outcomes related to mental health recovery. The literature search was conducted on three electronic databases. Study results were summarized and changes in mental health outcomes (severity of anxiety, depressive and schizophrenia symptoms; cognitive, psychosocial and occupational functioning; and quality of life) were assessed using standardized mean differences, corrected for small samples (Hedges’ $g$) (Hedges, 1981). Analysis was performed using Comprehensive Meta-Analysis 2.2. In addition, patients’ experiences with the farm-based interventions, presented in 3 studies, were summarized using thematic synthesis (Thomas & Harden, 2008).

These first insights into personal narratives of people with mental disorders were enlarged with a subsequent qualitative study (Chapter 6) that explores processes of mental
health recovery on care farms and in regular rehabilitation services. The research sub-question formulated to guide this part of the study was:

4. What are the experiences of people with mental disorders with the services on care farms, and how do they compare to the experiences of users of regular rehabilitation services?

Data were collected through semi-structured interviews with 26 participants on care farms (n=14), work projects (n=7) and art projects (n=5). Interviews focused on participants’ lives before attending the service, the goals they had formulated, and their experiences with the services. All interviews were transcribed verbatim, and transcripts were analysed through an integrated approach. Data analysis was performed using ATLAS.ti 6.02 (for qualitative analysis) and SPSS Statistics 17.0 (for quantitative data describing participants’ characteristics and characteristics of service use).

Part 3. A psychiatric rehabilitation approach to care farm services and practices

The third part of the thesis focuses on care farm services and practices from a psychiatric rehabilitation approach. It consists of two studies conducted at the interface between mental health care organizations and care farms, an area where research had been scarce to date (as shown in Chapter 2, Table 2.2. and Figure 2.2.).

The research presented in Chapter 7 builds on current debates regarding the opportunity of involving the private sector in the delivery of mental health care services. In health care, outsourcing has been long used as a means of improving efficiency and reducing costs (Young, 2008), but the potential of outsourcing for psychiatric rehabilitation had not been established. This study aims to provide insights into how services differ across three organizational forms (institutional, private-contracted and private-independent care farms), by answering the following research sub-question:

5. How do institutional, private-contracted and private-independent care farms compare in terms of service characteristics, service organization, rehabilitation processes and links with local communities?

Both quantitative and qualitative methods were employed in this study. Quantitative data on care farms were retrieved from the online directory of the Federation for Agriculture and Care (Federatie Landbouw en Zorg, 2011), which generated a database of 214 care farms,
of which 24 were institutional, 57 were private-contracted and 113 were private-independent. Differences in the service characteristics across the three organizational forms were tested using two-tailed chi square tests for categorical variables and one-way analysis of variance statistics (ANOVA) for continuous variables. Univariate and multivariate logistic regression was used to identify service characteristics associated with the three organizational forms. Data analysis was performed with SPSS 20.0. Qualitative data consisted of 5 case descriptions that were derived from 34 interviews conducted with service providers on care farms. Qualitative data analysis was conducted with ATLAS.ti 6.2.

The final study (Chapter 8) focuses on the collaboration between rehabilitation professionals and non-professionals, namely care farmers. Previous research had suggested that mental health care professionals view positively the services provided on care farms (Berget et al., 2008b; Berget & Grepperud, 2011), but further insights into how the collaboration takes place were largely missing. Therefore, the study aimed to answer the following research question:

6. What benefits do rehabilitation professionals derive from their collaboration, and what challenges do they face?

The study used an explorative, qualitative approach based on in-depth interviews conducted with 15 rehabilitation professionals and 11 care farmers. All interviews were transcribed verbatim, and analysed through an integrated approach, using the ATLAS.ti 6.02 software.

Validity of results

In qualitative research, internal validity can be threatened by two main types of errors: reactivity (the effect of researcher on the setting) and the effect of the researcher on participants (researcher bias) (Maxwell, 1998). Reactivity was addressed by formulating and asking open questions, by probing the answers, and by avoiding the formulation of leading questions. Researcher bias was addressed using the following strategies:

- collecting rich data, by documenting the context in which the interviews took place, and by basing the analysis on verbatim transcripts of the interviews;
- use of simple numerical results to differentiate between frequent, typical, or rare occurrence of themes, and to identify discrepancies across groups of participants;
• searching for discrepancies in evidence or negative cases that might provide new insights and change the preliminary conclusions formulated by researchers;
• analysing data with other members of the research team; and
• soliciting feedback from researchers not involved in the project.

The validity of quantitative data analysed in Chapter 4 was ensured by a protocol established within the NESDA study. Data were collected using structured, computer-guided interviews by trained research staff. In addition, periodical quality control checks were performed by the field work coordinator.

The validity of online quantitative data analysed in Chapter 7 was checked in telephone interviews within a random sample of 24 care farms. The check related to the variable “the number of daily placements”. Furthermore, quantitative data were triangulated using qualitative data which confirmed and enriched the understanding of quantitative results.

**Ethical issues**

In quantitative, as well as in qualitative research, ethical issues should always be considered. The application of the core principles of ethical conduct of research, as specified in the Belmont Report (namely: respect for persons, benefice and justice) (National Commission for the Protection of Human Subjects of Behavioural Research, 1978) requires that: researchers provide participants with sufficient information on the project to allow them to make a voluntary decision about participation (informed consent); participants have the right to determine whether or not they participate in research (self-determination); and researchers do not harm participants or put them at risk (minimization of harm), protect the identity of study participants (anonymity) and keep data records confidential (confidentiality) (Hennink, Hutter, & Bailey, 2011).

The research presented in this thesis was reviewed by the Ethical Review Board at the VU University Medical Centre. Research with individuals was conducted in three studies (Chapters 4, 6 and 8) in which ethical issues were addressed through the following strategies:
• providing study participants with detailed written and oral information during the recruitment, as well as during the data collection (at the beginning of each interview);
• organizing recruitment strategies in which researchers had no direct influence on potential study participants;
• assigning study participants unique research IDs, which replaced their names;
• conducting interviews in private locations, away from other service users or colleagues;
• and allowing access to data records only to the researchers directly involved in data collection and analysis.

In addition, the quantitative analysis presented in Chapter 7 was based on data published by the Federation for Agriculture and Care, for which permission was obtained prior to the study.

Outline of the thesis

Chapters 4 to 8 are based on separate articles submitted for publication. They successively answer the research sub-questions detailed above. The chapters are organized in three parts, corresponding to the assessment of recovery in common mental disorders (Part 1), the exploration of mental health recovery on care farms (Part 2) and the analysis of care farm services and practices from a psychiatric rehabilitation approach (Part 3). Chapter 9 presents the conclusion and discussion of results, and is followed by an epilogue (Chapter 10) which was accepted for publication as an invited paper. The thesis is concluded by English, Dutch and Romanian summaries.
Chapter 4. Trajectories of functioning after remission from anxiety disorders:  
2-year course and outcome predictors

Abstract

Background: Anxiety disorders are associated with substantial functional limitations, but the course of functioning following symptom remission remains largely unknown. Methods: Using data of the Netherlands Study of Depression and Anxiety (NESDA), we examined the 2-year trajectories of functioning in participants with chronic (n=586) or remitting anxiety disorders (n=385) and in healthy controls (n=585). In participants with remitting anxiety disorders, we identified predictors of functioning from among socio-demographic, clinical and vulnerability variables. Data were analysed using linear mixed models. Functioning was assessed with the World Health Organization Disability Assessment Schedule (WHO DAS II). Results: At baseline, participants with remitting anxiety disorders functioned significantly better than those with chronic anxiety disorders, but significantly worse than controls. In both anxiety disorder groups, most impairment was reported in social functioning, occupational functioning and cognition. During the follow-up, functioning improved in both groups, probably due to treatments received. Participants who achieved symptom remission experienced moderate improvements in social functioning and cognition, but not in occupational functioning. Of those who remitted, 45.8% reported functioning scores similar to healthy controls whereas 28.5% still functioned at the level of those with chronic anxiety disorders. Worse functioning was predicted by severe anxiety disorders, use of psychological treatment, co-morbid depressive disorders and maladaptive personality traits. Conclusions: In anxiety disorders, symptom remission is accompanied by improvements in functioning but significant functional impairments may persist because of co-morbid disorders, lower functioning prior to the onset of the anxiety disorder or due to residual subthreshold anxiety symptoms.
Background

People with anxiety disorders may suffer from impairments across a range of functional domains, such as social, family and close relationships, educational attainment and occupational roles, or the overall quality of life (Alonso, Angermeyer, et al., 2004; Beard, Weisberg, & Keller, 2010; Comer et al., 2011; Eguchi et al., 2005; Fehm et al., 2005; Goodwin et al., 2005; Kessler, 2003; Lochner et al., 2003; Mendlowicz & Stein, 2000; Olatunji, Cisler, & Tolin, 2007; Rubin et al., 2000; Tenorio-Martínez et al., 2009; Waghorn, Chant, White, & Whiteford, 2005). Anxiety disorders are among the five most burdensome disorders in countries across the world (Jorm et al., 2002; Melse et al., 2000; Saarni et al., 2006; Saarni et al., 2007) because of high prevalence rates (Wittchen & Jacobi, 2005; Wittchen et al., 2011), chronic course (Fehm et al., 2005; Goodwin et al., 2005; Keller, 2003a, 2006; Lieb et al., 2005; Wittchen & Fehm, 2003; Yonkers et al., 2003), and consequences of impaired functioning (Acar turk et al., 2009; Batelaan, N. M. et al., 2007; Greenberg et al., 1999; Gustavsson et al., 2011; Leon et al., 1995). Post-morbid functioning is also a relevant outcome when considering that it impacts quality of life and predicts recurrence of anxiety disorders (Rodriguez, Bruce, Pagano, & Keller, 2005; Scholten et al., 2012). Therefore, there is growing consensus that efforts to curb the toll of anxiety disorders should focus not only on symptom remission, but also on functional recovery (Ballenger, 1999, 2001; Bandelow, 2006), thus aiming for a complete clinical and functional recovery.

Despite growing interest, studies on the relationship between symptom remission and functional recovery in anxiety disorders are scarce (Sheehan, Harnett-Sheehan, Spann, Thompson, & Prakash, 2011) and have produced inconsistent results. Short-term treatment studies suggest that pharmacological treatments induce symptom remission and improve functioning (Hartford et al., 2007; Lecrubier & Judge, 1997; Mavissakalian, Perel, Talbott-Green, & Sloan, 1998; Michelson et al., 1998; Pollack, Otto, Worthington, Manfro, & Wolkow, 1998), but the design of such studies do not enable assessment of whether functioning returns to pre-morbid levels. One early naturalistic study including a small sample of participants with anxiety disorders in primary care found that symptom remission and normalization of functioning occur synchronously (Ormel et al., 1993). However, two later studies on the natural course of panic disorder failed to reproduce these results; although participants who achieved symptom remission also experienced significant improvements in functioning, they remained significantly impaired compared to healthy controls (Scheibe & Albus, 1997; Stout, Dolan, Dyck, Eisen, & Keller, 2001).
In this context, it remains unclear whether people who reach symptom remission continue to experience functional impairments, and for how long. Under the current practice, it is expected that treating symptoms until remission allows patients to resume normal lives. According to the International Classification of Functioning, Disability and Health (ICF), however, impaired functioning results not only from illness, but also from its interaction with contextual factors, such as age, gender, education, personality or the availability of social support (World Health Organization, 2001). Therefore, levels of post-morbid functioning might vary among people who reach remission. Knowing which factors influence post-morbid functioning, beyond and above symptom remission, would permit the timely identification of patients with higher risk of persistent impairments. To date, such insights are not available.

The aim of the present study was twofold. First, the study investigated the relationship between symptom remission from anxiety disorders and level of functioning. We hypothesized that participants who reached clinical remission would report better functioning than those who did not. Based on prior research, we also investigated whether those who achieve remission reach the level of functioning found in healthy controls. We therefore analysed the trajectories of total and domain-specific functioning in participants with two year chronic anxiety disorders and in those remitting during the two year follow-up, and compared them to healthy controls. The second aim was to identify predictors of functioning in participants who achieved symptom remission from anxiety disorders. To this end, we considered a large number of socio-demographic, clinical and vulnerability variables, in line with the ICF definition of impaired functioning (World Health Organization, 2001).

Method

Study sample
Data were derived from the Netherlands Study of Depression and Anxiety (NESDA), an ongoing longitudinal cohort study on the long-term course and consequences of depressive and anxiety disorders. At baseline, a total of 2981 adult participants were recruited from community, primary- and secondary care, consisting of participants with a current or remitted depressive and/or anxiety disorder (78%), and healthy controls (22%). Presence of current or remitted depressive and anxiety disorders was established at baseline and at 2-year follow-up using the Composite International Diagnostic Interview (CIDI, version 2.1). Data were collected by specially trained research staff, and covered a wide range of domains, such as demographics, psychopathology, public health consequences of mental disorders, biological
and genetic measures. The study was approved by the Ethical Review Boards of all participating centres. All participants provided written informed consent. A more detailed description of the NESDA study was provided elsewhere (Penninx et al., 2008).

The present study draws on the first three waves of NESDA: baseline (T0), one- and 2-year follow-up (T1 and T2, respectively). For this study, we selected participants who completed both T0 and T2, regardless of whether or not they completed T1. The 1556 participants who fulfilled these criteria were divided in three groups: chronic anxiety disorder (six-month diagnosis of anxiety disorders at both T0 and T2; n=586); remitting anxiety disorder (six-month diagnosis of anxiety disorders at T0, but no six-month diagnosis at T2; n=385); and a control group of healthy participants (without history or current anxiety- or depressive disorders at T0, n=585).

Measures

Diagnosis of anxiety disorders. Anxiety disorders included social phobia, panic disorder (with or without agoraphobia), agoraphobia and generalized anxiety disorder. Diagnoses were based on the CIDI, a structured interview with high inter-rater reliability (Wittchen et al., 1991), high test–retest reliability (Wacker, Battegay, Mullejans, & Schlosser, 2006) and high validity for anxiety and depressive disorders (Wittchen, 1994; Wittchen et al., 1989).

Functioning. Functioning was assessed using the World Health Organization Disability Assessment Schedule (WHO DAS II), a 36-item generic measurement which queries difficulties in functioning encountered during the 30 days prior to the interview (Chwastiak & Von Korff, 2003). Functioning was assessed over six life domains (using seven outcome variables): communication and understanding (cognition), getting around (mobility), self-care, getting along with people (interpersonal functioning), life activities (household and work functioning) and participation in society. Items were measured on a 5-point Likert scale, ranging from 1 (no difficulties) to 5 (extreme difficulties / cannot do Total WHO DAS scores were obtained using the complex scoring method, which makes use of the full information of the response categories, thus allowing more detailed (Üstün, Kostanjsek, Chatterji, & Rehm, 2010). The method involves three-steps: the calculation of the domain-specific scores, by adding the recoded item scores within each domain; the calculation of the summary score, by summing up the domain-specific scores; and the conversion of the summary score into the total WHO DAS scores, a metric ranging from 0 (no disability) to 100 (full disability) (Üstün et al., 2010). The WHO DAS II has shown high sensitivity to symptom change in social phobia, panic disorder and agoraphobia (Perini, Slade, & Andrews, 2006) and substantial test-retest reliability (Chopra, Couper, & Herrman, 2004). Within the NESDA study, WHO DAS II was
applied to participants in all three waves, as a self-report questionnaire. The internal consistency for the WHO DAS II scale in the current sample was high (α=0.95).

Predictors of functioning. Putative predictors were assessed at baseline and included socio-demographic variables, clinical variables and psychosocial vulnerability variables. All variables were based on self-report.

Socio-demographic variables included age (in years), gender, education (in years) and presence of a partner (yes/no).

Clinical variables included age of onset of anxiety disorders, duration of anxiety episode, type of anxiety disorders, severity of anxiety and avoidance symptoms, receiving psychiatric treatment (yes/no), presence of co-morbid anxiety or depressive disorders (yes/no), presence of history of anxiety or depressive disorders (yes/no), presence of lifetime alcohol dependence (yes/no) and number of co-morbid somatic diseases. Age of onset of anxiety disorders and duration of anxiety episode – determined in the CIDI interview – was recorded in years; for participants with co-morbid anxiety disorder(s), the earliest age of onset was used. The type of anxiety disorder, also determined through the CIDI interview, referred to the presence of social phobia, panic disorder (with or without agoraphobia), agoraphobia or generalized anxiety disorder during the six months prior to the baseline measurement. Severity of anxiety symptoms was measured using the 21-item Beck Anxiety Inventory (BAI) (Beck, Brown, Epstein, & Steer, 1988), a valid and reliable instrument (Fydrich, Dowdall, & Chambless, 1992). Avoidance was measured with the 15-item Fear Questionnaire (Fear Q) (Marks & Mathews, 1979), which has been found valid in a Dutch population (Vanzuuren, 1988).

