

# **Sense of coherence and life satisfaction in people suffering from mental health problems**

*An intervention study in talk-therapy groups with focus on salutogenesis*

**Eva Langeland**



Dissertation for the degree of doctor rerum politicarum (Dr.polit)

at the University of Bergen

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Department of Public Health and Primary Health Care  
Section of Nursing Science

Norway, 2007

*When the river becomes too rapid and takes too many abrupt turns, I might wish that God had created me with butterfly wings. (Anne Grete Preus)*

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Eva Langeland

## **ABSTRACT**

**Background:** The increasing number of people who live in the community for many years with mental health problems (MHP) brings into focus the need for recovery within a coping, health promotion and life satisfaction perspective. Although the theory of salutogenesis provides generic understanding of how coping as a sense of coherence (SOC) may be created, and thus decisively determines the ability to recuperate, this theoretical perspective has not been explored sufficiently within research of people suffering from MHP.

**Aims:** The main aim of the present study was to increase knowledge about therapy and assessment of MHP in a health promotion and life satisfaction perspective. This was done firstly when developing salutogenic therapy principles; secondly, in a randomized controlled trial investigating the effect of these principles on coping (SOC) with MHP; thirdly, by exploring quality of life among people with MHP compared with the general population; and fourthly, by investigating the utility of SOC versus mental symptoms as predictors for life satisfaction development.

**Method:** The main sample consisted of 107 residents in the community who have MHP. In addition, a general population sample (n = 1893) was used as a comparison group for life satisfaction. The following different designs were used: a randomized controlled trial (Paper II), a cross-sectional comparative design (Paper III), and a prospective one-year follow-up design (Paper IV). The MHP sample answered a mailed questionnaire three times during a one-year period. The Sense of Coherence Questionnaire was used as a measure of coping, while life satisfaction was measured by the Quality of Life Scale, and the Symptom Checklist-90 was used for a description of the participants' mental symptoms.

**Results:** The results of this study show one way of developing salutogenic therapy principles. These were applied in talk-therapy groups and resulted in an increased SOC (the main outcome) among people with MHP compared with the control group. Further, the results reveal that the MHP group has significantly lower life satisfaction (corresponding to their high symptom load) than the general population, and that SOC can be identified as a predictor of change in life satisfaction over one year among people with MHP, as opposed to mental symptoms, which do not predict life satisfaction.

**Conclusion:** This thesis shows one way of developing an intervention based on a theoretical framework, the theory of salutogenesis, and the significance of interventions based on salutogenic therapy principles in people with MHP. Further, this study indicates that improving SOC might provide important opportunities to improve these people's low life satisfaction compared with the general population. Services for people with MHP should focus on enhancing SOC and life satisfaction, and on the role of SOC and life satisfaction as outcome variables in mental health care.

## ORIGINAL PAPERS

- I. Langeland E, Wahl AK, Kristoffersen, K, Hanestad BR (2007). Promoting coping: salutogenesis among people with mental health problems. *Issues in Mental Health Nursing*, 28: 275–295.
- II. Langeland E, Riise T, Hanestad BR, Nortvedt MW, Kristoffersen K, Wahl AK (2006). The effect of salutogenic treatment principles on coping with mental health problems. A randomised controlled trial. *Patient Education and Counseling*, 62: 212–219.
- III. Langeland E, Wahl AK, Kristoffersen K, Nortvedt MW, Hanestad BR (2007). Quality of life among people with chronic mental health problems living in the community versus the general population. *Community Mental Health Journal*, 43(4):321-339
- IV. Langeland E, Wahl AK, Kristoffersen K, Nortvedt MW, Hanestad BR (2007). Sense of coherence predicts change in life satisfaction among home-living residents in the community with mental health problems: a one-year follow-up study. *Quality of Life Research*, 16(6):939-946

## **1. INTRODUCTION**

Estimates of the prevalence of mental health problems (MHP) vary considerably, according to the methods and diagnostic criteria used. In Norway, it is estimated that 15–20% of the population has some kind of mental health problem; of the population aged 16–67, 3.1% receive disability pensions based on psychiatric diagnosis (Norwegian Ministry of Health and Care Services, 2005). Most of these people live in the community. During the past decade, psychiatric services have undergone a major transition towards community-based care systems, diminishing the role of institutions in the delivery of care and support (Hansson & Bjørkman, 2005). In Norway, mental health services changed dramatically from the mid 1980s and during the 1990s. The number of patients staying in psychiatric institutions has been drastically reduced, and most people with mental health problems now live outside institutions. Accordingly, the municipalities have a key role in the provision and coordination of services for people with mental health problems. However, provision of services has not kept pace with these developments and in 1998 the Norwegian Parliament adopted a National Programme for Mental Health, calling for major investments, expansion, and reorganization of the services (Norwegian Ministry of Health and Care Services (1997–2008). Of great value, and a central vision in this programme, is the strengthening of the users' position by emphasizing and increasing their participation in their own treatment and in society in general, thus increasing their coping ability and life satisfaction. This new approach and focus on the prevention and treatment of mental health problems is also clearly stated in the introduction of the WHO's Mental Health Declaration for Europe (2005, p.2): "We believe that the primary aim of mental health activity is to enhance people's well-being and functioning by focusing on their strengths and resources, reinforcing resilience and enhancing protective external factors" This development necessitates increased investment in interdisciplinary collaboration

when exploring treatment experiences based on positive mental health and life satisfaction concepts in people with MHP. Although health promotion is a central focus in society in general, this concept has had minimal presence in psychiatric services (Berger, 2003; Langeland, 2004). Mental health promotion and quality of life (QOL) perspectives allow people's broader life situations to be evaluated, rather than narrowly focusing on disease. These perspectives are rooted in postmodern public health and the realization of the Ottawa Charter in terms of salutogenesis (which focuses on the factors that create health) and quality of life (Lindstrøm & Eriksson, 2006). The concepts of coping and life satisfaction are well known in mental health science when it comes to studying people's own perception of, and their adaptation to, life with long-lasting mental health problems, because it has been increasingly recognized that one's self is an appropriate source of information on one's own coping and life satisfaction. It is essential to separate the biomedical view of disease from the way it is experienced by the person, as an individual's perception of the illness may have only a modest correlation with its medically defined characteristics (Hyland, 1992; Wilson & Cleary, 1995).

It has been claimed that traditional therapy for MHP has given too much attention to the feelings connected to earlier adverse life events, diagnosis, and medication, and too little to the future potential associated with a person's resources, coping, and life satisfaction (Bengtsson-Tops & Hansson, 2001; Judd, Frankish, & Moulton, 2001; Schofield, 1999; Seligman, 1998a, 1998b). The user perspective underlines this view (Ahern & Fisher, 2001; Powell, Holloway, Lee, & Sitzia, 2004; Watkins, 2001). A crucial understanding is that treatment is not just fixing what is broken; it is nurturing what is best within us (Seligman, 1998a).

Various new concepts and philosophies have emerged in the search for a complement to traditional therapy, such as positive psychology (Aspinwall & Staudinger, 2003; Snyder & Lopez, 2007), empowerment (Ahern & Fisher, 2001; Kendall, 1998; Schofield, 1999), resilience (Lindstrøm, 2001), self-determination theory (Ryan & Deci, 2000), and salutogenesis (Antonovsky, 1987, 1996). However, so far, health care resources have been spent primarily on special treatment and care, and to a lesser extent on community treatment and rehabilitation services. Even less funding is available for promoting mental health (WHO, 2001). This has resulted in a dearth of empirical evidence for treatment methods created within this new health promotion perspective. Subsequently, there is a need for research on mental health promotion including effective intervention programmes that focus on human strength and virtue (Robertson, Connaughton, & Nicol, 1998; Seligman, 1998a).

Because of structural and ideological changes, and the increasing number of people with MHP in the community, there is a call for increased knowledge about salutogenesis, coping, and quality of life with regard to MHP. Such knowledge could help mental health professionals to focus more on possibilities and on building on strengths rather than on limitations, and thus contribute to the use of people's own resources, on both individual and collective levels, to optimize quality of life.

## **2. AIM OF THE STUDY**

The aim of the present study was to investigate the interdisciplinary health-promoting theory of salutogenesis, including its central concept of sense of coherence, and a life satisfaction perspective, in the assessment and treatment of people suffering from MHP in mental health care. This was done by developing salutogenic therapy principles and an



intervention programme based on the theory of salutogenesis, and by measuring the intervention's effect on sense of coherence. Further, it was done by comparing quality of life between the MHP group and the general population and, finally, by investigating sense of coherence and mental symptoms as predictors of changes in life satisfaction.

The main objectives of the various papers comprising this study are:

1. Based on the theory of salutogenesis, to develop salutogenic therapy principles and an intervention programme designed to promote a sense of coherence among people with MHP (Paper I).
2. To explore, in a randomized controlled trial, the effect of salutogenic treatment principles on the sense of coherence of people with MHP (Paper II).
3. To investigate the quality of life of people with MHP in comparison with the general population, and how mental symptoms are related to quality of life in the MHP group (Paper III).
4. To compare the relative capacity of sense of coherence and mental symptoms as predictors of life satisfaction in people with mental health problems. (Paper IV). \*

### **3. MENTAL HEALTH**

#### **3.1. A positive mental health concept**

Mental health may be conceptualized in negative or positive terms. A negative conceptualization of mental health is based on the understanding that the absence of symptoms indicates good mental health. A positive mental health concept focuses on the presence of health-promoting factors, such as meaningful work and good relationships.

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\* The terms “quality of life” and “life satisfaction”, and the terms “treatment” and “therapy”, are used interchangeably.

Mental health is more than the absence or minimization of mental symptoms because states and capacities have value in themselves, according to the WHO's definition of mental health: "a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (WHO, 2001, p. 1).

One of the most famous researchers of the concept of positive health is Antonovsky, who defines positive health as a sense of coherence (Heikkinen, 2000), where the main focus is on the dynamic interaction between health-promoting factors and stressors in human life, and how to move people to the healthy end of the health continuum. A sense of coherence is proposed to be a significant variable in effecting this movement (Antonovsky, 1985). Mental health refers to a person's position, at any point in their life cycle, on "... a continuum that ranges from excruciating emotional pain and total psychological malfunctioning at one extreme to a full, vibrant sense of psychological well-being at the other" (Antonovsky, 1985, p. 274).

Antonovsky describes the movement on the continuum towards better mental health as shifting:

"... from the use of unconscious psychological defence mechanisms toward the use of conscious coping mechanisms; from the rigidity of defensive structures to the capacity for constant and creative inner readjustment and growth; from a waste of emotional energy toward its productive use; from emotional suffering toward joy; from narcissism toward giving of oneself; and from exploitation of others to reciprocal interaction" (Antonovsky, 1985, p. 274).

The concept of health has developed over time, becoming more and more directed towards the quality of life (Strandmark, 2007) and newer research in psychiatry focuses, to a large extent, on quality of life by strengthening positive experiences, rather than by limiting treatment to reducing or removing the illness or the symptoms (Næss & Eriksen, 2006). Quality of life assessments for people with sustained MHP have increasingly assumed an overall quality of life perspective, by assessing multiple life domains and including measures of functional status, access to resources and opportunities, and a sense of well-being (Lehman & Burns, 1996).