Psychiatric treatment included both medication and psychological treatment. Current medication use referred to use of antidepressants [serotonin reuptake inhibitors, Anatomical Therapeutic Chemical (ATC) code N06AB; tricyclic antidepressants, ATC N06AA; and other antidepressants, ATC N06AF/N06AX] and to use of benzodiazepines (ATC N05BA). Use of medication was considered when taken at least 50% of the time. Psychological treatment included formal psychotherapy, counselling or skills training. The presence of current (6-month recency) co-morbid depressive disorders was diagnosed with the CIDI, and included major depressive disorder and dysthymia. A prior history of depressive disorders referred to a baseline CIDI diagnosis of lifetime, but not current depressive disorder. Alcohol dependence was diagnosed with the CIDI at baseline, and referred to a lifetime diagnosis. Somatic illness was assessed using a comprehensive, self-reported inventory of 20 chronic conditions, including cardiovascular diseases, diabetes, stroke, arthritis, cancer, hypertension, intestinal problems, liver disease, epilepsy, chronic lung problems, allergy, injuries and other severe
somatic diseases. The presence of somatic illness was operationalized as the number of chronic somatic diseases under medical treatment.

Psychosocial vulnerability variables included five personality factors and the degree of support received from partner. Personality was assessed using the Neuroticism-Extraversion-Openness (NEO) personality self-report questionnaire, a 60-item questionnaire measuring five personality domains: neuroticism, extraversion, agreeableness, conscientiousness, and openness to experience (Costa & McCrae, 1995). Social support from a partner was evaluated through the Close Person Inventory (Stansfeld & Marmot, 1992) and referred to both emotional support (four items) and practical support (two items). All six items were measured on a Likert scale ranging from 1 (never) to 5 (very often). As not all participants were married or living as married, support from partner was operationalized into a categorical variable: no partner, low partner support (< -1 SD), moderate partner support (-1SD to +1SD) and high partner support (> +1 SD).

Statistical analysis

Data analysis was performed with SPSS version 20.0 (IBM Corp., USA). The baseline characteristics of the three groups were described using two-tailed $\chi^2$ tests for categorical variables and one-way ANOVAs for continuous variables.

To investigate the relationship between course trajectories of symptoms and functioning of anxiety disorders, the 2-year course trajectories of functioning were analysed for those with chronic or remitting anxiety disorders and for healthy controls. We used linear mixed models (LMMs), as this method allows for analysis of samples with missing data and with unequal time intervals. To correct for the correlation in data due to the repeated measure design, “participant” was introduced as a random factor. Group, time, and group*time interaction were entered as fixed factors. The group*time interaction term was added to examine whether changes in functioning over time differed across the three groups. Given that depressive disorders, alcohol dependence and somatic illness are strongly associated with functional impairments (Alonso, Ferrer, et al., 2004; Spak, Hensing, & Allebeck, 1998; Wells et al., 1989), we conducted the initial analysis by adjusting for the presence of baseline co-morbid depressive disorders and alcohol dependence. Thereafter, we conducted two subsequent analyses, adjusting first for the presence of baseline co-morbid depressive disorders, alcohol dependence and number of somatic illnesses, and then for the presence of baseline co-morbid depressive disorders, alcohol dependence and past depressive disorders. All potential confounders were entered as a fixed factors.
The magnitude in change in total and domain-specific functioning scores from baseline to 2-year follow-up in the anxiety disorder groups, compared to healthy controls, was quantified using Cohen’s d (Cohen, 1988). Cohen’s d was calculated as the standardized mean difference in changes in functioning scores from baseline to 2-year follow-up in the chronic anxiety disorder group, compared to controls, and in remitting anxiety disorder group, compared to controls. All d values were calculated using the Comprehensive Meta Analysis software, version 2.2.064 (Biostat, Inc., USA).

To identify predictors of functioning in participants who remitted during follow-up, additional LMM analyses were performed, assessing the strength of associations between a large number of socio-demographics, clinical variables and vulnerability variables and functioning through bivariate analysis. To test whether the relationship between functioning and the putative predictors changed over time, we included in the analysis the relevant interaction terms with time. A positive significant interaction term with time implicated that the relationship between functioning and the putative predictor became stronger over time, whereas a negative significant interaction term implied that the relationship became weaker over time. All predictor variables and their interaction terms with time were introduced as fixed factors. Given the exploratory nature of the prediction analysis, we aimed to reduce the possibility of false negatives by setting the p-value at 0.1 in the bivariate analysis. To account for multiple testing in the bivariate analysis, Bonferroni correction was used; corrected p-values are reported. For multivariate analysis, statistical significance was set at \( p \leq 0.05 \). Multicollinearity was not an issue (largest Spearman correlation coefficient: 0.44).

Results

Study sample

The sample consisted of 1556 participants divided into three groups: chronic anxiety disorder (n=586), remitting anxiety disorder (n=385) and healthy controls (n=585). Their baseline characteristics are presented in Table 4.1. The sample had a mean age of 41.6 years (SD=13.2) and consisted in majority of women (64.8%). On average, participants were fairly well educated, with an average 12.2 years of education (SD=3.3); 68.8% had a partner. Compared to participants with chronic anxiety disorder, those with remitting anxiety disorder reported later onset of anxiety disorders, and were less severely ill, as illustrated by a lower severity score, less co-morbid anxiety and depressive disorders and less alcohol dependence.
Table 4.1.
Baseline characteristics of participants with chronic or remitting anxiety disorders and healthy controls

<table>
<thead>
<tr>
<th>Baseline characteristics</th>
<th>Chronic anxiety disorder</th>
<th>Remitting anxiety disorder</th>
<th>Healthy controls</th>
<th>p</th>
<th>Post-hoc analysis (p≤0.05)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=586</td>
<td>n=385</td>
<td>n=585</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Socio-demographic variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td>41.9(12.2)</td>
<td>42.3(12.3)</td>
<td>40.9(14.6)</td>
<td>0.228</td>
<td></td>
</tr>
<tr>
<td>Gender (female)</td>
<td>68.6</td>
<td>64.4</td>
<td>60.7</td>
<td>*</td>
<td>1&gt;3</td>
</tr>
<tr>
<td>Education (years)</td>
<td>11.7(3.3)</td>
<td>11.8(3.2)</td>
<td>12.9(3.2)</td>
<td>***</td>
<td>1&lt;3,2&lt;3</td>
</tr>
<tr>
<td>Partner status (yes)</td>
<td>63.5</td>
<td>66.4</td>
<td>72.7</td>
<td>**</td>
<td>1&lt;3,2&lt;3</td>
</tr>
<tr>
<td><strong>Clinical variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age of onset (years)</td>
<td>19.1(12.3)</td>
<td>22.0(14.3)</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Duration of episode</td>
<td>22.7(14.5)</td>
<td>20.2(14.7)</td>
<td></td>
<td>**</td>
<td></td>
</tr>
<tr>
<td>Type of anxiety disorder</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Social phobia (yes)</td>
<td>58.9</td>
<td>43.4</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Panic with agoraphobia (yes)</td>
<td>41.8</td>
<td>19.2</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Panic disorder (yes)</td>
<td>16.4</td>
<td>20.0</td>
<td></td>
<td>0.170</td>
<td></td>
</tr>
<tr>
<td>Agoraphobia (yes)</td>
<td>13.7</td>
<td>18.4</td>
<td></td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Generalized anxiety disorder (yes)</td>
<td>30.6</td>
<td>34.5</td>
<td></td>
<td>0.681</td>
<td></td>
</tr>
<tr>
<td>Severity of anxiety</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety symptoms (BAI score)</td>
<td>20.8(10.8)</td>
<td>15.8(9.5)</td>
<td>3.8(4.6)</td>
<td>***</td>
<td>1&gt;2,1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Avoidance symptoms (Fear score)</td>
<td>41.0(20.4)</td>
<td>30.5(17.9)</td>
<td>11.9(12.0)</td>
<td>***</td>
<td>1&gt;2,1&gt;3,2&gt;3</td>
</tr>
<tr>
<td><strong>Psychiatric treatment</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of antidepressants (yes)</td>
<td>41.8</td>
<td>35.6</td>
<td>0.9</td>
<td>***</td>
<td>1&gt;3</td>
</tr>
<tr>
<td>Use of benzodiazepines (yes)</td>
<td>14.8</td>
<td>10.6</td>
<td>0.5</td>
<td>***</td>
<td>1&gt;3</td>
</tr>
<tr>
<td>Psychological treatment (yes)</td>
<td>49.7</td>
<td>40.5</td>
<td>4.8</td>
<td>***</td>
<td>1&gt;2,1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Co-morbid anxiety disorder (yes)</td>
<td>52.0</td>
<td>30.4</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>Co-morbid depressive disorder (yes)</td>
<td>64.0</td>
<td>55.8</td>
<td></td>
<td>***</td>
<td></td>
</tr>
<tr>
<td>History of anxiety disorder (yes)</td>
<td>19.5</td>
<td>23.6</td>
<td></td>
<td>0.127</td>
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<tr>
<td>History of depressive disorder (yes)</td>
<td>19.6</td>
<td>24.9</td>
<td></td>
<td>0.056</td>
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<tr>
<td>Alcohol dependence (yes)</td>
<td>22.4</td>
<td>16.9</td>
<td>5.3</td>
<td>***</td>
<td>1&gt;2,1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Number of co-morbid somatic illness</td>
<td>1.1(1.1)</td>
<td>1.0(1.0)</td>
<td>0.6(1.0)</td>
<td>***</td>
<td>1&gt;3,2&gt;3</td>
</tr>
<tr>
<td><strong>Psychosocial vulnerability variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Personality, mean (S.D.)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Neuroticism</td>
<td>43.1(6.7)</td>
<td>40.3(7.2)</td>
<td>26.8(7.4)</td>
<td>***</td>
<td>1&gt;2,1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Extraversion</td>
<td>33.1(6.9)</td>
<td>34.6(6.6)</td>
<td>42.2(6.2)</td>
<td>***</td>
<td>1&lt;2,1&lt;3,2&lt;3</td>
</tr>
<tr>
<td>Openness</td>
<td>38.1(6.2)</td>
<td>38.2(6.3)</td>
<td>38.1(5.7)</td>
<td>0.943</td>
<td></td>
</tr>
<tr>
<td>Agreeableness</td>
<td>42.6(5.3)</td>
<td>43.2(5.5)</td>
<td>45.4(4.7)</td>
<td>***</td>
<td>1&lt;3,2&lt;3</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>39.3(6.5)</td>
<td>40.6(6.7)</td>
<td>45.1(5.5)</td>
<td>***</td>
<td>1&lt;2,1&lt;3,2&lt;3</td>
</tr>
<tr>
<td>Level of support from partner</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No partner</td>
<td>36.5</td>
<td>33.6</td>
<td>27.3</td>
<td>**</td>
<td>1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Low support</td>
<td>15.0</td>
<td>15.3</td>
<td>8.3</td>
<td>***</td>
<td>1&gt;3,2&gt;3</td>
</tr>
<tr>
<td>Moderate support</td>
<td>40.4</td>
<td>44.6</td>
<td>53.3</td>
<td>***</td>
<td>1&lt;3,2&lt;3</td>
</tr>
<tr>
<td>High support</td>
<td>8.0</td>
<td>6.5</td>
<td>11.1</td>
<td>*</td>
<td>2&lt;3</td>
</tr>
</tbody>
</table>

Notes:
BAI, Beck Anxiety Inventory

a: Overall group differences, based on ANOVA for continuous variables and X² statistics for categorical variables.
b: Groups in post-hoc analysis noted as: 1=chronic anxiety disorder; 2=remitted anxiety disorder; 3=healthy controls
Values given as mean (standard deviation) or percentage
*p≤0.05; *p≤0.01; **p≤0.001
Two-year course trajectories of total functioning

Course trajectories of total functioning, adjusted for presence of current depressive disorder at T0 and for alcohol dependence, are presented in Figure 4.1. A. At baseline, worse total functioning was reported by participants with chronic anxiety disorder [$\beta$(S.E.)=18.8 (1.1), $p$$\leq$0.001], followed by those with remitting anxiety disorder [$\beta$(S.E.)=13.3 (1.2), $p$$\leq$0.001] and by healthy controls (reference group). During the 2-year follow-up (T0T2), a significant interaction with time was found for both anxiety disorder groups, indicating that participants with chronic and remitting anxiety disorders experienced improved functioning over the follow-up period, compared to healthy controls (chronic anxiety disorder* T0T2: $\beta$(S.E.)=6.9(0.9), $p$$\leq$0.001; remitting anxiety disorder* T0T2: $\beta$(S.E.)=-8.4(1.0), $p$$\leq$0.001; reference group: healthy controls). The magnitude of changes in total functioning from baseline to 2-year follow-up in each of the two anxiety disorder groups, compared to controls, is presented in Table 4.2. Improvements were small to moderate in both anxiety disorder groups ($d$=0.34). Considering the yearly trajectories, interaction with time was significant for the first year of follow-up (T0T1), but not for the second year (T1T2), indicating that most improvement occurred during the first year of follow-up (data not shown). Despite these improvements, however, both chronic and remitting anxiety disorder groups reported significantly worse functioning at the end of follow-up, compared to the control group ($p$$\leq$0.001). Thus, those with remitted anxiety disorders remained significantly impaired at the end of the follow-up period, compared to healthy controls.

The comparative analysis of participants in the remitting- and chronic anxiety disorder groups showed that differences in functioning scores between the two groups increased over time (at T0: $\beta$(S.E.)=-5.5(1.1), $p$$\leq$0.001; at T1: $\beta$(S.E.)=-6.5(1.1), $p$$\leq$0.001; at T2: $\beta$(S.E.)=-6.9(1.1), $p$$\leq$0.001; reference group: chronic anxiety disorders). However, the chronic-versus remitting-anxiety group*time interaction terms did not reach statistical significance (T0T1: $\beta$(S.E.)=-1.0(1.1), $p$=0.38; T1T2: $\beta$(S.E.)=-0.5(1.1), $p$=0.66; T0T2: $\beta$(S.E.)=-1.5(1.1), $p$=0.17). This indicates that the improvements in functioning over time were similar in the two groups.

At baseline, co-morbid somatic illnesses and history of depressive disorder were significantly more prevalent in participants with remitting anxiety disorders, compared to healthy controls, suggesting a possible confounding effect (Table 4.1). Adjusting for co-morbid somatic illness (additional to co-morbid depressive disorder and alcohol dependence) slightly reduced the differences in functioning between participants with remitting anxiety disorders and healthy controls (at T0: $\beta$(S.E.)=-12.8(1.1), $p$$\leq$0.001; at T1: $\beta$(S.E.)=-5.3(1.2), $p$$\leq$0.001; at T2: $\beta$(S.E.)=-4.5(1.2), $p$$\leq$0.001; reference group: healthy controls).
Chapter 4

Figure 4.1. Two-year trajectories of total and domain-specific functioning in participants with chronic anxiety disorder, remitting anxiety disorders and in healthy controls (adjusted for current depression at baseline and lifetime alcohol dependence). A: Total functioning; B: Household functioning; C: Work functioning; D: Interpersonal functioning; E: Participation in society; F: Cognition; G: Mobility; H: Self-care. All group x time interactions are significant at $p \leq 0.05$. Asterisks mark significant differences from healthy controls at baseline and at the 2-year follow-up: *$p \leq 0.05$; **$p \leq 0.01$; ***$p \leq 0.001$; ns: $p > 0.05$

However, adjusting for history of depressive disorder (additional to co-morbid depressive disorder and alcohol dependence) resulted in a non-significant difference between the two groups (at T0: $\beta$(S.E.)=10.6(1.4), $p \leq 0.001$; at T1: $\beta$(S.E.)=3.1(1.4), $p \leq 0.05$; at T2: $\beta$(S.E.)=2.2(1.4), $p = 0.11$; reference group: healthy controls). These results confirmed the
confounding effects of co-morbid somatic illnesses and history of depressive disorder, of which only the latter seemed to fully explain the differences in 2-year trajectories of functioning between participants with remitting anxiety disorders and healthy controls.

**Two-year course trajectories across domains of functioning**

Trajectories of domain-specific functioning are presented in Figure 4.1. B-H. At baseline, participants with chronic and remitting anxiety disorders were significantly impaired across all domains of functioning, compared to controls. Most impairment was found in household and work functioning, followed by interpersonal functioning, participation in society, cognition, mobility and self-care. This gradient across domains was found in both anxiety disorder groups, with participants with chronic anxiety disorders being significantly more impaired compared to those with remitting anxiety disorders (all \( p \leq 0.01 \)). During the two year follow-up, functioning scores dropped significantly across all domains. The domain-specific improvements in the chronic anxiety disorder group were small (all \( d = 0.34 \) or below) (Table 4.2). In the remitting anxiety disorder group, moderate improvements were found in three domains: interpersonal functioning (\( d = 0.44 \)), participation in society (\( d = 0.44 \)) and cognition (\( d = 0.41 \)). Effect sizes for the remainder of the domains were small (\( d = 0.34 \) or below). At the end of follow-up, significant impairments in functioning persisted in both anxiety disorder groups, compared to controls. The only exception was self-care, where participants in remitting anxiety disorder group had reached levels of functioning comparable to those of healthy controls (\( p = 0.158 \)).

<table>
<thead>
<tr>
<th>Domains of functioning</th>
<th>Chronic anxiety disorder</th>
<th>Remitting anxiety disorder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total functioning</td>
<td>0.34</td>
<td>0.34</td>
</tr>
<tr>
<td>Interpersonal functioning</td>
<td>0.13</td>
<td>0.22</td>
</tr>
<tr>
<td>Household functioning</td>
<td>0.26</td>
<td>0.33</td>
</tr>
<tr>
<td>Work functioning</td>
<td>0.25</td>
<td><strong>0.44</strong></td>
</tr>
<tr>
<td>Participation in society</td>
<td>0.33</td>
<td><strong>0.44</strong></td>
</tr>
<tr>
<td>Cognition</td>
<td>0.28</td>
<td><strong>0.41</strong></td>
</tr>
<tr>
<td>Mobility</td>
<td>0.19</td>
<td>0.18</td>
</tr>
<tr>
<td>Self-care</td>
<td>0.27</td>
<td>0.20</td>
</tr>
</tbody>
</table>

Note:
Bold values indicate the domains of functioning for which moderate improvements were found.
Predictors of functioning in participants with remitting anxiety disorders

Participants who achieved symptom remission at the end of the follow-up period reported mean functioning scores of 19.1 (SD=19.4, range: 0-75.5) (Figure 4.1. A). This large range indicates that, although all participants in this group had achieved symptom remission, considerable heterogeneity in functioning persisted, with some participants functioning within normal ranges and others remaining significantly impaired. Indeed, at 2-year follow-up, 45.8% of participants who remitted reported scores similar to the average scores of healthy controls (i.e. ≤14), and 28.5% reported scores similar to the average scores of participants with chronic anxiety disorders (i.e. ≥26.2). In order to identify the putative predictors of functioning in participants who achieved symptom remission, we further inspected a large number of socio-demographic, clinical and vulnerability variables. Significant predictors are presented in Table 4.3., along with the significant interactions with time.

Bivariate analyses demonstrated that worse functioning at T2 was significantly associated with female gender, higher baseline severity of anxiety or avoidance symptoms, receiving antidepressant or psychological treatment, presence of co-morbid anxiety or depressive disorders, higher neuroticism, lower extraversion and lower conscientiousness.

Among socio-demographic variables, only female gender was predictive of worse functioning. To identify the independent predictors of functioning among the clinical and vulnerability variables, we constructed two separate multivariate models. Among clinical variables (Model 1), worse functioning was significantly associated with more severe anxiety and avoidance symptoms, receiving psychological treatment, and presence of baseline co-morbid depressive disorders. Among personality factors (Model 2), significant predictors were higher neuroticism and lower conscientiousness.

The significant socio-demographic, clinical and vulnerability predictors obtained from the analysis above were assessed together in the final model (Model 3). Six of the variables remained significant predictors of low functioning: more severe anxiety and avoidance symptoms, receiving psychological treatment, presence of co-morbid depressive disorders, higher neuroticism and lower conscientiousness. We found a significant negative interaction with time for severity of anxiety symptoms, use of psychological treatment and neuroticism, and a significant positive interaction with time for conscientiousness, suggesting that improvements in functioning were larger for those with higher severity of symptoms, receiving psychological treatment, higher neuroticism and lower conscientiousness.
Table 4.3.

**Univariate and multivariate predictors of functioning at 2-year follow-up in participants with remitting anxiety disorders**

<table>
<thead>
<tr>
<th></th>
<th>Bivariate a</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>β (SE)</td>
<td>p</td>
<td>β (SE)</td>
<td>p</td>
</tr>
<tr>
<td><strong>Socio-demographic variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender (female)</td>
<td>9.4(2.6)</td>
<td>0.001</td>
<td>2.0(1.3)</td>
<td>0.128</td>
</tr>
<tr>
<td><strong>Clinical variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severity of symptoms</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety symptoms (BAI)</td>
<td>10.9(1.2)</td>
<td>0.001</td>
<td>7.2(1.2)</td>
<td>0.001</td>
</tr>
<tr>
<td>BAI *Time</td>
<td>-2.5(0.4)</td>
<td>0.001</td>
<td>-1.9(0.5)</td>
<td>0.001</td>
</tr>
<tr>
<td>Avoidance symptoms (Fear)</td>
<td>10.0(1.2)</td>
<td>0.001</td>
<td>6.9(1.2)</td>
<td>0.001</td>
</tr>
<tr>
<td>Fear *Time</td>
<td>-1.7(0.5)</td>
<td>0.001</td>
<td>-0.9(0.5)</td>
<td>0.051</td>
</tr>
<tr>
<td>Psychiatric treatment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of antidepressants (yes)</td>
<td>10.4(2.7)</td>
<td>0.001</td>
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<tr>
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<td></td>
<td></td>
<td></td>
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<tr>
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<td>0.001</td>
<td>9.4(1.3)</td>
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<td>-1.3(0.9)</td>
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<td>1.3(0.5)</td>
<td>0.011</td>
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</tbody>
</table>

Notes:
- BAI, Beck Anxiety Inventory; S.E., standard error
- Model 1: clinical variables; Model 2: psychosocial vulnerability variables; Model 3: final model
- Bold values in models 1 to 3 indicate values of p ≤ 0.05
- a: For the bivariate analysis, the following variables were tested but are not shown because of the p-values: age, education, partner status, age of onset, duration of episode, type of anxiety disorder, use of benzodiazepines, history of anxiety disorders, history of depressive disorders, alcohol dependence, number of co-morbid somatic illnesses, openness, agreeableness, and level of support from partner
- b: Bonferroni-corrected p value;
- c: Score per standard deviation (S.D.) increase

**Discussion**

Given the importance of functional limitations in anxiety disorders, this research was conducted to investigate the relationship between symptom remission and level of functioning in anxiety disorders. Our results indicate that symptom remission is accompanied by improvements in functioning, but that significant functional impairments may persist. Participants who achieved remission during the two year follow-up reported significantly better functioning at the end of this period, compared to those who did not remit. However,
improvements were small, and functioning remained significantly impaired, compared to healthy controls.

In the remitting anxiety disorder group, the persistence of significant post-morbid functional limitations (after controlling for co-morbid depressive disorders and alcohol dependence) can be explained through three different scenarios. One scenario that we investigated in our analysis regarded the potential influence of co-morbid somatic illness and past depressive disorder, both associated with considerable debilitating effects (Alonso, Ferrer, et al., 2004; Wells et al., 1989). The two subsequent adjusted analyses that we conducted confirmed the confounding effects of co-morbid somatic illnesses and history of depressive disorder. However, only the latter seemed to fully explain the differences in 2-year trajectories of functioning between participants with remitting anxiety disorders and healthy controls. This suggests that the influence of past depressive disorders on the levels of functioning extends beyond the clinical remission of depressive symptoms, and can play an important role in the functioning of people with remitting anxiety disorders.

As a second scenario, it is possible that the persistence of post-morbid functional limitations in the remitting anxiety group could be explained by the fact that participants with remitted anxiety disorders had worse functioning than controls even before the onset of anxiety disorders. This hypothesis is supported by the fact that onset or recurrence of anxiety disorders is best predicted by impaired functioning (Rodriguez et al., 2005), a finding that was also replicated in this data set (Scholten et al., 2012). In the same vein, research on depression has found that prior to the onset of depressive disorders, functioning is already impaired (Ormel, Oldehinkel, Nolen, & Vollebergh, 2004), and that although post-morbid levels of functioning were similar to pre-morbid levels of functioning, they differed from non-depressed persons (Buist-Bouwman, Ormel, de Graaf, & Vollebergh, 2004), suggesting that the functional limitations we found in remitted participants may be part of a pre-existing vulnerability. And finally, it is possible that those who achieved symptom remission may still suffer from subthreshold symptoms. Subthreshold symptoms may be persistent (Batelaan, de Graaf, Penninx, et al., 2010; Batelaan, de Graaf, Spijker, et al., 2010) and may cause functional limitations (Batelaan, De Graaf, Van Balkom, Vollebergh, & Beekman, 2007; Rucci et al., 2003; Skapinakis et al., 2011).

At baseline, both anxiety disorder groups were significantly impaired compared to healthy controls across all domains of functioning, with most impairments experienced in household and work functioning, interpersonal functioning, participation in society and cognition. In participants who remitted during the follow-up, moderate improvements were found in interpersonal functioning, participation in society and cognition, but not in household and work functioning. This suggests that people with anxiety disorders who achieve symptom
remission might also experience some improvements in social functioning and cognition, but not in occupational functioning. Nevertheless, none of the domain-specific functioning returned to normal levels, except for self-care, where impairments had been minimal from the beginning.

Remarkably, functioning improved not only in participants who reached symptom remission during the two year follow-up, but also in those who did not (i.e., chronic anxiety disorder group), although improvements in this group were small to moderate. At baseline, 68.9% of participants in the chronic anxiety disorder group received psychiatric treatment (antidepressants, benzodiazepines or psychological treatment; data not shown). Therefore, improvements during the two year follow-up were to be expected, at least in a subsample of this group. Indeed, at the end of follow-up, BAI and Fear scores had dropped significantly in this group (mean BAI scores: from 20.5 (SD=10.7) at T0 to 15.7 (SD=10.0) at T2, p<0.001; mean Fear scores: from 40.8 (SD=20.0) at T0 to 35.2 (SD=20.4) at T2, p<0.001), suggesting that anxiety symptoms had significantly alleviated during the follow-up, although not enough to render the diagnosis of anxiety disorders unnecessary.

A second aim of the study was to assess the influence of baseline socio-demographic, clinical and vulnerability characteristics on post-morbid functioning. The socio-demographic characteristics seemed to have no predictive value for the functional impairments reported at the end of the follow-up period. Among clinical predictors, co-morbid depressive disorders, more severe anxiety and avoidance symptoms, and receiving psychological treatment predicted higher functional impairments after symptom remission. Among these, receiving psychological treatment was the strongest predictor of poor functioning after symptom remission. Although counterintuitive, this result is common in naturalistic studies, where treatment is not assigned randomly, but is more frequent in participants who are more severely ill (Beard, Moitra, Weisberg, & Keller, 2010). Co-morbidity and maladaptive personality traits, known predictors for functioning in mental disorders (Konrad, Stanisława, & Joanna, 2010; Verboom et al., 2011; Wiebe & Christensen, 1996), were also predictive of functioning after symptom remission, suggesting that their influence extends beyond the morbid period.

Our study addressed important gaps in the literature. We extended previous research of Scheibe and Albus (Scheibe & Albus, 1997) and of Stout et al (Stout et al., 2001) by providing insights into several types of anxiety disorders and by including a healthy control group. Although Bijl et al (Bijl & Ravelli, 2000) chose for a similar approach, their research was community-based, rendering their results generalizable only to the general population. The availability of data on participants from the community, and also from primary and secondary care, therefore represents a strong point in our study. Additional strengths include
the large sample size; the structured diagnostic procedures; the longitudinal design; and the exploration of a large number of potential predictors.

We acknowledge several limitations. The most important limitations reside in the lack of insights regarding the reasons for the persistence of differences in functioning between the remitting anxiety disorders group and healthy controls. The first scenario we discussed here suggested that past depressive disorders, and not somatic illness, play a role in the persistence of functional impairments between the two groups. Although we controlled for this potential confounding effect of somatic illness on functioning, it would have been useful to assess separately the influence of anxiety disorders and that of somatic illness on functioning, for example by including separate WHODAS assessments for somatic illness and for mental disorders, or by adding to the interview a disorder-specific role impairment measure, such as Sheehan Disability Scale. However, this was not possible, because the information was not available in the NESDA dataset. Similarly, lack of adequate data prevented us from further investigating the second scenario, namely whether or not the persistence of differences in functioning between remitting anxiety disorders group and healthy controls reflected lower functioning in the former group, before the onset of the anxiety disorders. Additional limitations relate to the retrospective, self-reported assessment of functioning, with no triangulation of the data (for example, from family members or friends). It is therefore possible that functioning scores of participants with anxiety disorders were erroneously increased by information-processing biases, such as negative interpretations of social events (Stopa & Clark, 2000; Wilson & Rapee, 2005a, 2005b), or (the still disputed) negative memory bias for one’s own performances compared to others (Cody & Teachman, 2010). Furthermore, the design of the NESDA study did not include all types of anxiety disorders. Therefore, our results cannot be generalized to other anxiety disorders, such as obsessive compulsive disorders or post-traumatic stress disorders. Likewise, as not all mental disorders have been assessed in NESDA, we could not control for these disorders.

In sum, we illustrate that anxiety disorders are associated with significant limitations in functioning. Although functioning improves after symptom remission, significant functional limitations persist within a 2-year follow-up period, probably due to co-morbid disorders, lower functioning prior to the onset of the anxiety disorder or due to residual subthreshold anxiety symptoms. Mental health care providers should be aware that, in people with remitting anxiety disorders, severe anxiety disorders, co-morbid depressive disorders and maladaptive personality traits predict worse functioning. Future research could focus on elucidating the mechanisms underlying the persistence of significant post-morbid functional limitations in participants with remitting anxiety disorders, and on developing interventions that can facilitate better outcomes in this group.
TUIN

VAN

ANNEMIEK
Part 2

Mental health recovery on care farms
Chapter 6. Mental health recovery on care farms and day centres.  
A qualitative comparative study of users’ perspectives

Abstract

Purpose: Mental health services increasingly incorporate the vision of recovery. This qualitative study analysed and compared experiences of recovery on prevocational services, in order to assess if users make progress towards recovery, relative to a staged recovery model.  
Method: Data were collected through semi-structured interviews with participants on care farms (n=14), work- (n=7) and creative projects (n=5). Results: The transition from past to current lives was described as a progressive, non-linear process, with different stages guided by different goals. Participants on creative projects lacked clear goals, presented less interest in peers and high need for emotional support. Participants on work projects aimed for occupational rehabilitation, but struggled with the patient culture of the peer community. Participants on care farms aimed for daytime occupations and closer contact with society. They experienced care farms as open, real-life work settings where they could exercise responsibility and connect with people. Conclusions: Participants progressed towards recovery, as care farms, work- and creative projects empowered them to leave behind inactive, isolated or disorganized living. In day centres, users focused on self-reflection and personal development (creative projects) or on occupational performance (work projects), whereas on care farms, users fulfilled worker roles in a real-life, open community environment.

Implications for rehabilitation

- Organized as open communities in real-life settings, care farms facilitate the reflection on personal and social responsibility, and therefore have the potential to help users internalize worker identities and to improve their motivation to progress towards recovery.
- Supervisors on care farms are regarded by users as close contacts within the social networks they develop on the service, a position that allows supervisors to actively engage and promote users’ progress towards recovery.
- Elements of the farm environment (such as the “normal life”, presence of family members and visitors, and nature) can serve as anchors for supporting the progress towards recovery.
Introduction

Mental health rehabilitation services in the Netherlands, as well as in other developed countries, are increasingly incorporating the vision of mental health recovery, as advanced by the consumer recovery movement (Cross Government Strategy: Mental Health Division, 2009; GGZ Nederland, 2009a; Lapsley et al., 2002; The President's New Freedom Commission on Mental Health, 2003). This movement defined recovery as “the development of new meaning and purpose in one’s life as one grows beyond the catastrophic effects of mental illness” (Anthony, 1993). The individual-centred perspective on recovery was substantiated by a large body of literature documenting the lived experiences of people with mental disorders. Responding to calls for conceptual clarity, recent literature reviews synthesised fundamental components of recovery and underlined the importance of developing a sense of hope for a better future, finding meaning in one’s life, rebuilding/redefining a positive sense of identity, undertaking roles that are valued by society, assuming personal responsibility in steering one’s recovery, building up the determination to continue despite adversity, and connecting with peers for mutual support (Davidson et al., 2005; Leamy et al., 2011; Liberman, 2008; Onken et al., 2007; Slade et al., 2008). A five stage model of recovery emerged, which conveyed the idea that people with mental disorders go through a personal journey and adapt to a new status quo, learning to find personal meaning despite and beyond the limitations imposed by the mental disorder. These stages were summarized as follows: 1. moratorium (denial of the mental diagnosis, confusion, helplessness, withdrawal from society); 2. awareness (hope for better life, awareness of a possible identity beyond that of a “sick person”); 3. preparation (steps towards recovery, focus on one’s values, strengths and weaknesses, and connections with peers); 4. rebuilding (actively pursuing a positive identity, establishing goals and taking responsibilities); 5. growth (living beyond disability and being resilient in the face of setbacks (Andresen et al., 2003), or aiming for community integration and successful occupational performance (Leamy et al., 2011)).