Næss & Eriksen (2006, p.39) show what mental health comprises in relation to quality of life measurements in the following figure:

		<b>MENTAL PROBLEMS</b>	
		<b>MANY</b>	<b>FEW</b>
<b>PLEASURES</b>	<b>MANY</b>	1. Many pleasures and many problems	2. Many pleasures and few problems
	<b>FEW</b>	3. Few pleasures and many problems	4. Few pleasures and few problems

Figure 1. Mental health in relation to quality of life

Quality of life research is searching for knowledge that may contribute to the reduction of problems and the increase of pleasures. Traditional mental health research has not made a distinction between Boxes 1 and 3, or 2 and 4. It has been aimed primarily at getting people out of Boxes 1 and 3, typically by conflating ‘disease’ and quality of life, by including symptom scales within the measures used to assess quality of life (Rapley,

2003). The aim of the salutogenic perspective may be understood as bringing so many people as possible into Box 2, with many pleasures and few problems, whereas sense of coherence is theorized to enhance coping and adaptation by the use of general resistance resources (GRRs), which effectively mediate the tension caused by stressors and ultimately reduce the number of stressful experiences (Landsverk & Kane, 1998), thus increasing life satisfaction. This is compatible with the salutogenic definition of mental health (Antonovsky, 1985) (cf. definition earlier in this chapter).

### ***3.1.1. Mental health promotion***

The core component of the principles of health promotion is suggested to be the combination of salutogenesis and quality of life, where salutogenesis is the process leading to quality of life (Lindstrøm & Eriksson, 2006). This point of view is consistent with the theoretical framework accounted for in Chapter 4.

Mental health promotion often refers to positive mental health and involves adopting an approach based on a positive view of mental health, rather than emphasizing mental illness and deficits. It considers mental health as a resource, as valuable on its own, and as a basic human right. It implies the creation of individual, social, and environmental conditions that enable optimal psychological development.

Realizing that mental health is more than the absence of illness can be helpful to people with MHP and their carers. Protective health resources and positive mental health can coexist with sometimes severe mental symptoms, for instance in people living with schizophrenia (cf. Figure 1, Box 1). This suggests the value of developing more comprehensive clinical approaches, with an additional focus on people's positive mental

health, such as their strengths, capabilities, and personal efforts in the recovery process. Assessing and building on strengths helps people to cope with MHP and to avoid being further diminished by it (Schmolke, 2003). Three health-promoting factors have been identified as important in the recovery process (Anthony, Cohen, & Farkas, 1994; Strauss, 1996). These factors are that participants: (1) perceive themselves as something other than just a diagnosis and a disease; (2) explore themselves with respect to their whole person; and (3) take control over their own lives.

From the health promotion viewpoint, it is necessary to intervene at three levels: (1) the individual level, in the form of guidance and help to participate actively in the healing process; (2) the staff level, in the form of creating healthy work conditions and the promotion of active participation in the creation of this work environment; and (3) the level of psychiatric services, in the form of promoting efficient communication structures within and among the various services. Through these levels the resulting concept of health promotion attempts to develop people's self-healing powers by identifying healthy aspects and possibilities, and by supporting them with coaching in active participation (Berger, 2003).

## **3.2. Mental health problems (MHP)**

### **3.2.1. Definition**

Mental illness may be defined and understood in different ways. For example, the biomedical definition describes a disease connected to a neurobiological functional defect or deficit; the psychodynamic approach, based on psychoanalysis, gives insight into how instincts and deep emotional needs may provoke symptoms such as anxiety, aggression, passivity, and inability to act; and social psychiatry sheds light on how conflicts between

people may create conflicts within people. The latter has led the way for important therapy forms such as family therapy and group therapy (Directorate for Health and Social Affairs, 2005).

In the present study, mental illness, mental suffering, mental disorders, mental problems, and psychosocial problems are conceptualized as *mental health problems*. This concept is used because it is less disease-focused and encourages one to keep in mind that, despite suffering from mental illness, there always is some level of health and resources present that can be recognized, utilized, and nurtured. It thus corresponds more to the positive mental health concept (Antonovsky, 1987; Berger, 2003; Thuen & Aarø, 2001).

This change in focus is also revealed in the Mental Health Services, in that the services have changed their name from Department of Psychiatry to Department of Mental Health. This change may be understood as an attempt to make the positive definition of mental health and its interdisciplinary focus more distinct and shift the focus from disease to health.

### **3.2.2. Prevalence**

The prevalence of MHP is increasing and 3.1% of the Norwegian population aged 16–67 receive disability pensions based on psychiatric diagnosis. In total, 0.4% suffer from organic disorders, schizophrenia, and schizotypal and delusional disorders, 0.2% from mental and behavioural disorders due to psychoactive substance use, 0.5% from mood disorders, 0.4% from mental retardation, and 1.5% from other mental disorders. This constitutes 30% of all people on disability pensions. An additional 0.6% of the population is on long-term sick leave because of a mental health condition. Three per cent of the adult

population visits a mental health outpatient clinic, and 0.8% receives treatment on an inpatient basis at least once a year (Norwegian Ministry of Health and Care Services, 2005).

Most people with MHP live in the community, and a number of those with long-lasting MHP have serious difficulties in achieving a satisfactory quality of life. Special attention has been given to this group, which requires coordinated services over a long period. In the National Action Plan for Mental Health, it is estimated that 0.75% of the adult population, or approximately 25,000, have long-term MHP and a need for mental health services in the community. In addition, 0.25%, or approximately 8000, have less serious MHP, but have a need for some mental health services in the community (Norwegian Ministry of Health and Care Services, 1997–2008).

### ***3.2.3. Treatment plans***

Making individual plans that coordinate necessary services has become a mandatory task for the services and a legal right for people with MHP (Norwegian Ministry of Health and Care Services, 2005). People with MHP have different needs; accordingly, individual plans have to be tailored for each person. However, in general, this is a vulnerable population that needs interventions that function as catalysts to increase their ability to cope with daily life by arranging housing, education, social integration, meaningful activities, such as art and culture, and physical activity. Often these needs are more important than focusing on symptoms, diagnosis, and treatment principles (Directorate for Health and Social Affairs, 2005).

However, a threat on the collective level to fulfilling the user's right to an individual and complete plan is that many countries, including Norway, have developed services with two separate paths, which may create problems with coordination. Only Italy has managed to overrule the position of the psychiatric hospitals and has solved this problematic fragmentation by establishing one Department of Mental Health in a specific area and thus avoided the two tracks. The emphasis on citizenship, and recognition of the user as a subject and participant in the creation of her or his own support programme, is essential (Serrano, 2006).

### **3.3. The mental health care profession**

Mental health care as a concept was introduced in Norway in accordance with the new Education in Mental Health Care programme (Norwegian Ministry of Church, Education and Research, 1998) and the National Action Plan for Mental Health (Norwegian Ministry of Health and Care Services, 1997–2008). The Education in Mental Health Care interdisciplinary programme includes in-depth study in the psychosocial dimension of mental health care and provides theoretical and practical bases for mental health care in community and institutional settings. Mental health care is based on the person's needs in both individual and collective perspectives. The professional mental health care worker needs a basic knowledge of MHP, such as the different perspectives used to understand MHP. It is important, however, to understand that knowledge depends on the situation and the perspective that is chosen. Knowledge from research on recovery shows that people with MHP may recover; this is an important perspective in mental health care (Directorate for Health and Social Affairs, 2005).



Norway's interdisciplinary programme in mental health care is built on the current national policy framework for mental health, established in 1998 (Norwegian Ministry of Church, Education and Research, 1998; Norwegian Ministry of Education and Research, 2005) and signifies a focus on health promotion, empowerment, normalizing, and coping; this has resulted in a change in role and focus for professional mental health workers. Mental health promotion in mental health care may work at three levels: strengthening individuals, strengthening communities, and reducing structural barriers to mental health (WHO, 2005). This involves a reorientation from the medical model to a more inclusive, holistic, health promotion approach.

It could be said that the professional mental health worker has a role as an expert in mental health generally. At the collective level, the professional mental health worker aims to develop structures that enable people with MHP to empower themselves, such as access to material and social goods. At the individual level, he or she aspires to be an expert and creates a conversational and interactional climate that will promote desirable change in participants. A fundamental attitude is that participants are perceived as experts on themselves and their unique situations and experiences, including their pain, suffering, and concerns. Subsequently, the professional mental health worker functions more as a dialogue partner, balancing between listening empathetically to participants' difficulties and taking into account their strengths and resources (Hubble, Duncan & Miller, 1999).

## 4. THEORETICAL FRAMEWORK—A HEALTH-PROMOTING PERSPECTIVE

### 4.1. The theory of salutogenesis

Aron Antonovsky (1979, 1987) created the concept of salutogenesis (the origins—*genesis*, of health—*saluto*) as a reaction to the one-sided focus on pathogenesis in health research. Table 1 shows an overview of the differences between salutogenesis and pathogenesis.

Table 1. An overview of basic assumptions of the pathogenic and salutogenic models

<b>Assumptions regarding:</b>	<b>Pathogenesis</b>	<b>Salutogenesis</b>
Self-regulation of the system	Homeostasis	Overcoming heterostasis
Definition of health and disease	Dichotomy	Continuum
Scope of the concept of health	Pathology of disease, reductionism Diagnosis	Recovery of resources, sense of coherence, holism
Causes of health and disease	Risk factors, negative stressors	Person's history Health-promoting factors
Effect of stressors	Potentially promoting disease	Potentially promoting disease and health
Intervention	Implementing effective remedies ("magic bullets")	Active adaptation, risk reduction, and resource development

Adapted from Bengel, Strittmatter & Willmann (1999), p. 32

The theory of salutogenesis gives a generic understanding of how coping as a sense of coherence may be created, and focuses on pathways that lead to successful coping and health. It thus represents a broader perspective on health than the opposing, traditional pathogenic orientation. It does not view health as a dichotomous variable but as a continuum, striving to explain what makes a person move towards the healthy end of that continuum and thus increase the sense of coherence and promote coping. It focuses on the story of the person rather than the diagnosis. The person is understood as an open system in active interaction with the environment (both external and internal conditions). The

theory understands tension and strain as potentially health promoting rather than merely creating illness, and focuses on appropriate challenges. The environment is the source of stressors and resistance resources. The theory stresses the use of the potential and/or existing resistance resources and not only focuses on minimizing risk factors but also emphasizes active adaptation as the ideal in treatment (Antonovsky, 1987). In addition to the main concept of *sense of coherence*, the theory identifies *general resistance resources* and *appropriate challenges* as core concepts.

### *Sense of coherence*

Sense of coherence (SOC) (cf. the conceptual definition given in Section 5.3.1) consists of the following three subdimensions: (1) comprehensibility—the cognitive component; (2) manageability—the instrumental or behavioural component; and (3) meaningfulness—the motivational or emotional component. The theory proposes that the stronger a person's SOC when confronted with a stressor, the more likely that the person will believe that the challenge is understood (comprehensibility) and that resources to cope are available (manageability) and be motivated to cope (meaningfulness). The third subdimension, meaningfulness, refers to the extent to which a participant feels that his or her life makes sense emotionally. The theory emphasizes that this component is the most important part of the SOC concept. When participants perceive at least some of life's problems and demands as worthy of commitment and engagement, they have a greater sense of meaningfulness and, typically, a greater sense of the other two components (comprehensibility and manageability) as well.

The theory identifies four spheres in human life in which people must invest if they do not want to lose resources and meaning over time: inner feelings; immediate personal

relationships; major activity; and existential issues (Antonovsky, 1987). This means that it is important to be able to form a view of life (ideological, religious, or political), to know people whom one perceives to be supportive (the function of social support), to have mental stability, and to be involved in rewarding everyday activities, such as work, sports, and education (Lindstrøm, 2001).

SOC is flexible rather than being constructed around a fixed set of dominant strategies such as the classic coping strategies (Antonovsky, 1993b). It is suggested that SOC functions as a 'sixth sense' for survival and generates health-promoting abilities (Lindstrøm & Eriksson, 2006).

#### *General resistance resources*

The theory has identified general resistance resources as crucial in the development of an SOC. A general resistance resource (GRR) can be defined as any characteristic of the person, group, or environment that can facilitate effective tension management. The theory emphasizes ego identity and social support as the most crucial GRR. Figure 2 shows the GRRs (Langeland, Bauge, Grung, Hjelmeland, & Litsheim, 2000):

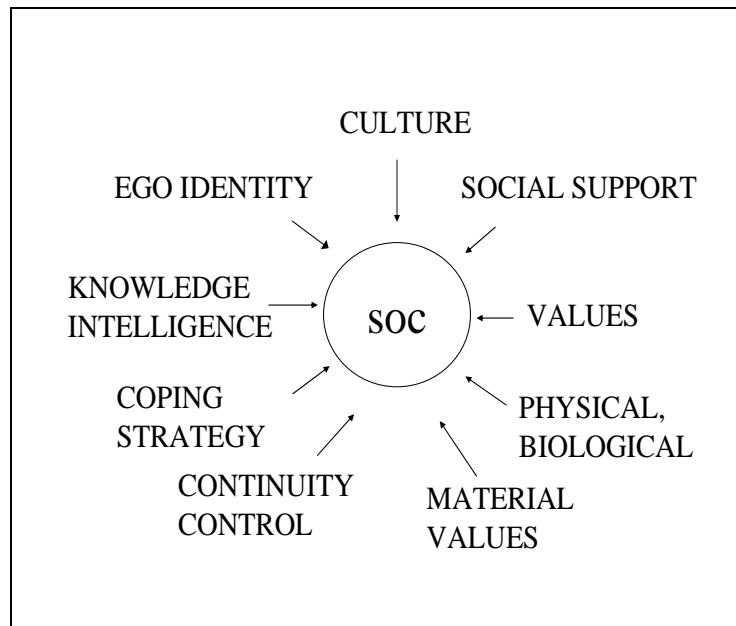


Figure 2. General resistance resources and sense of coherence

People who have access to, and the ability to utilize, the GRRs, in themselves or in their environment, have a better chance of dealing with the challenges of life by managing tension and perceiving experiences (constructing coherent life experiences) that stimulate the development of a high SOC (cf. Paper I for a further explanation of each GRR). GRRs give feedback that enables one to orient oneself in the world and cope successfully with stressors. GRRs are understood as the properties of a person and/or his or her environment that provide certain types of life experiences. In the long run, these lead one to have a strong SOC: a crystallized, integrated view of the world. The relationship between GRRs and SOC is a sort of feedback loop. Although GRRs provide experiences that lead to an increased SOC, it is a strong SOC that enables a person to mobilize and make the best use of the available resources. The cumulative effect may therefore be greater over time (Landsverk & Kane, 1998). In parallel fashion, properties that Antonovsky calls generalized resistance deficits, such as low self-esteem, isolation, low social class, and

cultural instability, provide certain negative types of experiences. These lead to a weak SOC. The balance of experiences provided by the GRRs and the generalized resistance deficits in one's life lead to one's position on the SOC continuum (Antonovsky, 1992). SOC has ramifications at both the individual and the collective level (cf. Figure 2), which implies that coping is not only a question of the person but also an interaction between people and the structures of society—that is, the human resources and the conditions of the living context (Lindstrøm & Eriksson, 2005a). The figure shows that salutogenesis, by its very nature, must be multidisciplinary. This is also distinctly stated by Antonovsky, who emphasized that salutogenesis is not limited by disciplinary borders of one profession but rather is an interdisciplinary approach which may bring coherence between disciplines and realize what connects them (Lindstrøm & Eriksson, 2005a).

### *Appropriate challenges*

The theory of salutogenesis distinguishes between tension and stress. The higher the SOC, the higher the ability to successfully manage the infinite number of complex stressors encountered in the course of life. When demands exceed a person's resources or, more precisely, a person's ability to use his or her resources, then the tension leads to stress and the person moves towards a lower level of health. Setting appropriate challenges is of great importance in creating life experiences that promote the SOC and coping, because both overload and a lack of engagement or stimulation lead to stress (Antonovsky, 1987). The theory hypothesizes that the greater the stressor load, the more important the role of salutary factors (Antonovsky, 1992).

In summary, one may say that three types of life experiences shape the SOC: consistency (comprehensibility), load balance (manageability), and participation in shaping outcomes (meaningfulness) (Lindstrøm & Eriksson, 2005b).

#### **4.2. Life satisfaction**

Quality of life can be viewed on three levels. The first level of assessment is the person's overall satisfaction with life. The second level includes different life domains, such as physical, psychological, sociological, economic, and spiritual. The third level focuses on the components of each domain, such as disease and symptoms (Cramer & Spilker, 1998). In the present study, quality of life is conceptualized as life satisfaction, and defined as overall and general satisfaction with life. It is viewed as a subjective multidimensional and holistic concept that includes physical, psychological, social, and spiritual dimensions; these domains are viewed in relation to an overall subjective well-being level (the person's perception of satisfaction with important life domains). This view on life satisfaction is compatible with Antonovsky's perspective on life satisfaction, substantiated by the fact that SOC has ramifications at both the individual and the collective level (cf. Figure 2). The theory hypothesizes that these levels influence a person's perception of overall subjective well-being (cf. the whole conceptual definition given in Section 5.3.2). This theory represents a new perspective on mental and physical well-being that focuses on understanding and enhancing the adaptive capacity of human beings to increase coping and subsequent well-being (Antonovsky, 1979).

### **4.3. Previous research**

#### ***4.3.1. Salutogenic therapy principles***

Salutogenic therapy principles based on salutogenic theory have not been previously described in the literature. To our knowledge, no studies have systematically used the theory of salutogenesis as a whole and explicit theoretical framework. However, there is some literature on the various aspects of the application of salutogenesis. For example, one study has tried to adapt the core concept of SOC as a theoretical basis to established psychological education in schizophrenia (Landsverk & Kane, 1998). Other studies have used elements of salutogenic thinking in creating empowering dialogues in general practice (Malterud & Hollnagel, 1999), in the treatment of depression in schizophrenia (Menzies, 2000), the treatment of conduct disorder (Hansson, Olsson, & Cederblad, 2004), and in couple therapy (Lundblad & Hansson, 2005), and a salutogenic framework of family members' experience of palliative home care staff has been developed (Milberg & Strang, 2006).

Bengel et al. (1999) emphasize that developing salutogenic therapy principles and intervention programmes are of great importance for the future development of salutogenesis in the recovery framework. Researchers have concluded that the most immediate research target should be to implement the theory into practice, such as in mental health promotion (Eriksson & Lindstrøm, 2005; Lindstrøm & Eriksson, 2005a).

#### ***4.3.2. The effect of salutogenic therapy principles on coping with mental health problems***

Although the theory of salutogenesis gives a generic understanding of how coping, defined as a sense of coherence, may be created, this theoretical perspective has not been



sufficiently explored among people with MHP. The Sense of Coherence Questionnaire (Antonovsky, 1987) has been used in many different intervention studies in mental health to measure outcomes (Blomberg, Lazar, & Sandell, 2001; Hansson, Olsson, & Cederblad, 2004; Kørllin & Wrangsjø, 2002; Lundblad & Hansson, 2005; Lundqvist, 1995; Sack, Kunsebech, & Lamprecht, 1997; Weissbecker, Salmon, Studts, Floyd, Dedert & Sephton, 2002). However, no previous studies have investigated the effects of salutogenic therapy principles on SOC among people with MHP.

#### ***4.3.3. Quality of life among people with mental health problems living in the community, compared with the general population***

Especially during and after the deinstitutionalization movement, numerous studies explored the quality of life among people with MHP living in the community (Barry & Zissi, 1997; Holloway & Carson, 2002; Katschnig, Freeman, & Sartorius, 2006; Mercier, 1994).

Studies have found that people with MHP have lower quality of life than the general population (Lehman, Ward, & Linn, 1982; Tempier, Caron, Mercier, & Leouffre, 1998), especially regarding personal and intimate relationships including family, friends, and partners (Caron, Tempier, Mercier, & Leouffre, 1998; Lehman et al., 1982; Tempier et al., 1998). However, research also shows that people with MHP and the general population have similar quality of life, except for personal and intimate relationships (Caron et al., 1998), and that people with MHP are as satisfied as the general population with residence, clothing, daily activities, leisure activities, and their financial situation (Caron et al., 1998; Tempier et al., 1998).

A recently published study has compared quality of life between a severe mental illness group, a common mental disorder group, and a healthy group from the general population. The results show that the group with severe mental illness rated significantly lower in quality of life than the healthy population, and in some life domains, the common mental disorder group (Evans, Banerjee, Leese, & Huxley, 2007).

In addition, studies have assessed how socio-demographic variables and quality of life correlate among people with MHP and the general population. Some results converge around certain variables that could affect quality of life, but drawing firm conclusions for the other variables is difficult (Caron, Mercier, Diaz, & Martin 2005; Wahl, Rustøen, Hanestad, Lerdal, & Moum, 2004).

Further, it has been found that mental symptoms substantially influence quality of life; the shared variance is up to 30% (Kaiser, 1999; Lehman, 1983). In addition, research indicates that a reduction in (all types of) symptoms is associated with higher quality of life (van de Willige, Wiersma, Nienhuis, & Jenner, 2005). Research also reveals that schizophrenic symptoms account for 32% of the variance in quality of life (Awad, Voruganti, & Heslegrave, 1997) and that positive symptoms such as hallucinations are more strongly correlated with quality of life than negative symptoms such as fatigue and low creativity (Kandyliis, Katsohi, Gioka, Lioura, Iacovides, & Kaprinins, 2002; van de Willige et al., 2005). Finally, research reveals that depression is especially strongly associated with quality of life (Caron et al., 2005; Papakostas, Petersen, Mahal, Misschoulon, Nierenberg, & Fava 2004).

A preliminary conclusion is that few studies have compared quality of life, including socio-demographic variables, among people with MHP with normative data for the general population. Further, previous studies have reported that various symptoms are associated with quality of life. Given the diverging findings and few studies, more research is required to explore the quality of life among people with MHP versus the general population, the perceptions that those with MHP have of their symptoms, and their relationships with quality of life.

#### ***4.3.4. The utility of sense of coherence versus mental symptoms for the prediction of life satisfaction among people with mental health problems***

A review of the literature concludes that, in general, a high SOC is related to a high level of life satisfaction (Eriksson & Lindstrøm, 2005). The higher the SOC, the more satisfied people are with their lives, and consequently, the higher the level of quality of life and general well-being they report (Eriksson & Lindstrøm, 2006). The evidence shows that SOC is strongly and negatively related to anxiety, burnout, demoralization, depression, and hopelessness, and positively related to hardiness, mastery, optimism, self-esteem, good perceived health, quality of life, and well-being (Lindstrøm & Eriksson, 2005b). Based on Antonovsky's theory and investigation of previous research it is reasonable to draw the conclusion that SOC and life satisfaction are strongly correlated.

Studies that use prospective designs show different results regarding SOC as a predictor of health, quality of life, and well-being outcomes. Overviews conclude that SOC is a relatively good predictor, from both short- and long-term perspectives (Eriksson & Lindstrøm 2005, 2006). In addition, other studies (not mentioned in the overviews) have identified SOC as a predictor of quality of life and depression among caregivers

(Van Puymbroeck & Rittman, 2005), well-being during pregnancy (Sjøstrøm, Langius-Ekløf, & Hjertberg, 2004), employees' adjustment to foreign assignments (Andersen & Arnetz, 1999), recovery following orthopaedic surgery (Chamberlain, Petrie, & Azariah, 1992), symptoms of Post Traumatic Stress Disorder and depression after miscarriage (Engelhard, van den Haut, & Vlaeyen, 2003), psychosocial adjustment in men after acute myocardial infarction (Drory, Kravetz, & Florian, 1999), mortality (Surtees, Wainwright, Luben, Khaw, & Day, 2003), and health-related quality of life in hypertensive patients (Julkunen & Ahlström, 2006). Finally, SOC was not found to be a predictor of depression among mass-evacuated adults from Kosovo (Roth & Ekblad, 2006).