In psychiatric rehabilitation, work is often viewed as a vector of recovery, as well as an outcome. Work, whether or not paid, entails several components that are fundamental to recovery, as it provides people with the opportunity to make a contribution, to develop a sense of achievement, or to establish social contacts (Blank, Harries, & Reynolds, 2011). However, the most appropriate approach to vocational rehabilitation remains a matter of debate. Initial models consisted of prevocational programmes, which aimed to assist people with mental disorders in acquiring basic work and social skills in a safe environment, before getting a
Mental health recovery on care farms and day centres

competitive employment (the so-called “train-and-place” philosophy) (Corbiere & Lecomte, 2009). Examples of such models are transitional employment, hospital-based programmes, or sheltered workshops (Boardman, Grove, Perkins, & Shepherd, 2003; Creegan & Williams, 1997; O'Flynn, 2001; Propst, 1992). Prevocational programmes were criticised for their low rates of transition towards the competitive labour market (van Erp et al., 2007). More recent models favour a rapid job search and placement on the competitive market, followed by training on the job, with individualized support and counselling (the so-called “place-and-train” philosophy) (Corbiere & Lecomte, 2009). Examples are the Individual Placement and Support model initially developed in the USA (Drake et al., 1999), which showed very promising results (Bond, Drake, & Becker, 2008; Burns et al., 2007) and was consecutively adopted and adapted in Europe, Australia and Canada.

In light of these findings, prevocational programmes are gradually abandoned, in favour of the more recent, evidence-based, approaches. However, arguments for the prevocational programmes do exist, as suggested by a systematic literature review, which showed that basic work and social skills could be the very ingredients needed for advancing vocational rehabilitation of people with mental disorders (Michon, van Weeghel, Kroon, & Schene, 2005). In other words, prevocational programmes might be needed to meet individuals’ social and occupational needs during particular stages of recovery. Given the fact that as many as 50% of people with serious mental disorder lack daily activities, and 80-90% are unemployed (Harnois & Gabriel, 2000; van Weeghel, 2010), the exploration of prevocational programmes in the context of mental health recovery remains relevant and of high priority.

The current study aimed to contribute to this debate by focusing on prevocational services provided by care farms in the Netherlands. Care farms are farms that aim to contribute to the well-being of people with various disabilities by involving them in normal farming activities (Hine et al., 2008). Care farms have been documented in countries throughout Europe (such as, Germany, Ireland, Italy, the Netherlands, Norway, Poland, Slovenia), as well as in the USA (Hassink & Van Dijk, 2006), but have only recently become the focus of academic interest. However, the use of farms and gardens has a long-standing tradition in mental health care. Historically, the large psychiatric hospitals commonly involved patients in working on surrounding farms and gardens (Frumkin, 2001; Hickman, 2005). With deinstitutionalization, the large psychiatric hospitals were transformed, the surrounding lands were sold (Ravelli, 2006), but farms and gardens continued to be used in mental health care, albeit to a limited extent. Currently, the Netherlands hosts the largest and most complex care farming movement (Haubenhofer et al., 2010), consisting of over 1,000 private care farms organized into regional and national networks (Di Iacovo & O’Connor, 2009). Although the old “institutional care farms” are still in use, the majority of care farms are private and maintain
links with the health care system: in 2005, it was estimated that more than two-thirds of all care farm users were people with mental disorders, and one third of all care farms reported that they collaborated with one or several mental health care services (Hassink et al., 2007).

Recent studies suggest that care farms might facilitate mental health recovery. Intervention studies conducted on farms showed that work with farm animals and gardening activities might play a role in decreasing the severity of depressive symptoms (Gonzalez et al., 2009, 2010; Pedersen, Martinsen, et al., 2012), in increasing self-efficacy (Berget et al., 2008a; Pedersen, Martinsen, et al., 2012), in developing coping skills and in improving work abilities (Berget et al., 2008a; Berget et al., 2011; Kam & Siu, 2010; Pedersen, Ihlebaek, et al., 2012). Explorative studies of the context that might facilitate such experiences showed that care farm users appreciated the ordinary nature of farm work (Elings & Hassink, 2008; Kam & Siu, 2010; Pedersen, Ihlebaek, et al., 2012), the community life and the presence of farmers (Elings & Hassink, 2008; Hassink, Elings, et al., 2010). A limitation of the qualitative studies on care farms is that none attempted to explore how the experiences of recovery of care farm users compare to those of users attending established rehabilitation services. Therefore, it remains unclear how care farms fit into the current prevocational services, and whether they bring any added value.

The current research aimed to analyse and compare experiences of mental health recovery on care farms and on established prevocational services, as perceived by their respective users, in order to assess if users make progress towards recovery, relative to the staged recovery model. In the context of the Netherlands, where the study was conducted, established prevocational services are represented by work projects and creative projects, provided at day centres. Work- and creative projects date back to the 1990s, when, similar to other Western countries, mental health care services in the Netherlands recognized the importance of supporting people with mental disorders in resuming meaningful roles. During that period, day centres were established throughout the country, with the aim of providing patients of the various mental health care services with opportunities for day spending, socializing and acquiring basic work skills (van Hoof, Katelaars, & van Weeghel, 2000). In time, the day centres became a standard prevocational programmes. In 2000, for example, 75 day activities centres were documented throughout the Netherlands, which represented nearly a three time increase relative to 1990 (Trimbos Institute, 2000).
Methodology

Research approach

Given the scarcity of research regarding the experiences of mental health recovery of participants on care farms and day care centres, we chose for a qualitative approach (Babbie, 1989) consisting of semi-structured interviews. In order to investigate if these prevocational services related to specific stages of recovery, we focused on three distinctive periods in the lives of study participants, taking the moment of attending the services as a reference point. Relative to this moment, the three periods were defined as: the period before attending the services; the period of formulating the goals participants hoped to achieve on services; and the period after attending the services.

Recruitment of study participants

We used purposeful, maximum variation sampling (Patton, 2002) to select care farms and day centres of different size, location and type, in order to best capture the nature of these services. Recruitment was organized in two stages. First, participating services were selected from the online directories of care farms\(^5\) (Federatie Landbouw en Zorg, 2009) and of mental health organizations\(^6\) (GGZ Nederland, 2009b). According to these directories, their coverage of care farming and mental health care sectors is close to 90%. Care farms and day centres were included if they provided day services for people with mental disorders within a specific region, chosen for logistic reasons; specialized services (such as addiction-, forensic psychiatry- or religious care farms or day centres) were excluded. This strategy yielded 32 care farms and 6 day centres. In a second stage of recruitment, the identified services were invited to participate and distribute an information flyer to their users. Interested service users were included, provided that they were older than 18 years and their presence in the services was related to mental health problems. This strategy led to a total of 14 participants on 13 care farms and 12 participants in 6 day centres (7 on work projects and 5 on creative projects).

Procedures

Data for this study were collected between March and August 2009. Study participants were interviewed in private locations arranged at the services they attended. The interviewer

\(^5\) Federation for Agriculture and Care (in Dutch: Federatie Landbouw en Zorg)

\(^6\) Professional Association for Mental Health and Addiction (in Dutch: Vereniging Geestelijke Gezondheidszorg Nederland)
Chapter 6

provided additional information about the study, clarified any questions and emphasized that participants could withdraw at any time during the interview. Informed consent to audiotape the interviews was obtained from all participants.

Interviews were conducted according to a manual and consisted of three sections. Two sections dealt with the period before attending the services, and aimed to clarify why participants attended the services (“Life before attending the services”) and the changes they hoped to achieve (“Goals”). A third section of the interview referred to participants’ experiences with the services (“Life after attending the services”). Given the common goal of the included services to provide day activities and social interactions, we collected data on both domains. We asked participants to provide an overview of their occupations on services, including both active and passive ways of spending time, and to describe how they experienced these occupations. The overview was obtained by asking participants to list each occupation on a separate card, and to order the cards according to their preferences. Similarly, we explored the social domain using visualization diagrams, projective instruments in which symbols are used to “represent living entities within a defined life space” (Barker, Barker, Dawson, & Knisely, 1997). We asked participants to write on a separate set of cards the names of the people they came in contact with at the service and to place them on the table closer or further away from a symbol which represented themselves, to account for closer or more distant relationships. The two sets of cards covering the occupational and the social domains served as starting points for in-depth discussions. The interview also included a ten-item socio-economic questionnaire.

Data analysis

All interviews were transcribed verbatim. In order to protect participants’ identities, their names were replaced by unique research IDs. The transcripts were read several times by the first and second authors, who independently explored the meanings conveyed by each interview and thereafter discussed their interpretation. Data analysis was conducted with specialized software (ATLAS.ti), using an integrated approach. This included first the identification of the three main themes described above: “Life before the service”, “Goals” and “Life after attending the services” (deductive approach). Subthemes were further identified as they surfaced from the data, through an inductive approach. This consisted of three phases. First, we identified, named, categorized and described the concepts found in the interview transcripts (open coding); thereafter, we related codes to each other, thus generating subthemes (axial coding); and finally, we related the subthemes to the main themes, thus developing the storyline (selective coding). The occurrence of subthemes was summarized
across interviews, and tables were developed to track the analysis process. These were continuously verified against the interview transcripts, in order to check if the interpretations remained true to participants’ experiences. Quotes from the interviews were translated from Dutch to English by the first author and reviewed by a native speaker. Quantitative analysis (chi-square test for categorical variables and the Kruskal-Wallis non-parametric test for continuous variables) was performed with SPSS 17.0.

**Ethical considerations**

The study was reviewed by the Ethical Review Board at the VU University Medical Centre. Ethical considerations were addressed through the following strategies. During the data collection, study participants were interviewed in private locations arranged at the services they attended. The interviewer provided additional information about the study, clarified any questions and emphasized that participants could withdraw at any time during the interview. Informed consent to audiotape the interviews was obtained from all participants. During the data analysis, participants’ names were replaced with unique research IDs, in order to protect participants’ identities.

**Results**

**Research settings**

The 13 care farms included in the study were located in two provinces. One care farm was owned by a mental health organization, and employed a farmer and several professional activity supervisors for the guidance of users. The 12 remaining care farms were all privately owned and run by farmers and their families, who had provided day services for an average of 5.2 years (range between 3 and 8 years). The main activities on the private farms were agricultural production (n=9), training of users for integration into the labour market (n=2) and daytime activities for people living under supported housing (n=1). On the 12 private farms, supervision was provided by farmers (n=3), by farmers previously trained as mental health nurses or social workers (n=4), by professional activity supervisors (n=3) or by both trained farmers and professionals (n=2).

The 6 day centres were located in urban areas. Each provided both work projects (assembly lines, carpentry shops, computer repair centres, bicycle repair shops) and creative projects (painting, drawing, sculpture, ceramics, and textiles). All activities were assisted by
professional supervisors. During breaks, users could socialize at the centres’ cafeterias or in the inner court.

Participants

Our sample consisted of 14 participants on care farms and 12 participants in day centres. Day centre participants attended either work- or creative projects. Therefore, in the analysis we differentiated among three groups: care farm participants (n=14), work project participants (n=7) and creative project participants (n=5). Their characteristics are summarized in Table 6.1.

The mean sample age was 42.5 years (SD=11.6) and the majority of the participants were male (n=16, 61.5%). Groups were overall comparable in terms of level of education, employment status and income received from social benefits. However, they differed across several characteristics. The oldest participants were those on creative projects (mean: 48.6 years, SD=7.4 years), followed by those on work projects (mean: 44.0 years, SD=9.3) and by those on care farms (mean: 39.6 years, SD=13.3). Males were predominant on care farms and on work projects (64.3% and 71.4% respectively), but not on creative projects (40.0%). All participants in day centres were single. More than half of the participants on care farms and on creative projects lived independently; on work projects, most participants chose not to disclose their housing situation.

In total, twelve participants disclosed their diagnoses; these included both common mental disorders (such as depressive and anxiety disorders), as well as severe mental disorders (such as schizophrenia and personality disorders). Due to the missing data, no comparisons could be made across the three types of services. In terms of service use, participants on work projects reported the highest number of weekly sessions (mean: 5.4, SD=2.3), whereas participants on creative projects the longest histories of service attendance (mean: 4.7 years, SD=6.0 years).

Given our interest in similarities and differences between services, we asked participants if they had ever attended other day services. Half of the care farm participants reported prior experience with day centres: six with work projects and one with a creative project (while being treated in a psychiatric hospital). Care farm participants with and without prior experience with day centres were similar in their personal characteristics. None of the day centre participants had ever attended care farm services.
Table 6.1.

Characteristics of study participants on care farms (n=14), work projects (n=7) and creative projects (n=5)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Care farms (n=14)</th>
<th>Work projects (n=7)</th>
<th>Creative projects (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-demographic characteristics</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (in years)†</td>
<td>39.6 (13.3)</td>
<td>44.0 (9.3)</td>
<td>48.6 (7.4)</td>
</tr>
<tr>
<td>Gender: males‡</td>
<td>9 (64.3)</td>
<td>5 (71.4)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>Partner: no‡</td>
<td>9 (64.3)</td>
<td>7 (100.0)</td>
<td>5 (100.0)</td>
</tr>
<tr>
<td>Education level‡</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- none or basic</td>
<td>5 (35.7)</td>
<td>3 (42.9)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td>- intermediary</td>
<td>7 (50.0)</td>
<td>3 (42.9)</td>
<td>3 (60.0)</td>
</tr>
<tr>
<td>- high</td>
<td>2 (14.3)</td>
<td>1 (14.3)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td>Employment status‡</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- unemployed</td>
<td>13 (92.9)</td>
<td>7 (100.0)</td>
<td>5 (100.0)</td>
</tr>
<tr>
<td>- no answer</td>
<td>1 (7.1)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td>Income (€/month)‡</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- 1000 or below</td>
<td>6 (42.9)</td>
<td>4 (57.1)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>- 1001-2200</td>
<td>2 (14.3)</td>
<td>2 (28.6)</td>
<td>1 (20.0)</td>
</tr>
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<td>- 2201-2400</td>
<td>1 (7.1)</td>
<td>0 (0.0)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td>- don’t know</td>
<td>5 (35.7)</td>
<td>1 (14.3)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td>Housing situation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- independent</td>
<td>8 (57.1)</td>
<td>1 (14.3)</td>
<td>3 (60.0)</td>
</tr>
<tr>
<td>- supported</td>
<td>4 (28.6)</td>
<td>2 (28.6)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>- missing</td>
<td>2 (14.3)</td>
<td>4 (57.1)</td>
<td>0 (0.0)</td>
</tr>
<tr>
<td><strong>Psychopathology‡‡</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common mental disorders</td>
<td>2 (14.3)</td>
<td>1 (14.3)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>Severe mental disorders</td>
<td>5 (35.7)</td>
<td>1 (14.3)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>No answer</td>
<td>7 (50.0)</td>
<td>5 (71.4)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td><strong>Characteristics of service use</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of sessions/week†</td>
<td>3.5 (2.7)</td>
<td>5.4 (2.3)</td>
<td>3.2 (1.9)</td>
</tr>
<tr>
<td>Years of service use†</td>
<td>2.2 (2.6)</td>
<td>2.5 (1.5)</td>
<td>4.7 (6.0)</td>
</tr>
</tbody>
</table>

Notes:
† mean (SD); ‡ number (%);
‡: none of the differences were statistically significant at p≤0.05
‡‡: self-reported; due to co-morbid common and severe disorders (n=1), percentages listed for participants on creative projects do not add up to 100%

In the following sections, we present the similarities and differences across the three types of services, for each of the three themes we explored (“Life before attending the services”, “Goals” and “Life after attending the services”). An overview of the results is presented in Table 2.

Life before attending the services

In describing their lives before attending the services, participants on care farms and in day centres referred to five subthemes. Most frequently mentioned was occupational disruption.
Chapter 6

Symptoms, such as hallucinations, inability to concentrate, or lack of energy, had affected participants’ functioning and ultimately led to interruption of their careers or, for the younger participants, educational pathways. In the words of a 24 year old participant on a care farm:

“I went to boarding school when I was 15 and I did my education there. (...) I have ADD (attention deficit disorder, our note) and borderline [personality disorder]. So these are two things that, well, when it comes to concentration and working the whole day, sometimes it doesn’t work out. I did my [vocational] education in construction and worked at a construction company. But at one point, well, you face problems because one day you are in [town 1] and the other day in [town 2], and well, that are too many changes. My boss wanted production and that was not possible. So I went to a carpentry factory nearby, in [town 3]. And there it went worse. More and more problems came up and then my boss said: can’t we better take action now and end it here? I thought he was right.” (Participant ID: 6)

With no jobs, participants felt they were becoming increasingly isolated at home. Isolation (second subtheme) also occurred because participants started to avoid social interaction, due to perceived difficulties in communicating with others, due to anxiety or to the anticipation that they would be perceived as different. As one man at a care farm explained:

“I have a history of social phobia. (...). And then, at some point in time, I started to lead a hermit life, under the guise of, I do not go out of the house anymore and I am not willing to be amongst people, I stay away from everyone.” (Participant ID: 5)

With all the time at hand, participants found it difficult to organize their lives by themselves. The third subtheme, lack of day activities, contained references to spending time at home passively, sleeping during the day or watching television for many hours, a life which provided little if any satisfaction. Because of lack of activities, some participants started to ruminate about their life situations or symptoms, which in turn aggravated their feelings of depression (fourth subtheme: preoccupation with disorder). One care farm participant was addicted to drugs, and two day care participants had been homeless for several years. They referred to a fifth subtheme of disorganized lives, and described chaotic or itinerant lives respectively, with little support from others and a permanent sense of failure.