With regard to people with MHP, SOC was identified as the main predictor of suicidal behaviour in suicide attempters (Petrie & Brook, 1992; Polewka, Chroslek-Maj, Kroch, Mikolaszek-Boba, Ryn, Datka, et al., 2001), dropout and mortality after residential treatment of substance abuse (Andersen & Berg, 2001), mortality five years after detoxification and counselling (Berg & Andersen, 2001), and completion of an inpatient stay in a post-detoxification counselling unit (Berg, 1996).

One study revealed that changes in SOC among schizophrenic patients during an 18-month follow-up were positively correlated to changes in life satisfaction (Bengtsson-Tops & Hansson, 2001), while another study found SOC to influence health and quality of life in a Swedish psychiatric at-risk group (Cederblad & Hansson, 1996). Prospective designs were not used in these two studies, so these results must be treated cautiously.

A preliminary conclusion is that many studies have investigated the relationship between either SOC or mental symptoms and life satisfaction, through correlation analysis. Fewer

studies have investigated the predictive value of SOC with two or more measurements. Accordingly, a more systematic approach, using prospective study designs and repeated measures, is warranted (Antonovsky, 1996; Eriksson & Lindstrøm, 2006; Geyer, 1997; Motzer & Stewart, 1996; Schnyder, Stefan, Hanspeter, Sensky, & Klaghofer, 1999; Veenstra, Moum, & Røysamb, 2005). Furthermore, there have been limited studies focusing on the relationship between SOC and mental symptoms and life satisfaction among people with MHP, while few have investigated the prognostic competence of SOC. The prognostic ability of SOC, compared with mental symptoms, on life satisfaction in people with MHP has not been investigated.

## **5. THE STUDY**

### **5.1. Research design**

The present study consisted of the three following designs:

1. A randomized controlled trial with three measurements during one year (Paper II)
2. A two-group cross-sectional comparative design using baseline data (Paper III)
3. A prospective one-year follow-up design using baseline data and data from the third measurement (Paper IV)

An overview of the study design is shown in Table 2.

Table 2. Study design

	Months	0	3		6	12	
R <sup>3</sup>	<b>Intervention group</b>	Pretest I <sup>1</sup>	Intervention; eight group sessions; ordinary care	Evaluation form	Intervention; eight group sessions; ordinary care	Post-test I <sup>2</sup> Evaluation form	Post-test II <sup>2</sup> Evaluation form
	<b>Control group</b>	Pretest I <sup>1</sup>	Ordinary care		Post-test I <sup>2</sup>	Post-test II <sup>2</sup>	

R = Randomization.

<sup>1</sup>Pretest I: Questionnaire on sense of coherence, mental symptoms, and life satisfaction.

<sup>2</sup>Post-tests I, II: Questionnaire on sense of coherence and life satisfaction.

<sup>3</sup>In Papers III and IV the MHP sample as a whole were used.

The data collections, including the intervention, were performed between December 2001 and December 2002.

## 5.2. Study population and recruitment procedures

### 5.2.1. Participants and characteristics

This study's main population consisted of residents living at home, in the community, with various MHP (Papers II, III, and IV). In addition, a general population sample in Norway (Wahl et al. 2004) was used as a comparison group (Paper III).

The mean age for the MHP sample was 51 years (range 18–80). The sample consisted mainly of women, and most participants lived alone. A total of 91% were recipients of public transfer payments, such as disability pensions and old age pensions, and 10% were employed (most part time). For further information, see Table 3.

Table 3. Socio-demographic characteristics of the MHP group: total sample, the experiment group, and the control group

<b>Characteristics</b>	<b>Total sample (n = 107) n (%)</b>	<b>Experiment group (n = 60) n (%)</b>	<b>Control group (n = 47) n (%)</b>
<b>Gender</b>			
Female	75 (70)	40 (67)	35 (74)
Male	32 (30)	20 (33)	12 (26)
<b>Age</b>			
< 30 years	8 (8)	4 (7)	4 (9)
30–49 years	41 (38)	23 (38)	18 (38)
50–69 years	46 (43)	27 (45)	19 (40)
> 70 years	9 (8)	4 (7)	5 (11)
Not stated	3 (3)	2 (3)	1 (2)
<b>Education</b>			
Primary school	41 (38)	21 (35)	20 (43)
Secondary school	31 (29)	14 (23)	17 (36)
High school degree	13 (12)	7 (12)	6 (13)
University or college < 4 years	14 (13)	12 (20)	2 (4)
University or college > 4 years	3 (3)	3 (5)	
Not stated	5 (5)	3 (5)	2 (4)
<b>Living alone</b>			
Yes	67 (63)	32 (53)	35 (74)
No	40 (37)	28 (47)	12 (26)
<b>Marital status</b>			
Married or cohabiting	20 (19)	10 (17)	10 (21)
Not married	42 (39)	21 (35)	21 (45)
Widowed	11 (10)	6 (10)	5 (11)
Divorced	31 (29)	21 (35)	10 (21)
Separated	2 (2)	1 (2)	1 (2)
Not stated	1 (1)	1 (2)	
<b>Have children?</b>			
Yes	62 (58)	38 (63)	24 (51)
No	43 (40)	21 (35)	22 (47)
Not stated	2 (2)	1 (2)	1 (2)
<b>Work situation*</b>			
Paid work (part time)	11 (10)	7 (12)	4 (9)
Self-employed	3 (3)	3 (5)	0
Full-time household work	2 (2)	1 (2)	1 (2)
Education, military service	2 (2)	1 (2)	1 (2)
Retired/national insurance recipient	98 (92)	55 (92)	43 (92)

\*More than 100% because some are registered in two categories.

See Table 1 in Paper III for an overview of the demographic characteristics of the MHP group compared with the general population.

### *Mental status of the MHP group*

More than 80% of the sample was encumbered with symptoms intense enough to be disturbing and prevent normal daily activities. Between 66% and 79% of the participants reported problems within each of the areas of somatization, obsessive-compulsive behaviour, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid ideation, and psychoticism (measured by SCL-90) (Table 1 in Paper II). A total of 71% of the MHP sample had struggled with MHP for 10 years or longer, 26% for 2–10 years, and 3% for a year or less.

### **5.2.2. Recruitment**

The recruitment of the people with various MHP occurred over a two-month period. They were included if they met the following criteria: 18–80 years of age, living at home with MHP, able to engage in dialogue, reliant on the mental health services and/or an activity centre, good orientation, mastery of the Norwegian language, no alcohol or drug problems, and judged to probably be able to stay in the group for about six months. The study was performed in nine mental health sectors in a larger city in Norway. Based on a list in each geographical area, potential respondents were selected (in accordance with the inclusion criteria). Local mental health professionals recruited the participants from people they had known for some time. Those who were asked to participate received an information letter that explained the project as a whole, the requirement for professional confidentiality, and the fact that participation was voluntary. The letter emphasized that participants could opt out of the study at any time without giving reasons for doing so. About 1200 people in the community were registered as needing support from the mental health care system. Of these, a total of 136 people fulfilled the inclusion criteria and 116 consented to participate. The participants were then randomly allocated to either a coping



enhancement experimental group (n = 67) or an ordinary care control group (n = 49). The randomization was performed by drawing lots in each of the nine geographical areas. In five of the nine strata, 50% of the participants were allocated to the experimental group and 50% to the control group. In the other four areas, two-thirds of the participants were allocated to the experiment group and one-third to the control group to get sufficient participants (at least five) in each treatment group.

A total of 107 answered the mailed questionnaires (response rate of 92%) at baseline. A total of 98 (84%) responded at the second measurement and 92 (78%) at the one-year follow-up (see the flow chart in Paper II, Figure 1).

The general population consisted of 1893 Norwegian citizens aged 19–81. Statistics Norway randomly selected 4000 citizens from the National Register and, of these, 1893 could be used for further analysis (Wahl et al., 2004).

### **5.3. Instruments**

The questionnaire used in the present study contained: socio-demographic data, such as age, sex, education, social, marital status, cohabitation, having children, and employment status, and clinical variables, such as how long the participant had been struggling with MHP and their perception of their own sense of coherence, life satisfaction, and mental symptoms.

The instruments used in the present study were the Sense of Coherence Questionnaire, the Quality of Life Scale (QOLS–N), and the Symptom Checklist–90–Revised (SCL–90–R).

An overview of the instruments is shown in Table 4 and explained in further detail in Sections 5.3.1 to 5.3.3.

### ***5.3.1. The Sense of Coherence Questionnaire***

Antonovsky's hypothesis states that a person with a high SOC has a high coping capacity (Antonovsky, 1987). According to Antonovsky (1987), SOC is a global orientation that expresses the extent to which one has a pervasive and enduring, though dynamic, feeling of confidence that the stimuli derived from one's internal and external environments in the course of living are structured, predictable, and explicable (comprehensibility); the resources are available to one to meet the demands posed by these stimuli (*manageability*); and these demands are challenges that are worthy of investment and engagement (*meaning*).

The SOC questionnaire is based on self-report. Several studies have found support for its validity and reliability (Antonovsky, 1993a; Bengtsson-Tops & Hansson, 2001; Cederblad & Hansson, 1996). It includes 29 items and measures the degree to which an individual views the world as comprehensible (11 items), manageable (10 items), and meaningful (eight items). Responses to all items are scored by means of a seven-point, Likert-type scale. The total score is the sum of the items, ranging from 29–203 and the sums of the subscales are 11–77, 10–70, and 8–56, respectively.

The questionnaire was translated into Norwegian, according to authorized procedures (Eide, 1991). In 124 studies, internal consistency reliability (Cronbach's alpha) ranges from 0.70 to 0.95 (Eriksson & Lindstrøm, 2005). In the present study, internal consistency reliability (Cronbach's alpha) for the total SOC score was 0.92, and for the subdimensions

comprehensibility, manageability, and meaning were 0.81, 0.80, and 0.83, respectively (Table 4).

### ***5.3.2. Quality of Life Scale***

We measured quality of life using the Norwegian version of the Quality of Life Scale (QOLS–N). The QOLS was selected because of its suitability for measuring the quality of life of people with chronic conditions (Burckhardt & Anderson, 2003). The scale covers the wide range of domains that are important to an individual’s perception of different life domains and is holistic in scope (Burckhardt, Anderson, Archenholtz, & Hägg, 2003). According to Burckhardt and Anderson (2003), it fits the definition of quality of life given by Revicki, Osoba, Fairclough, Barovsky, Berzon, Leidy et al. (2000, p. 888):

“a broad range of human experiences related to one’s overall subjective well-being. It implies value based on subjective functioning in comparison with personal expectations and is defined by subjective experiences, states and perceptions. Quality of life is inherently idiosyncratic to the individual but intuitively meaningful and understandable to most people”.

The QOLS was first developed by American psychologist John Flanagan (Flanagan, 1978, 1982). It was developed in the United States for a healthy population and thereafter adapted for people with chronic conditions (Burckhardt, Woods, Schultz, & Ziebarth, 1989). The QOLS has been translated into Norwegian and assessed for validity and reliability (Wahl, Burckhardt, Wiklund, & Hanestad, 1998; Wahl et al., 2004). No previous study has used the QOLS on people with MHP.

The QOLS contains 16 items that assess satisfaction with life domains, such as physical and material well-being, personal development, relationships with others, participation in social, community and civic activities, and recreation. Respondents rate their satisfaction on a seven-point scale. The total score is the sum of the items, ranging from 16 to 112. The QOLS has three subdimensions: relationships and material well-being (five items; range 5–35); health and functioning (five items; range 5–35); and personal, social, and community commitment (six items; range 6–42) (Burckhardt et al., 2003). Higher scores indicate better quality of life.

Internal consistency reliability (Cronbach's alpha) for the overall score is reported to be 0.82–0.92 (Burckhardt & Anderson, 2003; Burckhardt et al., 1989; Wahl et al., 1998). In the present study, internal consistency reliability (Cronbach's alpha) for total QOLS was 0.89, and for the subdimensions of relationships and material well-being, health and functioning, and personal, social, and community commitment were 0.71, 0.78, and 0.82, respectively (Table 4).

### ***5.3.3. Symptom Checklist–90–Revised (SCL–90–R)***

The SCL–90–R was used to describe the participants' mental health status (Derogatis, 1992). The measurement of symptoms is based on a negative conceptualization of well-being and health; the absence of symptoms indicates good mental health.

Each item of the scale is rated on a five-point scale of distress (0–4), ranging from “not at all” to “extremely”. The scale is scored and interpreted in terms of nine primary symptom dimensions and three global indices of distress. Seven additional items, which are part of the SCL–90–R but are not scored collectively as a dimension, are summed into the global

scores. Each dimension, and the global scores, has a cut-off point (cf. Table 1 in Paper II), and scores over this point are considered high and may be clinically disturbing.

The global indices are the Global Severity Index (which combines information on the number of symptoms and the intensity of perceived stress), the Positive Symptom Distress Index (a pure intensity measure), and the Positive Symptom Total (a count of the number of symptoms the participant reports as being positive to any degree). Research using analogues of these measures confirms the rationale that the three indicators reflect distinct aspects of mental disorder. Several studies support the validity and reliability of the questionnaire (Derogatis, 1992). The questionnaire was translated into Norwegian in the mid-1970s, and later received minor revisions (Vassend, Lian & Andersen, 1992). Internal consistency reliability (Cronbach's alpha) for the nine dimensions has been reported to range from 0.77 to 0.90 (Derogatis, 1992, Vassend, Lian & Andersen, 1992) and 0.97 for the Global Severity Index (Vassend, Lian & Andersen, 1992). In the present study, internal consistency reliability (Cronbach's alpha) for the nine dimensions ranges from 0.76 to 0.90, and is 0.98 for the Global Severity Index (Table 4).




Table 4. Instrument description of the SOC, QOLS and the SCL-90-R

	Items	Subscales	Response scale	Scoring	Cronbach's Alpha
SOC Antonovsky (1987)	29	1. Comprehensibility 2. Manageability 3. Meaning	7-point Likert format scale	Total scoring ranges from 29–203, subscales ranging from 11–77, 10– 70 or 8–56, with higher scores indicating better sense of coherence.	Total: 0.92 Subscales: 0.80–0.83
QOLS Burckhardt et al. (1989)	16	1. Relationships and material well-being 2. Health and functioning 3. Personal, social and community commitment	7-point Likert format scale ranging from 1 (not satisfied) to 7 (very satisfied)	Total scoring ranges from 16–112, subscales ranging from 5–35 or 6– 42, with higher scores indicating better quality of life.	Total: 0.89 Subscales: 0.71–0.82
SCL-90 Derogatis (1992)	90	1. Somatization 2. Obsessive- compulsive 3. Interpersonal sensitivity 4. Depression 5. Anxiety 6. Hostility 7. Phobic anxiety 8. Paranoid ideation 9. Psychoticism 10. Additional items	5-point scale ranging from 0 (not at all) to 4 (extremely)	Three global indices: 1. Global Severity Index (combines information on number of symptoms and the intensity of perceived stress) ranging from 0–4; 2. Positive Symptom Distress Index (a pure intensity measure), ranging from 0–4; 3. Positive Symptom Total (the number of symptoms the participant reports as being positive to any degree), ranging from 0–90. Nine primary symptom dimensions and additional items, ranging from 0–4. Higher scores indicate higher distress.	Total: 0.98 Subscales: 0.76–0.90

### 5.3.4. Evaluation form

The participants in the talk-therapy groups evaluated the programme anonymously by answering an evaluation form halfway through the intervention, just after the intervention, and six months later. The evaluation form was designed for the present study to determine the participants' own assessments of their personal development as a result of their participation in the group. See Table 5 for a description of the evaluation form.

Table 5. Evaluation form

<b>EVALUATION OF THE TALK-THERAPY GROUPS IN THE PROJECT COPING WITH MENTAL HEALTH PROBLEMS</b>			
<b>How useful has the talk-therapy group been for you?</b>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Very useful</b>	<b>Useful</b>	<b>Not very useful</b>	
<b>What has been useful for you?</b>			
<b>Is there something that could have been better in the talk-therapy groups?</b>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>Yes</b>	<b>No</b>	<b>Don't know</b>	
<b>If your answer is yes, please write down what you or others could contribute to make it better:</b>			
<b>Which face best describes how you have felt in the talk-therapy groups? Please place a cross on the face that is most accurate for you.</b>			
			
<b>To what extent has the talk-therapy group contributed to any improved mental health?*</b> Please place a cross in the box by the most appropriate option.			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>To a high degree</b>	<b>To a medium high degree</b>	<b>To a small degree</b>	<b>Not at all</b>

\* Not asked for halfway through the intervention.

#### **5.4. Intervention development**

The intervention (Paper I) was developed through the following steps: needs assessment, aims, theoretical framework, intervention programme, adoption and implementation plan, and evaluation plan. These steps are suitable and may be compared with Bartholomew, Parcel, Kok & Gottlieb's (2006) intervention mapping model, although the steps have not been consciously used in the development process. Intervention mapping might map the path of intervention development from a need to a potential solution (Bartholomew et al., 2006).

##### *1. Needs assessment*

The main reason for the intervention development was the increasing number of vulnerable people with often long-lasting MHP in the community who need interventions that focus on active adaptation to increase their coping ability and life satisfaction (Papers I and II). In addition, developed salutogenic therapy principles, based on the theory of salutogenesis (Antonovsky, 1987), have been lacking. Accordingly, there is a call for development and research on the effect of salutogenic therapy principles (Bengel, 1999; Eriksson & Lindstrøm, 2005; Lindstrøm & Eriksson, 2005a).

Subsequently, the theory of salutogenesis (cf. Section 4.1) was the basis of the intervention from which salutogenic therapy principles and an intervention programme were developed (Paper I). The intervention was implemented in talk-therapy groups. The reason for choosing groups is based on "Symbolic interactionism", the nature of human group life and how the group process can impact on the participants. It emphasizes action and interaction and is based on three premises: (1) that people act towards objects on the



basis of the meanings that the objects have for them; (2) that the meaning of such objects is derived or arises from the social interaction that people have with others; and (3) that these objects are handled in, and modified through, an interpretative process used by people when they encounter objects (Blumer, 1969). In addition, talk-therapy groups are very seldom offered to this group of people.

## *2. Aims*

The main aim of the intervention was to create an environment (Rogers, 1957) in which the group leaders could use different therapy methods and strategies in talk-therapy groups to increase participants' awareness of their potential, their internal and external resources, and their ability to use them, and thus to increase their ability to cope and level of mental health. The intervention is designed for people with various relatively stable MHP who are able to have a dialogue and live in the community, but who need support from the health system (cf. Section 5.2.2)

## *3. Theoretical framework, supporting theories, and practical strategies*

An intervention is not ready to be evaluated unless the theoretical basis of the intervention has been developed and carried out (Taylor, 2004). The principal investigator developed a three-week training programme containing the theoretical framework of salutogenesis (cf. Section 4.1), the supporting theories, and implementation of the salutogenic therapy principles, including how to be a good group leader and dialogue partner.

A group of 18 mental health care students (postgraduate education, each with three years' professional education, such as nursing) and six mental health professionals successfully completed the programme.

#### *4. Intervention programme*

In a workshop, the participants of the three-week training programme, supervised by the principal investigator, developed a 16-session intervention programme for talk-therapy groups, based on salutogenic treatment principles. Two pilot projects were successfully completed, in which the six mental health professionals were leaders and the principal investigator was the supervisor (Langeland et al., 2000).

#### *5. Adoption and implementation plan*

The participants were recruited through collaboration with the leaders of the mental health sectors. The study was performed in nine mental health sectors in a large city in Norway, and the participants were recruited from these nine different geographical areas. Several meetings were held between the principal investigator of the study, the leaders, and the local mental health professionals in each area to determine an appropriate recruitment procedure (cf. Section 5.2.2).

#### *6. Evaluation plans*

The primary outcome of the study was to detect changes in SOC according to the SOC Questionnaire (Antonovsky, 1987). In addition, an evaluation form designed for the participants in the talk-therapy groups was developed (Table 5).

### **5.5. Data analysis and statistical methods**

The SPSS package versions 13.0 and 14.0 (SPSS Inc., Chicago IL) were used to analyse data. Descriptive analyses were performed to assess the characteristics of the sample.

Univariate analysis of covariance (ANCOVA) was used to investigate the effect of therapy by testing the differences in SOC score between the experiment and control groups from baseline to the end of intervention (Paper II). We used chi-square tests to measure differences between the MHP group and the general population in age, sex, education, marital status, and cohabitation, and we used general linear model univariate analyses of variance (ANOVA) to identify possible differences between the MHP group and the general population in quality of life. Further, we used multiple linear regression analyses to test the effect of symptom load and age within the MHP group (Paper III). When investigating the relationship between SOC, life satisfaction, and symptoms at baseline, and the prognostic value of SOC versus symptoms on life satisfaction, we used multiple linear regression analysis (Paper IV). When testing the difference in SOC and life satisfaction from baseline to follow-up (Papers II and IV), we included baseline scores of the dependent variables, SOC, and quality of life as independent variables. Cronbach's alpha was used to determine internal inconsistency reliability for the total and subscales used in the present study (Table 4).

## **5.6. Ethical issues**

The present study's population consisted of rather vulnerable subjects and it was therefore very important to assess the ethical aspects to prevent any of the participants experiencing any harm or overload. The ethical aspects of experimental research were addressed before the study started (Polit & Beck, 2004). The inclusion criteria took the mental stability of participants, and whether they lived at home, into consideration to assess whether they were capable of weighing the risks and benefits of participation (Polit & Beck, 2004) and filling out the mailed questionnaire on their own. However, they were asked to participate by local mental health professionals who knew the people from regular contact over time,

and if they wanted, a mental health professional could be present when they filled out the questionnaire. Thus, they had the opportunity to discuss benefits and risks with a reliable person, and their need for safety could be accommodated. They volunteered to take part in the study by giving their written consent.

The persons who were asked to participate received an information letter (cf. recruitment, Section 5.2.2). In the letter, they were also informed that they would be randomly assigned to one of the groups. Ordinary support from the health system would be maintained as usual. In addition, they were informed that the persons who would be selected to the control group would be offered participation in a talk-therapy group after the third measurement. A total of 30 of the 39 who reached the third measurement in the control group took advantage of this offer.

Although the intervention was designed to maximize good and minimize harm (Polit & Beck, 2004), participating in such groups can lead to emotional stress that may not be handled in the groups alone. A psychiatrist was available during and after the intervention period in case of need. Two participants applied for further treatment.

The study was carried out in accordance with the ethical guidelines of the Declaration of Helsinki (World Medical Association, 2000). The Regional Committee for Medical Research Ethics for Southern Norway and Norwegian Social Science Data Services approved the study.