“Look... I've been on the street and using since I was twelve. And under antipsychotics and so, all that kind of garbage, so that my whole life I haven’t done anything else but running after that garbage and always ending at the same point.” (Participant ID: 1)

Occupational disruption, isolation and disorganized lives (first, second and fifth subthemes) were mentioned by participants on both types of services. Lack of activities (third subtheme) was more frequently mentioned by care farm participants, whereas preoccupation
Mental health recovery on care farms and day centres with disorder (fourth subtheme) was described only by day centre participants (Table 6.2., section 1).

Table 6.2.

Qualitative comparison of accounts of participants

<table>
<thead>
<tr>
<th>Themes</th>
<th>Care farms</th>
<th>Work projects</th>
<th>Creative projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Life before attending the services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupational disruption</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Isolation</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Lack of activities</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Disorganized lives</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Preoccupation with disorder</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>2. Goals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Improving occupational functioning</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Having “normal jobs”</td>
<td>+</td>
<td>++</td>
<td>-</td>
</tr>
<tr>
<td>Social participation</td>
<td>++</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Managing symptoms</td>
<td>-</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Having “something to do”</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>Being in nature</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3. Life after attending the services</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transition from past to current lives as a progressive, non-linear process</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>Building internal motivation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- activities providing personal meaning</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>- deriving a sense of responsibility for one’s work</td>
<td>++</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>- possibility to adjust tasks to functioning / interest</td>
<td>++</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Undertaking various social roles</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- a sense of community, belonging, mutual acceptance</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>- family member, care taker, educator</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>- regular worker (in front of external visitors)</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Interacting with users</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- peer relationships appreciated</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>- peer relationships perceived as burdensome</td>
<td>+</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>- users as colleagues</td>
<td>+</td>
<td>+</td>
<td>++</td>
</tr>
<tr>
<td>- users as friends</td>
<td>+</td>
<td>+</td>
<td>-</td>
</tr>
<tr>
<td>Interacting with supervisors</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- supervisors perceived as supportive</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>- supervisors providing practical support</td>
<td>++</td>
<td>++</td>
<td>+</td>
</tr>
<tr>
<td>- supervisors providing emotional support</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>- supervisors enacting positive attitudes in life</td>
<td>+</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: ++ most accounts; + some accounts; - no accounts
Goals

Overall, participants referred to both general and specific goals. General goals included “having something to do” during the day, as a means of escaping the unsatisfactory lives they had described; or exploring the activities on the services (mentioned by one care farm participant). When participants formulated specific goals, these were related to five main subthemes.

A first subtheme revolved around occupational functioning, such as acquiring or retraining basic work skills (such as punctuality or ability to maintain the work rhythm), developing specific competences for future employment (as, for example, gardeners or computer instructors), or simply having a “normal job”. For example, a man on a work project said: “I wanted to give it a try to have a normal job again. Just to go to work every day again”. (Participant ID: 2)

A second subtheme referred to social participation. By attending day services, participants hoped to change their rapport with society, to transform a uni-directional relationship (receiving social benefits) into a bi-directional one (making a meaningful contribution, giving something in return). As one woman on a care farm declared: “I want to make myself useful. I don’t want to stay at home as a plant and receive social benefits. I want to have done something for it.” (Participant ID: 12) The third subtheme referred to interpersonal functioning: participants aimed to break the circle of isolation, to “be among people” and regain social competences eroded by the disorder. This is how a woman on a creative project described her goals: “I needed to get more confident and to trust people more, to become calmer and to have more structure ...” (Participant ID: 23)

The fourth subtheme related to managing one’s symptoms through distraction, and was described by participants who struggled with addictive or impulsive behaviours. In the words on a woman on a work project: “I am alone and if I have nothing to do I simply fall back, repeat my mistakes and go to the pub again (...) At some point, you have to try to get your life together (...) My aim is actually to stay here and work and not go to the pub.” (Participant ID: 25)

And finally, some, but not all participants on care farms referred to a fifth subtheme, being in nature, which related to an affinity for animals or plants, to the desire to be in the open air, or to a nostalgic feeling triggered by positive past experiences with a farm environment.

Our analysis identified several patterns related to the five subthemes described above (Table 6.2, section 2). Occupational functioning (first subtheme) was mentioned by almost all
participants on work projects, who consistently related it to having a normal job. By contrast, the participants on care farms who referred to this subtheme gave more varied descriptions. Social participation (subtheme two) was most frequently reported by participants on care farms who had previously attended day centres. Managing symptoms (subtheme four) was a goal only for participants in day centres, and especially for those on creative projects, who were also the most likely to describe the general goal of “having something to do”.

Life after attending the services: occupational domain

The visualization techniques provided an overview of the activities undertaken by participants on care farms and in day centres. On care farms, activities included gardening, feeding animals, mending tools, cleaning barns, helping in the kitchen or in the farm shop; in day centres, activities depended on the type of service, and included: restoring furniture, wrapping goods, organizing reception work, painting, making pottery or drawing. The analysis of activity cards revealed that most participants on care farms reported being involved in several types of activities (for example, on fields and with farm animals, or in the garden and in the kitchen). By contrast, most participants in day centres referred to a single type of activity, namely the one specific to the service. Overall, participants reported positive experiences with the services they attended, which they viewed in reference to the lives they had led before. Participants described two important aspects of the services that related to the occupational domain: the transition from past to current lives, as experienced after starting to attend the services, and how their presence on the services helped them advance in their recovery trajectories. These subthemes are detailed below.

Transition from past to current lives: a progressive, non-linear process. The transition from inactivity and isolation to the active schedules at the services proved to be a progressive process that took time, patience and commitment. During the initial period of attending the services, becoming active required that participants learned new skills, sustained activities for longer periods, and found a balance between the work demand and their own work capacity. In time, these efforts seemed to pay off, as participants on all four groups observed several changes: they had become physically stronger, could perform tasks easier, functioned better outside services, found it easier to communicate with others, had become calmer and more confident, and reported improved mood.

However, the process described above was not always a smooth one. Several participants on both care farms and day centres referred to periods of deterioration, when they felt tired, lacked motivation or did not want to interact with others. In the words of a male care farm participant:
“Sometimes you don’t feel well, and then you don’t want to sit here, grumpy and crossed” (Participant ID: 6).

On such occasions, participants were allowed to interrupt attending services, and remain at home until they were able to return again. Both users and service providers seemed to accept the fact that recovery was a long-term process, marked by setbacks and comebacks. As one male participant on a day centre explained:

“And then I just collapsed. My battery was drained by all those things. And I said to [the supervisor] that I would stay at home for a while. And I said: I’ll call again when I am over it. So I remained at home for a month or two. And he didn’t mind that because he knows that you come back.” (Participant ID: 20)

Resuming activities, and attending the services after periods of impaired functioning was, however, not easy. For some participants, however, these experiences became opportunities to realize the importance of their own determination in continuing the recovery process. As one woman at a care farm explained:

“I can also say: I stop with [going to] that farm. But then again I have nothing. What should I do then? Because then I lie in bed the whole day... That’s not a solution. So I simply pushed myself.” (Participant ID: 12)

Finding internal motivation. Remaining committed was, however, more than a matter of one’s own determination. Participants’ accounts indicated that their motivation to continue attending the services had three main sources: undertaking personally meaningful activities, engaging in activities that were useful to others, and knowing that activities they needed to perform could be adjusted to their levels of functioning.

Evidence for the former was found on care farms, work projects and creative projects alike. Regardless of the type of service, activities that were available yielded visible outputs, which were seen by participants as palpable proof of their abilities and competences. A clean barn, a functional bicycle or a painting everyone could admire made participants feel proud, self-worthy and satisfied, emphasized their strengths and created opportunities for positive self-appraisals.

Some participants on care farms and those on work projects described a second source of motivation: working towards end results that could be useful to others. On care farms, participants contributed to the farm production, and in doing so, interacted directly with animals and plants. The feedback they received on their work was direct and easy to observe: one participant described how impressed he was to see that the trees he pruned grew fruits, as an effect of his care. Another participant described how he saw animals reacting on his work in the barn:
Mental health recovery on care farms and day centres

“Participant: I really feel motivated to come here. You know? It’s not like, well - I don’t feel like working, no, that is not the case anymore (...) it’s more like – great, I have to work! [Interviewer: And where does this motivation come from?] Participant: From the animals, yes, from the animals. Animals have their own behaviour anyway. As soon as you come to visit them they start to jump and to kick with their hooves. When you come in the morning and begin to shuffle the hay, so that they can eat, then you see a sort of happiness... I don’t know... a sort of gratitude or so. I don’t know what it is, but they just notice that you, that you are there for them.” (Participant ID: 1)

Similar to participants on care farms, those on work projects also reflected on social responsibility and how their work contributed to others’ lives. However, although the products of work projects (such as furniture) were sold to external beneficiaries, the feedback received by participants was less obvious, and often remained abstract. Illustrative in this sense was the case of a man on a sweets wrapping unit, who described the following:

“I feel somewhat responsible. These products are also sold, in shops or in vending machines. Sunday I accidentally went to a place where they had vending machines with such products ... I sometimes think that maybe it’s me who wrapped them.” (Participant ID: 21)

We found no similar accounts on creative projects, where participants seemed to engage all their attention into exploring their creativity and focusing on their personal development.

The final source of motivation for participants to continue yielded from the knowledge that activities could be changed, so that they would match their changing levels of functioning. This was observed on care farms and in day centres, where participants could decide on the activities they completed each day, on their order and pace of completion. One man at a care farm exemplified this as follows: “Here, you can do everything at your own pace. You can make it as difficult as you want it, actually. On the days that you feel well you do more than on the ones when you don’t feel well.” (Participant ID: 6)

However, the two types of services differed in the choice of activities. On care farms, the environment presented more opportunities to switch between activities (for example, from taking care of animals to gardening or watching the farmer prepare farm products), so that participants could easily switch between tasks, according to their interests and levels of functioning. On work projects, however, activities related to a single activity type. Although participants also reported that they could choose to do different things, the variation seemed to be limited, as it involved, for example, switching from stapling folders to assembling or counting them, or to moving materials or cleaning the working place.

That work projects could not always provide an appropriate level of diversification was also confirmed by their ex-users. The 6 ex-users of work projects who now attended care
farms were rather direct in their narratives, and described the work in day centres as monotonous and intensive. In the words of one man: “Social work projects I didn’t enjoy so much... I found it monotonous work, because it was work on an assembly line. You always do the same thing. So I got a bit tired of it. The assembly line work is simply monotonous, you know, boring work.” (Participant ID: 3).

Life after attending the services: social domain

The visualization techniques showed that participants on care farms and day centres developed social networks of similar sizes (means of 7.7 and 8.6 contacts, respectively). On both services, the networks included other users and supervisors. Participants described the social domain across three main subthemes, which referred to how they related to others, and specified the roles played by supervisors and by other users. These are presented in detail below.

Undertaking various social roles. On care farms, participants also came in contact with farmers’ families, other farm employees and occasional visitors. This broader range of social contacts placed care farms participants in a variety of social roles, some of which they may have never experienced before. For example, 6 participants had regular and close interactions with the farmer’s children or parents, which made them feel as family members, informal caregivers or educators. For one care farm participant, an unexpected visit paid by pupils in a nearby school challenged him to consider his behaviour against social norms, renounce the patient role and assume, if only temporarily, the role of a regular farm worker:

“Just recently (...) we received the visit of two classes with sixty pupils, who came for an educational afternoon at the farm. I had no idea they were coming. (...) At first I tried, nevertheless, to isolate myself a bit from the crowd, to find a corner for myself. (...) And then I thought: I must look crazy. So at some point I decided to join the group and face the people, and so I went to visit the goats: now, which one is about to give birth, has the water broken already, is it a boy? Well then suddenly there are twenty children around you, and two supervisors and of course the farmer and one or two care farm users... (...) And then people come to you with questions, because they see you walking around in farm clothes, stained from farm work, anyway (...) so they think: hey, he works here, we can ask him questions.” (Participant ID: 5)

Supervisors: providers of practical and emotional support. The quantitative analysis of the visualization cards completed by participants for the social domain, presented in Table 6.3, showed that supervisors were perceived among the closest contacts by all participants on work projects, and by approximately half of the participants on care farms and on creative projects. Overall, supervisors were perceived positively by participants, and were mentioned
in relation to their ability to offer support. Two aspects were mentioned. First, supervisors provided practical support, sharing their knowledge, organizing work, provided guidance and feedback or simply working side by side with participants. In addition, supervisors offered emotional support, acting towards users as confidants for their problems, as friends or even as parent figures.

Table 6.3.
SOCIAL NETWORKS ON CARE FARMS, WORK PROJECTS AND CREATIVE PROJECTS (PERCENTAGES ADDED AS AN INDICATION)

<table>
<thead>
<tr>
<th>Social networks on services</th>
<th>Care farms (n=14)</th>
<th>Work projects (n=7)</th>
<th>Creative projects (n=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Closest contact</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor(s)</td>
<td>8 (57.1)</td>
<td>7 (100.0)</td>
<td>2 (40.0)</td>
</tr>
<tr>
<td>Service user(s)</td>
<td>7 (50.0)</td>
<td>3 (42.9)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td><strong>Second closest contact</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supervisor(s)</td>
<td>1 (9.1)</td>
<td>1 (14.3)</td>
<td>1 (20.0)</td>
</tr>
<tr>
<td>Service user(s)</td>
<td>4 (36.4)</td>
<td>3 (57.1)</td>
<td>2 (40.0)</td>
</tr>
</tbody>
</table>

Note: Due to the possibility to mention several persons as closest / second closest contacts, percentages do not add up to 100.

The comparative analysis indicated two major differences across services. First, we observed that the roles fulfilled by supervisors differed: on care farms, the provision of practical support was dominant, on work projects, supervisors provided both practical and emotional support, and on creative projects, the few participants who referred to close relations with supervisors reported mainly emotional support.

The second difference was qualitative in nature, and referred to the way supervisors were able to motivate and encourage users to maintain positive attitudes. On work- and creative projects, supervisors relied on verbal encouragements to promote positive attitudes in users, whereas on care farms, users could observe supervisors exercise such attitudes in everyday lives, and possibly could become inspired to adopt them. This difference is exemplified through the accounts of two men, the first one on a day centre and the second one on a care farm:

“[The supervisor] points out frequently that I should try to think positive, and not to dwell on the negative. I haven’t managed it completely yet, but that’s what she tries to get me to do.” (Participant ID: 17)
“I have, I could say, experienced a lot of drama in my life, and so I developed a depression switch. So I'm depressed almost chronically, instead of only during the winter. And well, from that perspective, that [the farmer] can express everything so nice, pays attention only to the good things, everything that’s negative you can leave behind you, or ignore it, lets it slide away... It works perfectly... you start to copy such an attitude automatically. That’s wonderful.” (Participant ID: 5)

**Service users: peers, colleagues, friends.** The quantitative analysis of the visualization cards on the social domain showed that service users were perceived among the closest contacts by approximately half of the participants on care farms and on work projects, and by one participant on creative projects. The qualitative accounts provided details on how participants related to other users. These relationships were summarized under three subthemes: peers, colleagues and friends. Relationships based on peer status were common in both services, and incorporated both positive and negative aspects. Positive aspects were described by participants in all three types of services, but especially by those on creative projects, who explained how the common psychiatric background created a sense of community, of belonging and of mutual acceptance. As peers, participants empathized with other users, and in turn did not worry that they would be perceived by others as different. As one female participant on a creative project put it:

“[I realized that] I'm not the only one who's crazy in this world, something I always thought. And precisely because I'm here with other people who have a psychiatric background with problems, even though these are completely different, but then you still have a certain link.” (Participant ID: 23)

Negative accounts of peer relationship were reported by all participants on work projects, and by the majority of participants on care farms with prior experience with day centres. They described the relationships based on peer status as burdensome: as peers, they argued, users were more likely to share personal problems, to constantly refer to situations related to mental disorders, and therefore to dwell on their patient roles. These participants avoided sharing their own problems with other users, and disliked it when other users brought up their issues.