## **6. MAIN RESULTS**

### **6.1. Promoting coping: Salutogenesis among people with mental health problems (Paper I)**

Based on the theory of salutogenesis, this paper shows one way of developing salutogenic therapy principles and an intervention programme for promoting SOC and coping in practice in people with MHP. The operationalization is based on the five basic components or therapy principles in salutogenic theory: (1) the health continuum model; (2) the story of the person; (3) health-promoting (salutary) factors; (4) the understanding of tension and strain as potentially health promoting; and (5) active adaptation and the core concepts of SOC, GRR, and appropriate challenges. In addition, based on the theory of salutogenesis, some theories are used as support in the interpretation and operationalization process (see the overview in Table 1 in Paper I: a mental health promotion process in talk-therapy groups based on the theory of salutogenesis).

### **6.2. The effect of salutogenic treatment principles on coping with mental health problems. A randomized controlled trial (Paper II)**

The talk-therapy groups based on salutogenic treatment principles resulted in statistically significant improvement in SOC among people with mental health problems ( $p = 0.03$ ). The manageability dimension of the SOC contributed most to the change ( $p = 0.01$ ) (Table 2 in Paper II). A total of 69% of the participants who received the treatment increased their SOC score. This result corresponds to the participants' own evaluation of the intervention (Table 6: participant evaluation of the groups). The effect size was 0.29 for the total SOC score, 0.27 for the subdimension comprehensibility, 0.36 for manageability, and 0.20 for meaning.

*Evaluation*

The participants' evaluations are presented in Table 6.

Table 6. Evaluation of the talk-therapy groups

QUESTIONS		ANSWERS n = 50–54.		
		Halfway	End	After six months
How useful have the talk-therapy groups been for you?	Very useful	20	24	18
	Useful	31	26	25
	Not very useful	1		4
	Not stated			3
Is there something that could have been better in the groups?	Yes	10	9	11
	No	23	29	19
	Do not know	19	14	18
Which face best describes how you have felt in the group?	☺	46	44	37
	☹	5	7	10
	☹	1	0	0
	Not stated			3
To what extent has the group contributed to any improved mental health ?	High degree		18	7
	Medium-high degree		25	29
	Small degree		6	9
	Not at all			5
	Not stated			2

In response to the question *what has been useful for you* (cf. Table 5), the following were explicitly emphasized: the main focus on coping, possibilities, and resources; coming together with other like-minded people, getting to know new people, listening to their experiences and generalizing own experiences and the fact that one might teach others; room for reflection together with others in the same situation and listening to how others cope with their problems; to have something to join regularly; to meet leaders who were encouraging and polite; to talk about everyday routines and activities, emotions, and

positive experiences; the smiles and laughter and how to cope as well as possible; to find distinct strategies that we may work with further on our own; to participate together with many others without getting problems such as social anxiety; to become more conscious of how to solve problems and receive advice on what one might do to prevent difficult situations developing negatively, and seeing possibilities; to manage to open up more than before, experience of being taken care of and accepted; to get insight into own situation in order to be conscious of what one may use further; to get simple advice that might be useful and to get positive expectations; to talk and perceive experiences from another point of view; to experience functioning in a group; to talk openly and have confidence that it is kept in the group; and to experience better self-esteem.

Most of the participants who answered yes to the question *is there something that could have been done better in the group* (cf. Table 6) wanted each session to last 30 minutes longer and the groups to last over a longer period of time.

#### *Changes on SOC six months after the intervention*

Six months after the intervention there was still better coping compared with the control group, but the difference was smaller and not significant ( $p = 0.48$ ). The increase was 4.3 for the experimental group and 1.4 for the control group. The effect size was 0.10 for the total SOC score and 0.15 for the subdimension comprehensibility, 0.12 for manageability, and 0.10 for meaning.

### **6.3. Quality of life among people with chronic mental health problems living in the community versus the general population (Paper III)**

After controlling for age, sex, education level, marital status, having children, and cohabitation, people with MHP living in the community differed significantly in quality of life, including broader life domains, compared with the general population ( $p < 0.001$ ). Further, age and quality of life were more strongly positively correlated in the MHP group ( $r = 0.40, p < 0.001$ ) than in the general population ( $r = 0.05, p = 0.03$ ).

In addition, the total symptom strain (SCL-90-R global severity index) and quality of life were strongly negatively correlated ( $r = -0.65, p < 0.01$ ) in the MHP group (Figure 2 in Paper III). The global severity index accounted for 42% of the variance in quality of life. Further, quality of life differed significantly for those who scored under, compared to those who scored over, the SCL-90-R cut-off point (Table 4 in Paper III). This applied to all types of symptoms, according to the subdimensions in the SCL-90-R (Table 2 in Paper III).

### **6.4. Sense of coherence predicts change in life satisfaction among home-living residents in the community with mental health problems: a one-year follow-up study (Paper IV)**

This paper sheds light on the causal processes underlying life satisfaction changes. The result shows that SOC predicts change in life satisfaction after a year, while symptom load was not a significant predictor. Results showed a standardized beta coefficient of 0.39 ( $p = 0.014$ ) for SOC. For mental symptoms, the standardized beta coefficient was 0.00 ( $p = 0.998$ ) (Table 3 in Paper IV). The meaning dimension of SOC contributed most to the prediction (standardized beta coefficient = 0.34,  $p = 0.01$ ), and the personal, social, and



community commitment subdimension of life satisfaction was most responsive to SOC (standardized beta coefficient = 0.53,  $p < 0.001$ ). The result signifies that a higher SOC results in more positive development of life satisfaction, while a lower SOC indicates poor development of life satisfaction. This, however, is not the case for symptom load; neither total nor subdimensions of symptom load on the SCL-90 had an impact on the development of life satisfaction.

## **7. DISCUSSION**

This discussion section includes methodological considerations and reflections about the findings. Every study has inherent strengths and weaknesses in its methodology and in the interpretation of the findings. It is therefore crucial to identify and discuss these factors.

### **7.1. Methodological considerations**

The following types of validity were applied when the quality of the methods used in the study were assessed: statistical, conclusion validity, internal validity, construct validity, and external validity (Lund, 2002). The threats considered relevant to the present study will be discussed.

#### ***7.1.1. The randomized controlled trial (RCT) study***

The RCT study provides the greatest methodological challenges. True experiments offer the most convincing evidence concerning the effects one variable has on another; the greatest strengths, then, lie in the confidence with which causal relationships can be inferred. Although experiments possess a high degree of internal validity because of manipulation, control, and randomization, there can still be threats to this internal validity (Polit & Beck, 2004).

Internal validity is defined as a causal relationship between two categories of operationalization (Lund, 2002). In the RCT study, the independent variable was the operationalization of the theory of salutogenesis into therapy principles (Paper I), and the dependent variable consisted of the operationalization of the SOC concept (the SOC Questionnaire, Section 5.3.1). The theory of salutogenesis could be operationalized in a number of different ways to advance its clarification. There is no “true” operationalization of a theory so the theory could also be used to develop other interventions to promote a stronger SOC, coping, and mental health. However, the salutogenic therapy principles developed in the present study resulted in the main outcome, that is, a positive effect on SOC (indicating that SOC is sensitive to the intervention). This may indicate that the operationalization of the theory into salutogenic therapy principles (the independent variable) has construct validity, which might further indicate that the operationalization of the theory into salutogenic therapy principles is compatible with the operationalization of the theory into the SOC Questionnaire (the dependent variable). This could indicate that construct validity is good on both the cause side and the effect side, which strengthens the internal validity. This gives grounds for replicating the intervention in other studies and clinical settings, to examine the effect and eventually confirm or further develop the principles.

Furthermore, a possible Hawthorne effect (Polit & Beck, 2004) may have been present in the RCT study, especially in the experiment group. However, the control group knew from the beginning that they would get the offer of group treatment when the last measurement was completed. It is most likely that this reduced any possible errors caused by the effects of attention in the comparison between the experiment and control group.

The defection after random assignment (before first measurement) of the subjects to the experiment group and control group may have affected the internal validity as well. There was a difference on baseline of nine points between the experiment group and the control group (120 and 111, respectively; Table 2, Paper II), although before the intervention these groups were expected to be approximately equal. There are several reasons to explain this difference. Firstly, this skewed distribution might simply have been caused by chance, a situation that may occur when the sample size is small (Brink & Wood, 1998). Another explanation may be that five of the dropouts in the experiment group withdrew before the first measurement because of bad health or difficult life situations (there were seven dropouts before the first measurement in the experiment group compared with two in the control group; cf. Figure 1, Paper 2: flow chart of the trial profile). This has probably resulted in a higher mean SOC score in the experiment group compared with the control group at baseline. The threshold for dropouts in the experiment group is, of course, lower than in the control group because of the strain of beginning a therapy group. Finally, an expectancy effect (Polit & Beck, 2004) may have been present. Most of the participants primarily wanted to begin the talk-therapy group (impressions from the mental health professionals that recruited the participants). Those who were placed in the experiment group may have had positive expectations about the talk-therapy group, and the participants in the control group may have been disappointed (a so-called nocebo effect; Polit & Beck, 2004). These factors may have affected the answers at baseline. Joyce, Ogrodniczuk, Piper, & McCallum (2003) also suggest that the expectancy effect may be a mediating factor. To exclude these possible influences on the baseline scores, one may conclude that the measurement at baseline should have been done *before* randomization.

Because of the difference in baseline scores on SOC between the experiment group and the control group, and as the baseline score may predict change of score, the pretest score for SOC was included as a covariate in the ANCOVA to control for these differences. ANCOVA adjusts for initial differences so that the result more precisely reflects the effect of the intervention and thus contributes to the internal validity (Polit & Beck, 2004).

As the present study indicates that the effect of the intervention started sometime between the randomization and the baseline measurement, the demonstrated effect of the intervention may have been underestimated.

In addition, to avoid compromising statistical conclusion validity and internal validity, we used intention-to-treat analysis (Brink & Wood, 1998; Polit & Beck, 2004), including those participants who did not finish the intervention programme but who completed the questionnaire at the second measurement and follow-up. Nevertheless, the dropout rate was 16% after treatment ended and 18% at follow-up. Most of the dropouts were in the control group. One of these reported worsened health, one was hospitalized, and the reason for dropout was unknown for the others. This might indicate that dropping out adversely affected their health, and this situation may also have contributed to the effect of the intervention being underestimated.

According to the power analysis, it would have been desirable to have 64 participants in each group. All the participants who consented to participate were included in the study. Recruiting more participants required extending the recruitment area (outside the city), and this was complicated. Despite the reduced power, the intervention showed a statistically significant effect of reasonable size. However, the randomized controlled trial

needs to be replicated in larger studies to analyse the effect, and determine which component of the intervention is most effective.

The results suggest that a 16-week package, with 90 minutes of treatment a week, has sufficient power. In addition, the high rate of consent to randomization (85%) and the low withdrawal rate (16%) suggest that this is an acceptable intervention in this population. There was also a relatively high attendance in the groups; 51 participants attended between 8–16 sessions. In this respect, internal validity is considered good. However, this is a small exclusive group. In Bergen in 2002, approximately 1200 patients were registered as living in the community and needing support from the mental health care system, and 136 of these fulfilled the inclusion criteria. Of the 136 eligible people, 20 declined to participate, which seems very low for this particular patient population. However, the recruitment procedure was well prepared and the eligible people were asked to participate by people they trusted. In addition, this group of people is seldom offered therapy, especially group therapy. The stated aim and focus of the groups also comprised a reason for many to participate.

One question to ask is whether the intervention was applied in accordance with the salutogenic therapy principles and the intervention programme.

The education programme aimed at the group leaders consisted of several stages (cf. Section 5.4). Firstly, the six mental health professionals participated in the pilot study (Langeland et al., 2000). Secondly, all the group leaders attended lectures about salutogenesis. Thirdly, they attended a three-week training programme that integrated theory and practice. Fourthly, all the group leaders were supervised by the principal investigator once a week in connection to each session. Accordingly, the treatment

integrity (Brink & Wood, 1998) of the group leaders in this study is suggested to be good and it is likely that the intervention was implemented in accordance with the intention of the programme. This argument is supported by the answers on the question: “What has been useful in the groups?” (cf. Section 6.2) in the evaluation form (cf. Table 5), where the focus on coping, resources, and possibilities was emphasized. This strengthens the statistical validity, conclusion validity, and internal validity.

The assessment of the intervention was done by anchor-based and distribution-based approaches. The anchor-based approach (evaluation form, Tables 5 and 6) focuses on how the participants assessed their own situation/change (improvement or deterioration) after participating in the groups. The distribution-based approach (the SOC questionnaire, Section 5.3.1) is an objective measure of a concept here and now, and may be illustrated by estimating the effect size. It might be a strength to use both approaches in the assessment of the intervention because these approaches complete each other (de Vet, Ostelo, Terwee, Roer, Knol, Becherman et al., 2007).

### ***7.1.2. Life satisfaction of people with MHP compared with the general population, and sense of coherence as a predictor of life satisfaction***

Much of the previous research in the mental health field has focused on mental health issues or symptoms. A generic instrument, such as the Quality of Life Scale (Burckhardt et al., 1989), enables the results of different groups, including normative data from the general population to be compared (Orley, Saxena, & Herrman, 1998). This can help researchers and clinicians to focus on the life domains that seem most affected by illness and to develop targeted intervention. Many quality of life scales lack normative data (Baker & Intagliata, 1982; Holloway & Carson, 2002).

To compare the MHP group with the general population group we selected both groups from the same national population at about the same time, although in separate studies. This is an advantage compared with similar studies, which have methodological limitations and subsequently less reliable results, because of their reliance on historical controls provided by previously published national, or other, data instead of concurrent data collection (Evans & Huxley, 2002). However, the findings in this study are based on a cross-sectional comparative design and the question of cause and effect is not settled. Nevertheless, a cross-sectional comparative design is well suited for descriptive purposes and to explore differences between groups on demographical and clinical variables, which allows the generation of further research questions and testing in follow-up studies. A general trend in quality of life research with psychiatric populations is that disorder-specific measures proliferate. Such research has great limitations for the comparison among different groups (Rapley, 2003).

When investigating predictors of life satisfaction, it is necessary to consider the problem of direction. However, the effect does not occur before the cause; the finding that SOC predicts change in life satisfaction is supported by the theory of salutogenesis and results from other research that identify SOC to be a good predictor of life satisfaction and of other well-being and health measures. Theory and/or research may thus contribute to a solution on the problem of direction (Lund, 2002; Polit & Beck, 2004; Polit & Beck, 2006).

### ***7.1.3. Inclusion criteria and generalization of the findings***

Another topic for discussion is the inclusion criteria. Usually, diagnosis is used as a criterion when selecting people for a specific treatment or investigations. In the present study, this was not done for several reasons. Firstly, salutogenic thinking emphasizes the person's history, including the person's perception of the problems and symptoms, rather than diagnosis. Accordingly, each person's qualities, such as being able to engage in dialogue and being judged to be stable enough to participate in a group for approximately six months, were more important. Secondly, by selecting people with a specific diagnosis, the generalization of the findings would be limited. Thirdly, the use of diagnosis in psychiatry may be more insecure than in somatic illnesses because the definitions of psychiatric disease entities themselves are largely based on clinical phenomenology and lack biological validity, while the diagnosis of somatic illnesses is usually based on objective, biological deficit (Meyer-Lindenberg & Weinberger, 2006). Accordingly, a critical problem in psychiatry is that most of the diagnostic patient groups are delineated by descriptive criteria, with the consequence that the groups are heterogeneous and difficult to study with respect to aetiology, phenomenology, and therapeutic outcome. The DSM-IV (American Psychiatric Association, 1994), for example, is a tool that was developed primarily for communication and is strong in reliability but not validity (Hyman, 2000). Further, Bülow and Svensson (2005) revealed a high level of long-term instability; 55% of their sample had a change of diagnosis in a 15-year follow-up study. Diagnosis is supposed to be the basis of prediction of outcome of the disease, and the choice of treatment, yet the research indicates that the current diagnostic system may have considerable limitations with regard to the clinical need for a holistic approach. Recent brain research, showing changes in the brain to be related to specific symptoms, may also indicate that, in the future, one may select treatment that focuses on specific symptoms,



such as treating the hallucinations in schizophrenia, rather than diagnosis (Meyer-Lindenberg & Weinberger, 2006; Hyman, 2000).

Although the sample in the present study is relatively small and based on relatively strict inclusion criteria, the findings should be able to be generalized to residents in the community with various relatively stable, including severe, forms of MHP. This is substantiated by the fact that all the results in the present study were rather similar across the various mental dimension subgroups, according to the SCL-90. However, some of the subanalyses included few persons and we therefore cannot exclude the possibility that the results may vary between subgroups. Nevertheless, the results may not be directly applicable to many people with unstable MHP, and replicated studies are necessary to understand more about the variations of the results and how valid the generalization (external validity) is.

In addition, there were few dropouts, and no statistically significant differences were found in baseline scores of life satisfaction, SOC and mental symptoms, age, gender, education, and cohabitation between those who completed the study and those who dropped out ( $n = 15$ ).

#### ***7.1.4. The instruments***

The three instruments used in the present study consisted of both overall and subscale scores (Table 4). The Cronbach's alpha method was used to evaluate internal consistency. In general, the Cronbach's alpha was satisfying for all the instruments including the subscales. This indicates that, for this study's sample, the subscales tap distinct but related concepts, thus warranting further use and exploration of these instruments, including the

use of the subscales in research among people with MHP. In Paper II, the SOC subscales (Cronbach's alpha 0.80–0.83) were applied to explore whether the effect of the intervention differed among the subscales. It was revealed that the manageability subscale contributed most to the effect. In Paper IV, it was revealed that the meaning dimension contributed most to the prediction of change in life satisfaction.

The Quality of Life Scale has not previously been applied to people with MHP and, in general, the subscales have been rarely used in research. The scale, including the subscales, seems suitable for this population. The Cronbach's alpha for the subscales was between 0.71–0.82, and it was shown that change in the personal, social, and community commitment subscale was most responsive to the SOC's predictive ability. This study therefore encourages the use of the subscales, in addition to the overall scale, in further research.

The SCL-90 was used to describe the participants' mental symptoms at baseline. The Cronbach's alpha was satisfying for the subscales (0.76–0.90) but high (0.98) for the overall score (Global Severity Index), because there was a high number of items. However, it confirmed that the subscales tap distinct but related dimensions and thus may give reliable information of the kind of mental symptoms the participants are struggling with.

In general, one may conclude that the instruments are suitable for this population, based on the arguments above, the low proportion of missing data, and the overall compliance rate.

## **7.2. General discussion of the main findings**

Research has shown that social and personality factors are among the key determinants of health, coping, and life satisfaction. Most previous studies have focused, however, on harmful factors such as adverse living conditions, risk factors, and psychosocial stressors (Lindstrøm, 1992; Seligman, 1998a; Volanen, Lahelma, Silventoinen, & Suominen, 2004), including studies of people with MHP.

Compared with previous research (cf. Section 4.3), one may maintain that the present study has developed knowledge about assessment and treatment in a health promotion perspective of people suffering from MHP. This is the first study that has developed salutogenic treatment principles designed for people with MHP. Accordingly, it is the first study that has implemented such principles and shown that therapy can result in an improved SOC. Further, it shows that people with MHP have a significantly lower overall quality of life (corresponding to their high symptom load) than the general population, on both the total score and the subdimensions measured by the Quality of Life Scale. It is the first study that uses this scale on people with MHP. Finally, it reveals that SOC is a better predictor of life satisfaction in people with MHP than mental symptoms are, thus confirming the predictive ability of SOC in this population. This shows that the health-promoting perspective outlined in this thesis may have important contributions to the reshaping of theory and practice in mental health services—necessary in the face of current challenges.

This thesis had a theoretical framework as a starting point. Judicious use or development of a theoretical framework can illuminate areas that might not otherwise be visible, and it may provide structure and coherence to research and analysis of the findings.

Accordingly, theoretical framework can strengthen research analysis, particularly in the practical application to practice (Polit & Beck, 2004; Taylor, 2004).

### ***7.2.1. The salutogenic therapy principles and the effect on sense of coherence***

In addition to the main theory of salutogenesis, supporting theories were used in the operationalization process from theory to practice (Paper I). One of these is Rogers's experience of person-centred therapy (Rogers, 1957), which advocates that attitudes of unconditional positive regard, accurate empathy, and genuineness, perceived by participants in their helpers, are conditions, and thus necessary for therapeutic progress. It is important to emphasize that these factors, to some degree, have to be present and perceived by participants before applying other therapy principles such as the salutogenic ones.

The salutogenic intervention programme implemented for people with MHP resulted in a statistically significant change in SOC, which was the main outcome. The results from this study and other different intervention studies (Blomberg et al., 2001; Kørllin & Wrangsjø, 2002; Lundqvist, 1995; Sack et al., 1997; Weissbecker et al., 2002) indicate that SOC may be improved by the mode of therapy, and this may indicate that the potential for changing the SOC is not as pessimistic as Antonovsky predicted (Antonovsky, 1987).

In the present study, the manageability component was most affected by the intervention. According to Suominen, Blomberg, Helenius, and Koskenvuo (1999), this component may be more susceptible to volitional processes because, according to the theoretical definitions, manageability depends more than other components on external resources, such as social support, that can be utilized while coping with different challenges. The

study (“guided imagery and music therapy”) of Kørllin and Wrangsjø (2002) also found the highest increase in this subdimension.

In the RCT study, therapy represents a broad causal concept, including aims and intentions. A cause has been defined by Lewis (1975, p.181) as “something that makes a difference, and the difference it makes must be a difference from what would have happened without it”. Accordingly, to identify the therapy as a cause implies that it has a high degree of probability of resulting in improvement. This is an example of a probabilistic (not deterministic) cause concept. The therapy represents a *molar* (total) cause because we do not know, in detail (on the molecular level), what is decisive. Meanwhile, we recognize that the therapy is a cause that may have a particular effect (on the individual level in a concrete context) (Lund, 2002).

Nevertheless, it is important to ask which components of the therapy had an effect. However, it may be difficult to determine whether the salutogenic treatment principles have a specific beneficial effect or whether gains are attributable to the non-specific effects of having a therapeutic relationship and regular contact with mental health professionals and group participants. Studies that use a talk-therapy group based on another type of therapy, in addition to a control group, would shed light on this. The intervention programme in this study was based on Antonovsky’s basic salutogenic thinking, in which SOC is a key concept, and significant change was found in precisely this concept. This supports the assumption that the salutogenic treatment principles have contributed uniquely to the effect, as do the answers in the evaluation form. The fact that the intervention is built on a theoretical framework also supports this conclusion (Lund, 2002; Taylor, 2004), thus supporting the construct validity (cf. Methodological

considerations, Section 7.1). The result of this study confirms Blomberg et al.'s (2001) claim that different therapeutic orientations may promote different processes. In the present study, the process that may lead to change the dependent variable, SOC, may be explained as follows. Through the empowering dialogues, based on the salutogenic therapy principles of comprehensibility, manageability, and meaning, with focus on crucial life spheres, resistance resources, and appropriate challenges, the participants may increase their awareness of their potential, their internal and external resources (increased imaginable competence and manageability), and their ability to use them. Thus, they might learn to use more conscious coping mechanisms, and move towards more comfortable and creative inner adjustment and growth, productive use of emotional energy, more joy, more giving of themselves, and more reciprocal interaction with others. In this way, they may have developed their "salutogenic strengths" and, subsequently, their ability to recuperate.