A second way in which participants related to other users was as colleagues. As colleagues, the focus was on the tasks that needed to be done, which sometimes required that users needed to collaborate with one another. Some participants described that this facilitated communication, and made them more at ease when asking others for help. Collegial relationships were mentioned by some participants on care farms and on work projects, and by all participants on creative projects.
And finally, a small number of participants mentioned that they had become friends with other service users, and continued the relationship beyond the hours spent in services. Explanations as to why this happened in a minority of cases were found only for day centres: ex-users who now attended care farms reported that the high number of users, conflicts that sometimes broke out among users and the high turn-out of users made it difficult to find friends. This is how a woman at a care farm reflected on the time she had spent on a day centre:

“I spent some time there [at the day centre] too. That was at one point a bit disappointing, I was at one point a little reluctant to go there. (...) There was considerable turnover among the groups, and there was much disagreement among users, and arguments that were being fought... And well, I suffered from that.” (Participant ID: 14)

Discussion

This qualitative study aimed to analyse and compare experiences of mental health recovery on care farms, work- and creative-projects, as perceived by their respective users, in order to assess if users make progress towards recovery, relative to the staged recovery model. Our data showed that, across services, users had discovered personal meaning by engaging in the activities specific to the services they attended, felt integrated into and accepted by a community of peers and seemed to benefit from the presence of supervisors, as long as these provided emotional and/or practical support. The experiences mentioned by the participants in our study relate to the concepts of the staged-model of recovery (such as ignition of hope, awareness of a possible identity beyond that of a ‘sick person’, focus on one’s own strengths, connecting with peers, establishing goals and taking responsibilities). This represents an argument for the continued provision of prevocational services within a continuum of services, a strategy that could ensure a better match between the needs of individuals, in accordance with the recovery stage they experience.

Our results suggest that participants in our study had engaged in a trajectory of recovery, and successfully progressed through the first three stages (namely, moratorium, awareness, preparation) (Andresen et al., 2003). However, the ultimate stage of recovery (Leamy et al., 2011), and the goal of psychiatric rehabilitation (Rössler, 2006), is for people with mental disorders to achieve social integration and to assume active and independent roles in society. In our study, accounts related to community integration and to role identity were present across services. These two dimensions are represented in Figure 6.1. The horizontal axis opposes the two types of communities (namely, closed and open), whereas the vertical
axis contrasts the two role identities (namely, patient and worker) encountered in our study. The accounts of participants on the three types of services suggested that these occupied different positions relative to the two axes, and to the corresponding dimensions of recovery.

Figure 6.1. Schematic representation of dimensions of identity (vertical axis) and community integration (horizontal axis), as described by participants on creative projects, work projects and care farms

For participants on care farms, patient identity was expressed by experiences of fluctuating levels of functioning that interfered with their work. However, their accounts described how the farm environment accommodated limitations (namely, by providing opportunities to choose among tasks with various degrees of difficulty) and allowed them to remain active despite disability. In addition, the direct feedback participants received regarding the contributions they made to farm processes increased their motivation to continue and induced a sense of personal responsibility, thus helping them build new identities as workers. Care farm users fulfilled various social roles and engaged with a community of people with and without disabilities, which yielded experiences of community integration and social inclusion. This was especially true for participants who had transitioned to care farms from work projects.

By contrast, the accounts of participants on work projects focused more on disability, and described increased preoccupation with disorder and perceived need to manage
symptoms. However, they had relatively well-defined worker identities, as illustrated by their common goal of having normal jobs and by their high frequency of service attendance. While most participants appreciated the closed, protected character of work projects, which allowed a balance between the patient- and worker-roles, some participants avoided peer-based relationships and reflected on social responsibility (namely, contribution made to the lives of others). This suggested that some, but not all participants were ready to renounce their patient identities and to develop new ways of viewing themselves.

Participants on creative projects appreciated the company of peers and welcomed emotional support from supervisors, probably in relation to the relatively high levels of disability they described. They reported relatively long periods of service use (4 years, on average) and provided no reflections on issues related to social responsibility or to relationships with people outside the services they attended.

The results of the current study, illustrated in Figure 6.1, suggest that participants in the three types of services encountered different degrees of disability and were motivated by different goals. This observation invites the question of whether services attract participants in different stages of recovery, or whether they facilitate recovery differently. Studies on the transition of users across (pre)vocational services are scarce, but results suggest the prospects of users of creative and work projects remain limited. In the Netherlands, research suggested that transition rates from sheltered to competitive employment are relatively modest (5.0%) (Michon, Ketelaars, van Weeghel, & Smit, 1998). To our best knowledge, no study to date has investigated transition rates in care farm users. In this context, it remains an open question whether or not care farms fare better in assisting people with mental disorders achieve successful occupational performance in the labour market. Furthermore, van Lith et al concluded that, although users of art studios remain ambivalent about leaving the services and about their future prospects, these services might facilitate the development of self-reflection, clarity and perspective in an atmosphere of acceptance and mutual understanding among peers (van Lith et al., 2011). Similar findings led Mandiberg et al to suggest that the private sector (namely, social enterprises) might be better prepared to support people with mental disorders, by providing opportunities to engage into artistic careers (Mandiberg, 2012). These studies suggest that recovery can be multidimensional, and that spiritual and emotional aspects might also play an important role, at least for a group of users. However, these aspects are currently neglected by the staged-model of recovery. The experiences of the study participants in creative projects in our study add to the current literature regarding the added value of art-based interventions for mental health recovery (Makin & Gask, 2011; Mandiberg, 2012; Tjornstrand, Bejerholm, & Eklund, 2011; van Lith et al., 2011) and build the argument for further adaptations of the existing recovery model.
The notion that care farms might facilitate recovery has been suggested before. People with mental disorders participating in farm-based interventions in Norway and China appreciated the social and occupational aspects of the farm environment, as well as the restorative qualities of natural elements present on the farm (Gonzalez et al., 2009; Kam & Siu, 2010; Pedersen, Ihlebaek, et al., 2012). In our study, accounts of nature were less visible, and differences from previous research could be due to the different landscapes of the two countries, compared to the Netherlands. However, the similarities in findings of social and occupational benefits suggest that the farm environment transcends natural borders, thus rendering farm-based care as an internationally relevant service.

To our best knowledge, the current study is the first to undertake a comparative analysis between care farms and day centres. Although the study was conducted with relatively small groups, it provided rich qualitative data regarding variations on the experiences of recovery in these services. We acknowledge the possibility of bias due to self-selection into the study, which probably led to the inclusion of users with better levels of functioning; therefore, current findings might not apply to more severely disabled users. And finally, we encountered few, if any, negative opinions about care farms. Two explanations are possible. First, it is possible that the methodological choices we made (namely, including only current care farm users) created a bias by interviewing only participants who were more likely to continue attending care farms remain when satisfied with the services. Under this scenario, the accounts of participants who stopped attending care farms due to negative experiences were missed. Second, it is possible that care farms are viewed more positively by their users, and that negative experiences are less common. In the context of our study, the lack of negative opinions, either true or spurious, created an (overly) positive impression of care farm services, compared to day centres.

Further research is needed to address the limitations of the current study. For example, we recommend that future studies on care farms clarify if negative accounts regarding these services exist, how they compare to those on day centres, and how they could be used for improving services. Similarly, future quantitative studies are needed to test the findings from this qualitative study can be confirmed. In addition, the results of this study open new avenues for further research on prevocational services. For example, the finding that supervisors play such important roles in the experiences of the services invites a closer exploration of how service providers on care farms and on day centres promote individual progress towards recovery.
Conclusions

We conclude that the prevocational services analysed in this study (namely, care farms, work projects and creative projects) provide needed services for people with mental disorders who desire to engage in recovery. Users of these services appear to have progressed through the first three stages of recovery (moratorium, awareness, preparation). However, progression through the recovery stages of rebuilding and growth differed between users of care farms, work projects and creative projects. Creative projects allow for self-reflection and provide the comfort of peer support, but seem to remain closed communities with little prospect of transition to other services. Work projects provide regular, structured, close to “normal” jobs, but cannot fulfil their users’ need for social participation. Organized as open communities in real-life settings, care farms facilitate the reflection on personal and social responsibility, and therefore have the potential to create strong internal motivation for change. Users of the different services encountered different degrees of disability and were motivated by different goals which gives some indication that the services are suitable for users with different profiles and that care farms are a useful addition to the established prevocational services. Given that care farms appear to be particularly strong in the facilitation of social inclusion and community integration, they might bring an added value for users who are still negotiating their commitment to recovery and aim to work in an open community in a real-life setting. Our findings regarding the value of care farms is consistent with research from other countries which has demonstrated their social and occupational benefits. However, given that care farms are a relatively new service, further research is needed to assess their value for people with severe mental disorders.

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Conclusions
Chapter 9. Conclusions and discussion

In this chapter, I present the conclusions of my research which was guided by the following main research question:

“In what way, and to what extent, can care farms play a role in mental health recovery and rehabilitation?”

In order to answer this question, the thesis first investigates recovery outcomes in anxiety disorders, and sets the first steps for further exploration of the potential need for psychiatric rehabilitation interventions in people with anxiety disorders. In the context of the thesis, results were expected to provide insights concerning the choice of target groups for care farm services, thus setting the scene for the further research on care farms (Part 1). The rest of the thesis concentrates on care farms. Part 2 aims to contribute to a better understanding of mental health recovery on care farms. Part 3 analyses care farm services and practices from a psychiatric rehabilitation approach. In this chapter, the results of the three parts of the thesis are summarized, and subsequently the main research question is answered. This is then followed by discussion and a reflection on methodological issues. The last section provides suggestions for future research on the use of care farms for mental health recovery and rehabilitation.

Summary of results

Part 1: Setting the scene: Recovery in common mental disorders

The first study (Chapter 4) sets the scene for the thesis as a whole by providing insights into recovery outcomes in people with anxiety disorders, with potentially relevant results for the choice of target groups for further research in care farms and for the field of psychiatric rehabilitation. The role of psychosocial rehabilitation interventions in severe mental disorders is well-established (Rössler, 2006), but, for common mental disorders (such as depressive and anxiety disorders), this role is still debated. The study in Chapter 4 aims to contribute to this debate by analysing the relationship between functioning and symptom remission in people suffering from anxiety disorders.

The study was conducted using a sample of 1156 participants derived from the Netherlands Study of Depression and Anxiety (NESDA), of which 971 were diagnosed with anxiety disorders, and 585 were healthy controls. At baseline, participants with anxiety
disorders functioned significantly worse than healthy controls, with most impairment reported in occupational functioning (household and work), interpersonal functioning and participation in society. Among participants with anxiety disorders, we differentiated between those who reached clinical remission during the 2-year follow-up period (remitting anxiety group, n=385, 39.6%) and those who did not (chronic depression group, n=586, 60.4%). The analysis of baseline characteristics further showed that participants with remitting anxiety disorders were less severely ill than those with chronic anxiety disorders, tending to exhibit later onset of anxiety disorders, less severe symptoms, less co-morbid anxiety, fewer depressive disorders and less alcohol dependence. Not surprisingly, they also functioned significantly better than those with chronic anxiety disorders, but significantly worse than healthy controls.

During the follow-up, participants with chronic anxiety disorders reported small improvements in functioning which may have been a consequence of the treatments they received. Participants with remitting anxiety disorders reported moderate improvements in overall functioning across three domains: interpersonal functioning, participation in society, and cognition. At the end of the follow-up period, 45.8% of participants with remitting anxiety disorders reported functioning scores similar to healthy controls, whereas 28.5% still functioned at the level of those with chronic anxiety disorders. Impaired functioning was predicted by severe anxiety disorders, use of psychological treatment, co-morbid depressive disorders and maladaptive personality traits.

Part 2: Mental health recovery on care farms

The second part of the thesis focuses on services users and approaches mental health recovery on care farms from two perspectives: outcomes research and personal narratives. The outcomes research perspective is problem-oriented, and focuses on the limitations of people with mental disorders. These limitations are imposed by symptoms or are associated with impaired functioning. Therefore, studies conducted from this perspective often relate to the need for interventions that could successfully address limitations, and help people recover from mental disorders. The personal narratives perspective is person-oriented, and focuses on the personal journey of recovery, as experienced by people with mental disorders. Therefore, studies taking this perspective refer to recovery within and beyond mental disorders, and describe how people with mental disorders adapt to the new status quo, learn to find personal meaning, and live fulfilling lives despite the limitations associated with the mental disorder.

The second part of the thesis begins with a systematic review of the literature on farm-based interventions for adults with mental disorders (Chapter 5). As no previous study has
ever taken such an approach, it provided important background for the further study of care farms. The Preferred Reporting Items for Systematic Reviews and Meta-Analyses standard (PRISMA) was followed (Liberati et al., 2009). A search for English language literature published before May 2012 was conducted on three electronic databases. It generated 753 articles, of which 11 met the eligibility criteria. The 11 articles reported the results of five studies conducted in three countries. Although the articles approached farm-based care from different theoretical perspectives, favourable effects were identified in terms of clinical status variables in patients with treatment-resistant depressive disorder and in patients with schizophrenia. Assessment of functional outcomes was limited and yielded conflicting results. However, participants experienced improvements in social contact and in social and occupational skills. Qualitative accounts also revealed that, on care farms, users found new personal meaning, developed a positive sense of identity, learned to deal with disability and discovered new ways to view themselves and their life.

Next, a qualitative study (Chapter 6) analyses and compares experiences of mental health recovery on care farms and on day centres in the Netherlands, based on semi-structured interviews with 26 service users. Care farms, work projects and creative projects were found to empower users to leave behind inactive, isolated or disorganized living. Users of care farms aimed for daytime occupations and closer contact with society. They experienced care farms as open, real-life work settings where they connected with people with and without disability, felt personally responsible for the work done, and were motivated to continue attending care farms despite the challenges posed by disability. Users of day centres provided different accounts. Those on work projects focused on occupational functioning, and regarded their activities as regular jobs. However, some struggled with the patient culture of a closed peer community, and missed closer links to society. Users of creative projects seemed to be engaged in a more inward journey. They lacked goals related to the outside world (such as, for example, community integration or successful occupational performance), experienced high need for emotional support, and focused on self-reflection and personal development.

Part 3: A psychiatric rehabilitation approach to care farm services and practices

The third part of the thesis analyses care farm services and practices from a psychiatric rehabilitation approach, investigating two perspectives: the system / transformation perspective, and the service provision perspective. The system reform perspective on rehabilitation dates back to the 1990s when mental health care systems in the Western countries became conversant with the concept of mental health recovery and started to
incorporate it into services. A softer, more contemporary version of this perspective is represented by the **system transformation** perspective which is focused on the most effective ways to organize and deliver services. The **service provision** perspective relates to the operationalization of the recovery concept and redefines the roles and responsibilities of mental health care professionals. They are expected to adopt facilitative and enhancing roles, rather than directive or paternalistic ones (Sowers, 2005) and to reach beyond the organizational realm into the environments in which people with mental disorders live (Rössler, 2006) in order to promote their equal citizenship and to support their (re)integration into society (Le Boutillier et al., 2011; Slade, 2012; Ware et al., 2007).

The studies presented in the third part of the thesis were conducted at the interface between mental health care organizations and care farms. The overview of the English literature on care farms, presented in Chapter 2 (Table 2.2. and Figure 2.2.) suggested that no such studies had been conducted before.

Given the absence of previous studies, we undertook a mixed-methods study (Chapter 7) to analyse the characteristics of the services provided on care farms for people with mental disorders in the Netherlands, and to explore their organization, the rehabilitation process, and the link with family members and local communities. Analysis of 214 care farms revealed that institutional care farms (comprising 88.8% of all care farms) were significantly larger and older than private care farms (comprising 11.2% of all care farms). Furthermore, the five case descriptions (selected from 34 interviews) suggested that, from a psychiatric rehabilitation approach, contracted care farms represent a promising model because they appear to combine the advantages of older institutional care farms (where professional supervision is available to help users to develop work and social skills and to transition towards the labour market) with opportunities for small-scale services in close contact with local communities. Furthermore, since they make use of resources already present on farms, contracting private care farms might also help mental health care organizations reduce costs. However, independent, private care farms are also promising because they select users that are relatively less impaired. In theory, these users might have a greater chance of transition towards the labour market, but further studies are needed to support this hypothesis.

The next study considers how the addition of farmers to mental health teams raises questions regarding the development of collaborations between rehabilitation professionals and non-professionals in rehabilitation (Chapter 8). Despite some positive first impressions noted in the literature (Berget et al., 2008b; Berget & Grepperud, 2011; Hassink, Elings, et al., 2010), little is known about how rehabilitation professionals experience collaboration with care farms. This knowledge gap was addressed through using a qualitative approach by exploring the benefits and challenges arising from these collaborations.
Conclusions and discussion

Analysis of the 28 semi-structured interviews conducted with rehabilitation professionals and care farmers depicted two essential developments that had paved the way for their collaboration: an increased focus on work and social integration of people with mental disorders (for the former), and the economic developments in the agricultural sector that threatened the sustainability of farms (for the latter). Furthermore, we found that, for rehabilitation professionals, the collaboration with care farmers broadened the range of services they could offer, and provided low-entry work opportunities in green spaces where stigma and discrimination seemed a lesser issue than in other settings. For care farmers, the collaboration formalized referrals to their farms, and helped them establish themselves in a new field. However, collaboration was not always without difficulties, and challenges arose due to the fact that rehabilitation professionals viewed care farmers as newcomers whose lack of professional knowledge and skills, as well as perhaps an economically motivated agenda, jeopardized the goal of rehabilitation. On the other hand, care farmers thought that rehabilitation professionals were intruding into their practices.

Conclusions

The research presented in this thesis explored the potential role of care farms in mental health recovery and rehabilitation. Mental health recovery and rehabilitation are often discussed in the context of severe mental disorders (Rössler, 2006), but results of the first part of the thesis indicated that significant impairment in daily functioning may also occur in anxiety disorders (especially when associated with mental and somatic co-morbidity) and may persist despite symptom remission. These findings suggest that psychosocial interventions aiming to improve social and occupational functioning, and to increase social participation, are relevant for at least a proportion of people with current and past anxiety disorders.

The second part of the study focused on mental health recovery on care farms. Although the analysis yielded limited evidence regarding the effectiveness of farm-based interventions on mental health symptoms, it provided promising results for the use of care farms in treatment-resistant depressive disorders and in schizophrenia. Furthermore, the studies revealed that the open, real-life work settings of care farms, where participants became inspired, motivated and responsible for their work, might represent added value to the current rehabilitation services in the Netherlands.

The third part of the thesis presented a rehabilitation approach on care farm services and practices in the Netherlands. The analysis revealed that private care farms that collaborate with mental health care organizations provide small-scale, community integrated services,
where the availability of professional support and the presence of authentic farmers can help people with mental disorders acquire basic social and work skills, and transition towards other vocational rehabilitation interventions, or directly into the labour market.

Discussion

Part 1: Setting the scene: Recovery in common mental disorders

The first study presented in the thesis analysed the relationship between functioning and symptom remission in anxiety disorders. Here, two points are discussed: one relevant for the further study of recovery outcomes in anxiety disorders, and one relevant for the field of psychiatric rehabilitation.

The first discussion point focuses on the fact that, at the end of the 2-year follow-up, participants with remitting anxiety disorders were significantly impaired, compared to healthy controls. The persistence of significant post-morbid functional limitations (after controlling for co-morbid depressive disorders and alcohol dependence) can be explained by three scenarios. First, it could be an expression of co-morbid somatic illness and past depressive disorder, both associated with considerable debilitating effects (Alonso, Ferrer, et al., 2004; Wells et al., 1989). The adjusted analysis provided some support for this scenario. Second, it is possible that participants with remitted anxiety disorders had worse functioning than healthy controls even before the onset of anxiety disorders. This scenario is supported by previous research which indicated that the onset or recurrence of anxiety disorders is best predicted by impaired functioning (Rodriguez et al., 2005), a finding that was also replicated in this data set (Scholten et al., 2012). Similarly, research on depression has found that prior to the onset of depressive disorders, functioning is already impaired (Ormel et al., 2004), and that although post-morbid levels of functioning were similar to pre-morbid levels of functioning, they differed from non-depressed persons (Buist-Bouwman et al., 2004), suggesting that the functional limitations we found in remitted participants may be part of a pre-existing vulnerability. Under this scenario, the expectation that participants with remitting anxiety disorders would function at the same levels as healthy controls at the end of the 2-year follow-up period would imply that they would function even better at the end of the follow up than they did before the onset of the anxiety disorder. And third, it is possible that those who achieved symptom remission may still suffer from subthreshold symptoms, which seem to be persistent (Batelaan, de Graaf, Penninx, et al., 2010; Batelaan, de Graaf, Spijker, et al., 2010) and to cause functional limitations (Batelaan, N.M. et al., 2007; Rucci et al., 2003; Skapinakis et al., 2011).
The second discussion point is concerned with the relevance of findings for the field of psychiatric rehabilitation. Psychiatric rehabilitation aims to provide individuals with mental disorders with the skills needed for an independent life in the community (Anthony et al., 2002). People with mental disorders who receive psychiatric rehabilitation services typically have been diagnosed for more than two years and encounter important limitations in their daily lives, for example, in establishing and maintaining social relations, in finding and keeping jobs, or in fully participating in society (Farkas & Anthony, 2010; Rössler, 2006). In our study, participants reported anxiety disorder episodes with a mean duration of 22 years. Furthermore, at baseline, participants with anxiety disorders experienced significant limitations in household, work and interpersonal functioning, and in social participation. These limitations persisted throughout the follow-up period in those with chronic anxiety disorders and in a proportion of those with remitting anxiety disorders. However, the study could not specify the extent and the implications of these limitations or, in other words, whether or not the limitations were serious enough to demand psychiatric rehabilitation interventions. For interpersonal functioning, such insights could have been provided by assessing size and quality of social networks. For work functioning insights into the severity of impairments could have been provided by assessing work productivity (measured, for example, as long-term absenteeism or impaired work performance). However, since work functioning was assessed in employed participants, their limitations would be of more interest to the field of occupational health than psychiatric rehabilitation. For the latter, interesting insights could have been provided by investigating the extent to which participants with anxiety disorders left the labour market because of psychopathology, namely the extent to which anxiety disorders might lead to unemployment. Although our study did not provide definitive answers for these questions, it established a first step in the investigation of recovery outcomes in anxiety disorders, and opened new avenues for further research.

Part 2. Mental health recovery on care farms

The second part of the thesis approaches mental health recovery from two perspectives: an outcomes research perspective and a personal narratives perspective. In this section, the two perspectives are discussed in relation to the results of the research conducted on care farms.

Outcomes research perspective. The care farm environment was assessed from an outcomes perspective by several studies, reviewed in Chapter 5. Results indicated that the quantitative research on farm-based interventions presents a considerable heterogeneity in target groups (people with depressive disorders, with schizophrenia, or mixed groups), in
outcomes (clinical, functional and related to quality of life), and in farm-based interventions (farm animal-assisted, horticultural or therapeutic riding). Given this heterogeneity in study designs, no meta-analysis was possible, and therefore definitive answers related to the effectiveness of farm-based interventions could not be provided. However, the review found promising results for treatment-resistant depressive disorders and for schizophrenia. This suggests that, should care farms be used as treatments for mental disorders, referral should be based on severity, rather than diagnosis. This is in line with recommendations for psychosocial interventions in general, where criteria, such as duration of disorder (Farkas & Anthony, 2010), degree of functional impairments (Corrigan et al., 2008; Farkas & Anthony, 2010), or lack of response to low-intensity interventions (National Collaborating Centre for Mental Health (NICE), 2011) have been proposed. As a confirmation, participants interviewed in Chapter 6 had been diagnosed with both severe and common mental disorders, indicating that, in practice, use of care farm service is not restricted to a particular psychopathology.

Although the results of outcomes research on care farms were limited, the studies presented in this thesis have helped advance the field by identifying potentially relevant outcomes (and indicators) for further research on social functioning, work functioning and social participation. For example, one of the studies reviewed in Chapter 5 (Kam & Siu, 2010), as well as Chapter 6, indicated that care farm users experienced an extension of their social networks because they made new contacts and even friends. Furthermore, Chapters 6, 7 and 8 showed that social networks on private care farms can be diverse (including peers, farm employees, farm visitors, members of farmers’ families) and that the groups present on private care farms are relatively small (of approximately 8 people). These small groups seem to foster close interactions, indicated by the high level of group cohesiveness reported by one study included in Chapter 5 (Gonzalez et al., 2011b). They also appear to provide emotional and practical support (Chapter 6), and make communication easier (Chapter 6), thus potentially contributing to the development of social skills. Surprisingly, none of the quantitative studies included in the review assessed changes in interpersonal and social functioning.

Furthermore, the studies included in the thesis identified several potential indicators for assessing work functioning. For example, one of the studies reviewed in Chapter 5 assessed changes in working abilities (intensity and exactness) using video-recordings, with promising results (Berget et al., 2007). Another study included in Chapter 5 assessed changes in work behaviour using a structured, validated instrument, but found no significant improvements (possibly due to the short duration of the intervention) (Kam & Siu, 2010). The research we carried out on private care farms in the Netherlands suggested two important discussion points. First, the qualitative interviews reported in Chapter 6 showed that care farms can provide meaningful and diverse work tasks in a protected environment, in which users can start
assuming responsibilities and can build work motivation. Such basic work skills may be the ingredients needed for advancing vocational rehabilitation of people with mental disorders, together with social skills (Michon et al., 2005). Therefore, results of Chapter 6 suggest that the intrinsic characteristics of private care farms (such as the diversity of tasks, the possibility to contribute to farm production and the availability of direct feedback regarding the usefulness of their work) might make them suitable as prevocational services. Furthermore, results from Chapters 7 and 8 suggest that improvements in work functioning in care farm users could also be assessed by measuring the extent to which they (re)enter the labour market.

**Personal narratives perspective.** The literature on the person-oriented perspective proposes that people with mental disorders experience recovery as a process, a personal journey in which they adapt to a new status quo and learn to find personal meaning, despite the limitations imposed by the mental disorder. This process was summarized in five stages:

1. **Moratorium:** denial of the mental diagnosis, confusion, helplessness, withdrawal from society;
2. **Awareness:** hope for better life, awareness of a possible identity beyond that of a ‘sick person’;
3. **Preparation:** steps towards recovery, focus on one’s own values, strengths and weaknesses, and connections with peers;
4. **Rebuilding:** actively pursuing a positive identity, establishing goals and taking responsibility;
5. **Growth:** living beyond disability and being resilient in the face of setbacks (Andresen et al., 2003), or aiming for community integration and successful occupational performance (Leamy et al., 2011).

The thematic analysis of the qualitative accounts of participants in three farm-based intervention studies (presented in Chapter 5) suggested that the recovery process, as described in the literature, can also take place on care farms. For example, care farm users described how the interventions allowed them to accommodate disability while still engaging in recovery; find new meaning, redefined a positive sense of identity, and discover new ways to view life (Gonzalez et al., 2011a, 2011b; Kam & Siu, 2010; Pedersen, Ihlebaek, et al., 2012).

The analysis presented in Chapter 6 provides additional insights regarding the experiences of recovery on care farms, and allows reflection on the multi-stage model proposed in the literature. Users reported past experiences of social isolation, preoccupation with own disorder, occupational disruption and lack of activities, which fitted well into the first stage of the model described above (namely, moratorium). On care farms, users were building a new, positive identity, specific to the second stage of the model (namely, awareness).
Furthermore, they seemed to become aware of their potential, and were feeling connected with peers, a characteristics of the third stage (namely, preparation), much in accordance with narratives reviewed in Chapter 5. Such accounts were found not only among care farm users but also among those attending day care services, suggesting that both groups had engaged in a trajectory of recovery and had successfully progressed through the first three stages of the recovery process.

However, the transition from inactivity and isolation to the active schedules on services took time, patience and commitment. This was described as a progressive, non-linear process, in which periods of deterioration also occurred. Disability was still part of users’ lives, as showed by the fluctuating levels of functioning that interfered with work (care farm users), increased preoccupation with disorder and perceived need to manage symptoms (work and creative project users). Despite these similarities across services, we found important differences in how disability was managed. On care farms, users could choose from tasks with various degrees of difficulty which allowed them to remain active despite disability. Furthermore, users could observe how animals and plants prospered due to their work, which in turn helped them build motivation to continue and to take responsibility for the work done. In contrast, on work projects, activities could be monotonous and intensive, the peer relations could become burdensome (when they dwelled on patient roles and disability), and the need for social integration could remain unfulfilled. Users of creative projects appreciated the company of peers and welcomed emotional support from supervisors, probably in relation to the relatively high levels of disability they described. They reported relatively long periods of service use (4 years, on average) and provided no reflections on issues related to social responsibility or to relationships with people outside the services they attended. These differences suggest that care farms might better facilitate the fourth stage of the recovery process, by helping to build a positive identity, and by motivating users to take responsibilities.

The final stage of the recovery model in concerned with community integration and successful occupational performance. The cases presented in Chapter 7 suggest that community participation is possible on private care farms, especially when other facilities (such as cafés and shops) are present. Furthermore, the cases suggested that vocational rehabilitation could be a realistic goal for care farm users. However, these findings need to be confirmed on a larger scale before definite conclusions can be drawn. For other services (such as workshops), the literature on users’ transition towards the labour market is also scarce, but one study indicated that transition rates to competitive employment are relatively modest (5.0%) (Michon et al., 1998).

The recovery model, as proposed in the literature, seemed to fit relatively well users’ experiences on care farms and on work projects. These users were mostly men with a clear
Conclusions and discussion

focus on work, on practical, hands-on activities. For users of creative projects, however, the match between our data and the stages of the model was less obvious. For example, the model does not include experiences of self-reflection and personal development, reported by users on creative projects in our study (Chapter 6) and in other studies on art-based programmes (Makin & Gask, 2011; van Lith et al., 2011). In two of these three studies, female participants were predominant, and it is therefore possible that the differences we found between work projects and care farms, on the one hand, and creative projects, on the other hand, might reflect gender differences. In any case, our findings suggest that recovery is multifaceted, and that the current multi-staged model of recovery seems to neglect spiritual and emotional aspects that might also be subject to change during the recovery process.

Part 3: A psychiatric rehabilitation approach to care farm services and practices

The third part of the thesis approaches care farm services and practices from two psychiatric rehabilitation perspectives: a system reform / transformation perspective and a service provision perspective.

System reform / transformation perspective. The system reform perspective was reflected in the study presented in Chapter 8. The system reforms of the years 1980s, 1990s and 2000s were summarized by rehabilitation professionals interviewed as a chain of developments in psychiatric rehabilitation, including the organization of supported housing facilities (1980s), the establishment and growth of day activity centres offering daytime occupations (1990s); and the increasing focus on the provision of work opportunities and vocational rehabilitation outside mental health services (2000s). This focus is also reflected by the literature on psychiatric rehabilitation outcomes, which is increasingly concerned with finding, getting and maintaining jobs on the competitive labour market. High-quality studies (randomized-controlled trials) and systematic reviews of literature provide growing evidence for individual placement and support (Bond et al., 2008; Burns et al., 2007), thus questioning the value of prevocational services. However, the rehabilitation professionals interviewed in Chapter 8 seemed to experience significant difficulties in placing service users on the labour market, either because of limitations specific to this group, or because of the stigma facing people with mental disorders. Their choice for collaborating with care farmers seemed to be an endorsement of the need for prevocational services, where people with mental disorders could acquire basic skills that would allow them to transition to more structured vocational rehabilitation programmes.

The system transformation perspective was explored in Chapter 7. Farm-based services for people with mental disorders were founded by mental health care organizations
from 1948 onwards in order to provide work opportunities for their users. However, the large institutional care farms represent only a small percentage of the total number of care farms in the Netherlands and the reduction in number of these farms also took place in the past decade. In parallel, the number of private care farms is increasing. One possible scenario for this transformation is that mental health care organizations tend to outsource services not directly related to diagnosis and treatment of mental disorders. This scenario was confirmed by one of the cases presented in Chapter 7 which had outsourced the institutional farm to a foundation in order to reduce costs. This indicates that care farms could be also considered as partners in psychiatric rehabilitation for economic reasons.

**Service provision perspective.** This perspective was reflected in both chapters of Part 3. The cases presented in Chapter 7 provided first insights into how rehabilitation is provided on care farms, and how the presence of professional supervisors might influence this process. The results of the study led us to hypothesise that the closer the relationship between the mental health care organization and the contracted private care farm, the stronger the focus on structured, goals-and-plans approach, and on the transition towards the labour market. This hypothesis was confirmed (as much as qualitative data can provide confirmation) in Chapter 8, where rehabilitation professionals, as well as care farmers, identified such an approach as specific to a professional frame of reference, not necessarily reflecting how farmers would intuitively act.

On private care farms, both the strong focus on rehabilitation outcomes and the appreciation of the intrinsic characteristics of care farms seem to be important. Rehabilitation professionals engage in collaboration with care farms because the farms can offer small-scale, community-integrated services in a green environment, broadening the range of services offered by mental health care organizations. Contracted, private care farms seem to propose a new model of farm-based care that combines advantages of the older model of institutional care farms (namely, the availability of professional supervision that helps users to develop work and social skills and to transition towards the labour market) with the advantages of the newer model of private care farms (namely, small-scale services in close contact with local communities).
Methodological considerations: research approach and validity

Research approach

The research presented in this thesis employed quantitative and qualitative methods (as depicted in Figure 3.1.), an approach known as mixed-methods research. Throughout the thesis, the choice for methods was guided by the research questions and the series of five studies provided answers using quantitative (Chapters 4), qualitative (Chapters 6 and 8) or combined quantitative and qualitative research methods (Chapters 5 and 7), making it possible to formulate conclusions that would not be attainable by using only one method.

In Chapter 5, quantitative analysis permitted the assessment of clinical, functional and quality of life outcomes, whereas qualitative analysis permitted the exploration of participants’ experiences with care farms. The comparison of results from quantitative and qualitative research allowed the identification of outcomes that were mentioned by care farm users, but were under-researched or missing from the literature. This further guided the development of the study on processes of recovery on care farms (Chapter 6), in which social and occupational outcomes were explored in-depth and compared with those on day services.

In Chapter 7, quantitative and qualitative research methods were used to study the relationship between care farms and mental health care organizations in the Netherlands, to analyse care farm service characteristics, and to provide insights into organization of services on care farms, the rehabilitation process involved, and the relationships between care farms, families and local communities. The results of Chapter 7 were further explored, confirmed or enriched by means of qualitative research regarding the collaboration between rehabilitation professionals and service providers on care farms (Chapter 8).

Validity

Validity of qualitative research. In qualitative research, important issues of internal validity refer to the possibility that the researcher influences the study participants (reactivity), and introduces bias into data collection and analysis (researcher bias). The strategies used in this thesis to minimize the threats to internal validity were summarized in Chapter 3 and are discussed below.

The influence of researchers on participants can be reduced but never completely eliminated (Maxwell, 1998). In the context of the current research, it is conceivable that participants inferred the interest of researchers in the care farming environment, and tended to provide answers they thought would be in line with researchers’ interest. This issue was addressed by developing flyers with neutral information that concealed the specific research
interest for care farms, by developing and asking open questions, by probing the answers, and by avoiding the formulation of leading questions.

The possibility of researcher bias was minimized using several strategies applied at different stages of research. Before the data collection phase, the research context was extensively documented by reviewing the information made available online by the services where the interviews were conducted. During the data collection, the validity of information was checked with service providers. Furthermore, part of the interview was reserved for the collection of socio-demographic data, thus allowing the specification of the characteristics of the various study populations.

During data analysis, researcher bias was minimized by involving several members of the research team. Furthermore, the analysis was based on an integrated approach, in which themes were defined in advance (deductive approach). Thereafter, data was coded, labelled and analysed, and sub-themes were derived and linked to the themes. When needed, new themes were created (inductive approach). Sub-themes were described in terms of content (using quotes) and frequency (using simple numerical results and comparing them across participant groups). Furthermore, preliminary results of analysis were continuously verified against the interview transcripts in order to check if interpretations remained true to participants’ experiences. In addition, researchers who were not involved in the early stages of the study (namely, study design, data collection and data analysis) were invited to reflect on the data analysis process and on the results. And finally, preliminary results were presented and critically discussed with the academic community (during various international conferences, as listed in the section “About the author”) and with various stakeholders in care farming and in psychiatric rehabilitation (during project meetings or national conferences, as listed in the sections “Acknowledgment” and “About the author”).

One potential challenge for the validity of the qualitative research conducted in this thesis was the fact that the first author is not a native Dutch speaker. This issue was addressed by several strategies. The first strategy consisted of active involvement from the very first days. The author participated in exploratory, as well as in-depth interviews with users, service providers and other stakeholders, in order to become familiar with the environment of care farms and rehabilitation services, to interact with users, service providers and other stakeholders, and to develop an understanding of issues relating to care farm services. Furthermore, the author participated in workshops organized on the topic of care farms where impressions, as well as preliminary results, could be discussed with other researchers or practitioners.

A second strategy was concerned with data collection and analysis. In order to ensure validity of data, data were collected by native (Dutch) Master students who were trained and
tested on their research knowledge and skills. Students were closely supervised during all stages of their research by members of the research team, with the author of this thesis acting as a daily supervisor and joining interviews. Data analysis was conducted first by Master students, and then independently by the author of this thesis in collaboration with members of the research team. This process was possible only in the last two and a half years of the study, when the author considered her Dutch language skills and understanding of Dutch culture were adequate.

Another possible bias that could affect the external validity of results relates to the recruitment strategy in the qualitative studies. For example, in Chapter 6, self-selection of participants into the study might have led to the inclusion of users with better levels of social functioning, who could better communicate their experiences to people they never met before. Therefore, processes of recovery described in this chapter might not apply to more severely disabled users.

The external validity of the qualitative research presented in this thesis relates to the extent to which results apply to care farms in the Netherlands and are recognizable for non-academic stakeholders. An additional discussion point refers to whether the findings are generally applicable to care farms in other countries.

In order to ensure external validity, the research team conducted a large number of exploratory interviews and interacted with a variety of non-academic stakeholders (users, members of users review boards, practitioners, rehabilitation professionals, managers and other staff members of intermediary organizations). For the in-depth interviews, the recruitment strategy aimed to include all three types of actors relevant for the care farm field (as summarized in Table 2.1. in Chapter 2), and to select care farms and day centres of different sizes, location and type, in order to best capture the nature of these services in the Netherlands. The qualitative research in this thesis included accounts of service users on care farms and day centres (Chapter 6), as well as accounts of rehabilitation professionals and of service providers on care farms (Chapters 7 and 8). Therefore, this approach can be considered successful in including the perspectives of all three types of actors. However, the majority of the care farms included in research were private and provided professional supervision (either by farmers previously trained or by professionals). The question that follows naturally, in relation to external validity, is whether the care farms included are representative of care farms in the Netherlands, or whether the study singled out a specific group of care farms, thus limiting the relevance of the study results for other types of care farms. Data published in 2009 by the Federation for Agriculture and Care (and analysed in Chapter 7) suggests that at least two thirds of all care farms employed professional supervisors (Federatie Landbouw en Zorg,
2009). This means that the study is relevant for a large proportion of care farms throughout the Netherlands.

The results highlighted here were related to the specifics of the services in the Netherlands. Studies conducted in different types of farm environments might propose other elements which were not present in our results. For example, studies conducted in Norway and China (and reviewed in Chapter 5) showed that people with mental disorders participating in farm-based interventions appreciated not only the social and occupational aspects of the farm environment as we also found, but also the restorative qualities of natural environments on the farm (Gonzalez et al., 2009; Kam & Siu, 2010; Pedersen, Ihlebaek, et al., 2012). This appreciation of the natural environment was less visible in our results (Chapter 6). It is plausible that these differences could be caused by the different landscapes of the three countries. However, the similarities in findings of social and occupational benefits suggest that the farm environment transcends natural borders, thus rendering farm-based care an internationally relevant service.

**Validity of quantitative research.** Quantitative research methods were used in Chapters 4 and 7. The data presented in Chapter 4 was collected by trained research staff, whose skills were periodically checked by the field coordinator. For Chapter 7, such quality protocols were not available, and therefore, triangulation strategies were employed. For example, the validity of data published online was checked in brief telephone interviews within a random sample of 24 care farms. The check related the variable “the number of daily placements”. Results showed that 60.9% of the 24 care farms reported the same number of daily placements as recorded in the online database. In the rest of the care farms, the difference ranged between 1 and 5 placements. Furthermore, triangulation was possible across studies: the fact that private care farms accommodate small groups of users (mean of 8) was confirmed by the results presented in Chapters 6, 7 and 8.

**Ethical considerations**

The current research was conducted keeping in mind the four considerations for ethical conduct of research with human subjects (Chapter 3), namely: informed consent, minimization of harm, anonymity and confidentiality. The strategies used throughout the research are discussed below.

All participants received written information regarding the studies in which they participated. Participants in the studies presented in Chapters 6, 7 and 8 received flyers with information describing the research and the background of the researchers involved in data collection, and providing contact details of the research team. All information was written in
an accessible style, in line with the guidance provided by the Medical Ethics Committee at VU University Medical Centre. Furthermore, researchers summarized orally this information at the beginning of each interview, and gave participants the possibility to ask questions and discuss any issues.

Participation in research was voluntary. This was made clear during the recruitment phase (as specified in flyers), as well as at the beginning of each interview, thus giving participants the opportunity to withdraw at any time, also during the interview. However, in the study presented in Chapter 6, recruitment was facilitated by service providers on care farms and on day centres, who distributed the study information flyers among their users. Although researchers exercised no direct influence on potential participants, thus preserving their self-determination, the potential influence of service providers during the recruitment stage cannot be excluded.

The research involved no interventions and was, therefore, expected to inflict little, if any harm on study participants. In the design phase, attention was paid to the development of interview manuals in order to limit the amount of time taken to complete the interviews, and to minimize the burden on participants. Originally, the research planned to assess changes in depressive and anxiety symptoms in care farm users, through validated interviews and other non-invasive methods, a design for which ethical clearance was granted. However, questions were perceived as sensitive, and seemed to cause some distress in participants. For this reason, the research focused on the part of the study design in which the interview section dealing with difficulties was kept to a minimum, and was followed by questions about goals participants had envisioned, thus allowing participants to provide more positive accounts. Also the use of visualization diagrams posed a challenge to some participants who initially found the method difficult to understand. By providing step-by-step guidance through this phase of the data collection, researchers ensured that participants were comfortable with the method. Furthermore, researchers informed participants that they could choose not to contribute to the visualization diagram.

Anonymity was protected by conducting interviews at private locations at services, where neither service providers, nor colleagues were present, and by assigning participants unique research IDs, which replaced their names. Confidentiality was protected by allowing access to data records only to the researchers directly involved in data collection and analysis.
Chapter 9

Recommendations for future research

Recovery from anxiety disorders

The first study in this thesis indicates that significant functional limitations can persist in people with remitting anxiety disorders. This suggests that the public health impact of anxiety disorders might continue after symptom remission. Future research could elucidate the mechanisms underlying the persistence of post-morbid functional impairments, and develop interventions that can facilitate better outcomes in this group. The current research suggests that care farms could also be included among these interventions.

Mental health recovery and rehabilitation on care farms

Care farms seem to hold great potential for mental health recovery and rehabilitation, and the studies included in this thesis helped identify several potentially interesting avenues for further research on this topic. As argued in Chapter 2, both outcomes research and personal narratives perspectives on recovery are needed, as they can complement each other and can enrich the understanding of findings. Therefore, my recommendation for future research on care farms includes an encouragement for researchers to undertake quantitative, as well as qualitative study designs, and to attempt to integrate findings.

Future quantitative studies on care farm users could contribute to the research on care farms by assessing potential changes in social and occupational functioning. In this endeavour, I recommend the use of validated instruments that cover multiple domains such as the World Health Organization Disability Assessment Schedule, WHO DAS II (Chwastiak & Von Korff, 2003). This would help increase comparability across populations and farm-based interventions, and would bridge research on care farms with other studies conducted within the field of psychiatric rehabilitation. Future research on care farms could also assess the degree to which care farm users make the transition to other rehabilitation services, or to the labour market, and the circumstances under which this occurs.

Furthermore, I recommend that future qualitative studies on users’ experiences of care farms incorporate model(s) of mental health recovery. This could help integrate findings into a broader, still developing literature, and thus define the place of care farms among other rehabilitation services. In addition, exploration of the proportion of and motivations of care farm dropouts could help further specify the groups of people that benefit most of care farm services.
Conclusions and discussion

Regardless of study design, I recommend that future research carefully assesses care farm characteristics (for example, in terms of services, service organization, rehabilitation process and relation with local communities). We found that the care farming sector in the Netherlands is heterogeneous, and that specific characteristics, such as relationship with the mental health care sector, might influence the quality of services and outcomes. I consider that the research on care farms has gained sufficient momentum to undertake a more refined analysis, one that integrates the assessment of care farm characteristics into the interpretation of study results. In line with this argument, my final recommendation for future research on care farms in the Netherlands is to continue the exploration of the private, independent care farms. Should our hypothesis (namely, that this group holds great potential for vocational rehabilitation) be confirmed, it would open new avenues for the development of innovative ways to support the transition of users towards the labour market, while at the same time maintaining sustainable the care farm practices.

A glimpse into future approaches in mental health research

Research in the field of mental health has long stressed the high burden of mental disorders, which were found to be the leading cause of disability (Murray & Lopez, 1996, 1997). Many countries encounter difficulties in maintaining access to services due to economic stress and governmental priorities which do not include (mental) health. In light of these trends, it is often suggested that community mental health services with the involvement of community volunteers could provide alternative solutions with better results at lower cost than highly trained mental health professionals (Patel et al., 2010). It is against this perspective that care farm experiences, services and practices were analysed in this thesis. Although further research is needed, the results presented here allow for very interesting and positive conclusions on the potential of care farms specifically, and on the potential of alternative community-based solutions in general. It is my hope that such solutions are further developed, studied, better understood and integrated into current research agendas.
Chapter 10. Epilogue

Bridging the gap: using farms to enhance social inclusion of people with chronic mental disorders

Psychiatric services aim to help people with mental disorders improve their health and to facilitate their full integration and participation in society. Social integration has been defined as “a process, unfolding over time, through which [people with mental disorders] increasingly develop and exercise their capacities for connectedness and citizenship” (Ware et al., 2007). For this process to succeed, people with mental disorders need social, moral, and emotional competencies that underlie reciprocal interpersonal relationships, and the ability to assume responsibilities, similar to other members of society. Society can contribute to this process by providing opportunities where such competencies can be further developed and practiced (Ware et al., 2007).

Despite these theoretical insights, full integration and participation in society remain elusive goals for many people with chronic mental disorders. Challenges reside in the limited effectiveness of psychiatric, psychological and psychosocial interventions, and in the rejection of people with mental disorders by society. In this paper, we discuss the involvement of farms in the provision of services for people with chronic mental disorders. Farms where agricultural production is combined with service provision are known as care farms. In Europe and USA, care farms represent a developing phenomenon. In the Netherlands, for example, the number of care farms has increased from 75 in 1998 to more than 1,000 in 2009. Based on a limited, but potentially important literature, we argue that care farms serve as examples of socially-embedded practices that have the potential to enhance processes of social inclusion and participation of people with chronic mental disorders.

To illustrate our argument, we use the case of one of the most prevalent and burdensome mental disorders, for which current treatment options may remain suboptimal, namely major depression. A high proportion of patients with major depression do not achieve symptom remission, possibly as a reflection of the heterogeneity of the depressive syndrome (Østergaard, Jensen, & Bech, 2011). Even when depressive symptoms remit, social and occupational functioning might remain impaired (Romera et al., 2010), making it difficult for some patients to resume normal roles in society. And finally, even when people with major depression live and work in the community, stigmatization and discrimination from family
members, at the workplace, or in other social settings still act as barriers to a satisfying social life (Lasalvia et al., 2012).

In this context, novel approaches that could potentially improve mental health outcomes and social inclusion remain relevant and of high priority. To date, the effectiveness of farm-based interventions for people with major depression was evaluated only by a limited number of studies. Two small-scale studies found that participants with treatment-resistant depressive disorder working with farm animals (Pedersen, 2011) or involved in farm-based horticulture (Gonzalez, 2010) reported a significant decrease in the severity of depressive symptoms during the interventions. In addition, a randomized control trial with participants with schizophrenia showed a significant decrease in the severity of depressive symptoms for those involved in farm-based horticulture, compared to controls following standard vocational rehabilitation (Kam & Siu, 2010). Furthermore, participants in these studies reported improvements in social (Gonzalez, 2010; Kam & Siu, 2010; Pedersen, 2011) and occupational roles (Kam & Siu, 2010; Pedersen, 2011).

Although more research is needed, these findings suggest that care farms might offer a useful addition to the current possibilities for treatment of depressive symptoms, and could support processes of social integration and participation. But what could explain these preliminary findings? Participants in the three studies described above were asked to reflect on their experiences with the farm environment. In their accounts, they referred to a diversity of elements, such as involvement in an ordinary working life, distraction from illness, ability to choose between tasks (Pedersen, 2011); positive appraisals from peers and farmers, feeling socially included (Gonzalez, 2010); and being involved in pleasurable activities in nature (Gonzalez, 2010; Kam & Siu, 2010).

These three studies suggest that farm-based interventions might include a number of elements that are necessary for leading a fulfilling life in society. Indeed, care farms might provide a small-scale replica of normal socio-economic life. In the Netherlands, for example, many care farms are family-owned, provide services for relatively small groups of people and consider agricultural production as their main business. People with chronic mental disorders who have difficulties in (re)integrating in society might appreciate the meaningful, real-life work available on care farms, the diversity of tasks that engage attention and distract from problems, and the interactions with diverse social networks (peers, farm employees, customers and family members). Together, these elements seem to create an environment in which this group not only feels better and functions better, but also prospers. Indeed, positive experiences can be found in several qualitative studies conducted with participants on care farms (Pedersen, 2011), suggesting that they have clear ideas on what they consider helpful and useful.
This knowledge can serve as an important source of information for how current treatment options can be enriched through socially-embedded practices, such as care farms. For example, people with chronic mental disorders can provide their views and reasoning on whether psychiatric treatments and care farms could be sequenced, or provided simultaneously. This is consistent with recent research on the effect of combining mental health interventions or providing them in a step-wise approach. Further research could also investigate how the relation between care farms and psychiatric services can be conceptualized and institutionalized. These questions require the help of the different professions involved in service provision. Psychiatrists are already familiar with the use of farms from the old days of institutionalized mental health care, when the involvement of residential patients in agricultural work on farms or gardens was a common therapeutic practice. Contemporary farms differ from the farms and gardens of the previous age, and provide new opportunities to their users. Research on how psychiatric services could best make use of these opportunities could also be relevant for farmers interested in professionalizing their services, without losing the authentic strength that made their farms attractive in the first place.

Farmers, professionals and people with mental disorders who work on this agenda might be confronted by many challenges, as their different perspectives, knowledge and values might seem difficult to combine. However, transdisciplinary research provides a robust methodology to support such a process, and can be used to integrate the different types of knowledge in a transparent, reliable and valid manner (Regeer, Hoes, van Amstel-van Saane, Caron-Flinterman, & Bunders, 2009) that can inform the agenda proposed above. In future, care farms might play a role in broadening the spectrum of services, improving mental health outcomes, and bridging the gap with society.