The evaluation and the change in the SOC, especially the manageability component, support these assumptions about this outlined therapeutic process, and the process may be promoted for those with various stable MHP across different mental symptoms. Despite the positive effect on SOC and the good evaluation of the groups, no effect of the intervention on change in life satisfaction was found. The present study's quality of life concept covers a wide range of domains that are important to an individual's life, such as access to material and social goods, resources and opportunities, and is holistic in scope. This may not directly influence the groups because some of these factors, such as access to material and social goods, are dependent on political decisions. Lehman (1997) supports this when emphasizing that a general quality of life approach may raise quality of life issues that mental health care cannot reasonably be expected to address (e.g., decent

and affordable housing or access to good jobs), and hence may be insensitive to the effects of treatment on quality of life. In addition, in the present study, the change in SOC was the primary outcome, supporting Blomberg et al.'s (2001) notion that different therapies give different outcomes. This may indicate that an intervention programme that also includes interventions at the collective level of the SOC (cf. Chapter 4 and Figure 2) may have a greater impact on life satisfaction.

### ***7.2.2. Low quality of life among people with MHP compared with the general population, and the utility of sense of coherence as a predictor of change in life satisfaction***

The present study revealed that quality of life of people with MHP living in the community is significantly lower than that of the general population in Norway. Similar findings have been found in Canada and the United States (Lehman et al., 1982; Tempier et al., 1998). These findings contrast with one Canadian study that found severely mentally ill people to be quite similar to the general population with respect to quality of life (Caron et al., 1998). However, the samples in this study were drawn from two small French-speaking cities, and the studies may not be clinically comparable because of differences in culture and health systems. The importance of focusing on life satisfaction is supported by the results of the present study that indicate that quality of life in the MHP group is not only considerably poorer than in the general population, but even poorer than groups of physically ill adults, such as people with rheumatoid arthritis, cystic fibrosis, and psoriasis. The only groups to score the same or lower were groups with fibromyalgia and post-traumatic stress disorder (Burckhardt et al., 2003).

Albrecht and Devlieger (1999) explain that many people with serious and persistent disabilities report experiencing good quality of life because of the disability paradox, which is based on a salutogenic understanding of health (Antonovsky, 1987). Achieving high quality of life requires finding a balance between body, mind, and spirit within the self, and on establishing and maintaining a harmonious set of relationships within the social context and the external environment. This secondary gain may mean that the individuals consider enriched meaning in life secondary to the disability condition (Wahl et al., 2005). However, this did not apply to people with MHP. This may indicate that people with MHP do not receive the treatment or have access to the material and social goods, resources and opportunities they need to establish active adaptation (Antonovsky, 1987) and hence improve quality of life. However, the present study reveals that age and quality of life were more strongly positively correlated in the MHP group than in the general population (Figure 1 in Paper III), thus supporting Mercier, Peladeau, and Tempier's (1998) suggestion that age is systematically related to satisfaction, with older people with MHP being more satisfied with their lives than their younger counterparts. This might indicate that adaptation increases with age; as people get used to their symptoms, they find various ways to compensate for problems so that they can get on with their daily life (Heikkinen, 2000). However, other studies suggest that age does not affect quality of life (Atkinson, Zibin, & Chuang, 1997; Caron et al., 1998), and that older people with MHP report greater dissatisfaction with life (Skantze, Malm, Dencker, May, & Corrigan, 1992).

In addition, various symptoms accounted for 42% of the variance in quality of life, whereas other studies have reported up to 30–32% (Awad et al., 1997; Kaiser, 1999; Lehman, 1983). Further, symptoms and quality of life were strongly negatively correlated,



thereby supporting other studies (Bengtsson-Tops, Hansson, Sandlund, Bjarnason, Korkeila, Merinder, et al., 2005; Kaiser, 1999; Lehman, 1983; Norman, Malla, McLean, Voruganiti, Cortese, McIntosh et al., 2000; van de Willige et al., 2005). As various symptoms accounted for 42% of the variance in quality of life, and the dimension subgroups, according to the SCL-90, in the MHP group did not differ significantly in quality of life, this study suggests that the number and intensity of symptoms rather than type markedly influences quality of life.

These findings reiterate that mental health professionals must give priority to developing and implementing intervention programmes that aim to improve the quality of life of people with chronic MHP. Although this and other studies reveal that mental symptoms negatively influence quality of life, it is important to give assistance in addition to reducing symptoms, and to help these people to nurture what is best within themselves and their social supports, to build on their strengths, opportunities, and values, and not just on their problems and limitations.

Few studies have investigated the predictive value of SOC in people with MHP. However, the results from this study confirm the prognostic competence of SOC in people with MHP, thus supporting the conclusion that the SOC questionnaire, in general, shows a relatively high ability to predict (Eriksson & Lindstrøm, 2005, 2006).

In the present study, SOC, as opposed to mental symptoms, seems to be a good predictor of life satisfaction, indicating a causal link between SOC and life satisfaction. Although SOC and symptom load were strongly negatively correlated at baseline, thus confirming previous findings (Lindstrøm & Eriksson, 2005b), it is SOC that predicts the change in life

satisfaction. The meaning dimension in SOC contributed most to the prediction. This indicates that people with MHP, with various degrees of symptom load, who are able to mobilize appropriate resources effectively (a higher SOC) to deal with various symptoms and challenges in everyday life, and who experience meaning in doing this, attain higher life satisfaction. In addition, SOC's predictive ability seems independent of the type of symptoms. This strengthens the view that SOC provides strength to deal with an already existing impediment that seriously taxes life satisfaction, such as various MHP, thereby sustaining good health (Johnson, 2004). Accordingly, the results support the theory of salutogenesis among people with MHP, namely that SOC predicts well-being and life satisfaction, and that the meaning dimension is the most important.

It may be that symptom load is not a significant predictor, as it is necessary to have the presence of salutogenic factors to achieve life satisfaction. Hyland (1992) emphasizes that the absence of symptoms does not necessarily mean a happy life, while the presence of symptoms does not necessarily mean an unhappy life. One may be both happy and unhappy, but not at the same time. Symptoms do not always cause problems, as the relationship between these two variables is moderated by other psychological factors, such as coping strategies (Hyland, 1992).

Thus, it is suggested that SOC may be a stronger predictor of life satisfaction and health than other coping factors, because of its broad salutogenic constitution and its particular unique combination of cognitive, behavioural, and motivational attributes. Antonovsky (1987) reflects on this relationship and confirms that SOC is linked to life satisfaction, though not necessarily directly causally, but he emphasizes that many of the GRRs that promote a strong SOC are directly related to well-being. This supports the view that

interventions at both the individual and the collective levels that may improve SOC could subsequently improve life satisfaction. These findings emphasize the importance of assessing factors that might explain differences in life satisfaction, over and above mental symptoms in people with MHP. The results indicate that improving SOC among people with MHP might provide important opportunities for improving their life satisfaction. Accordingly, it is suggested that therapy that promotes SOC may subsequently improve life satisfaction. However, it is important to emphasize that, in order to study whether an increase in SOC results in an increase in life satisfaction, a follow-up study over a longer period would be needed. It is important to stress that further research is necessary to shed light on whether improvement of SOC subsequently creates higher life satisfaction.

## **8. CONCLUSIONS**

The studies included in this thesis reveal the significance of focusing on salutogenesis, including its central concepts of SOC and life satisfaction, in addition to mental symptoms in people with long-lasting MHP, and thus contributes to increased knowledge of mental health assessment and treatment in a broad health promotion perspective. This is shown by:

- the development of salutogenic therapy principles and by demonstrating the effect of these principles in talk-therapy groups;
- revealing the difference in life satisfaction between the MHP group and the general population, and the relationship between various symptom dimensions and quality of life in the MHP group; and
- identifying that sense of coherence predicts change in life satisfaction while mental distress shows no prediction.

### **8.1. Clinical implications for mental health care**

Because most treatment of MHP takes place in the community, there is a call for the development of knowledge in mental health care, especially in health promotion and recovery processes. The present study supports the significance of this demand by showing the importance and utility of focusing on coping as a SOC and life satisfaction in a salutogenic perspective. The present study has used the theory of salutogenesis as a theoretical framework for mental health promotion intervention including salutogenic therapy principles and a programme outlined in Paper I, and has been evaluated in a randomized controlled trial study, showing positive effects on SOC. Thus, this intervention may serve as a guide to mental health practice when coping is the main target, because it guides mental health professionals to ask and interpret people's experiences with reference to their health potential and their perception of themselves primarily as a person, thus trying to maximize their resistance to stress, increase their awareness and use of resources, help them manage tension, and consequently promote a stronger SOC, coping, and mental health. This should encourage professional mental health workers to apply salutogenic therapy principles at both individual and group levels because that may increase SOC and life satisfaction. To facilitate the salutogenic process, the relationship between professional mental health workers and their clients must be seen as a partnership rather than the traditional hierarchical health care provider–health care receiver relationship.

The theory of salutogenesis can be regarded as a theoretical tool and framework for a positive mental health concept, mental health promotion, and for the mental health care profession because it has the potential to illuminate how the new ideology (including both

recovery research and current national policy framework for mental health care) might be realized. It gives a robust description of how coping on individual, collective, and interdisciplinary levels may be created by focusing on the availability of salutogenic strengths that enhance SOC, and it includes challenge and engagement as natural parts of life. A SOC is considered to be vital to positive mental health as it involves the capacity to respond flexibly to stressors. Subsequently, a salutogenic understanding of mental health promotion and coping with MHP might contribute to a collaborative approach to its management. The present thesis shows how people with mental health problems in the community could apply salutogenic thinking to increase their participation in their own development and trust in their own potential for coping.

To increase life satisfaction in people with MHP, treatment of symptoms is important, but the outcome might improve if treatment also focuses on other factors such as the GRRs that may affect life satisfaction. Accordingly, if a person's mental symptoms were targeted while other factors related to life satisfaction were neglected, a poor treatment outcome might result. However, in a salutogenic perspective, mental symptoms may be perceived as a resource because they may create an opportunity for reflection and a chance to explore the circumstances around the symptoms, such as the contexts in which the symptoms occur, diminish, or disappear. From this, it may be concluded that to improve SOC and life satisfaction, treatment programmes should aim to improve and strengthen salutogenic factors such as social support and ego identity, in addition to reducing symptoms.

SOC and life satisfaction seem to be significant variables in the assessment and treatment of people with MHP. In addition, this health-promoting perspective stimulates questions

as to how much importance professional mental health workers attach to resource-activating methods, and the extent to which they recognize and foster mental health and life satisfaction aspects among their patients.

## **8.2. Implications for further research**

This study encourages further research to increase knowledge in different areas. Firstly, the theory of salutogenesis could be operationalized into salutogenic therapy principles and intervention programmes in a number of different ways, in order to achieve further clarification. It is important for the development of this kind of therapy that further research is done to increase the clarification, alternatives, and possibilities for increasing SOC, mental health, and life satisfaction. Secondly, the salutogenic therapy principles need to be replicated in larger studies to analyse the effect and to determine if any component of the intervention is more effective than the others. Such studies should last for a longer period of time to determine whether the change in SOC is permanent and whether a higher SOC results in any long-term effect on life satisfaction. In addition, it would have been advantageous to include a talk-therapy group based on another type of therapy, in addition to a control group, in order to determine whether the salutogenic therapy principles have a specific beneficial effect or whether gains are attributable to non-specific effects of having a therapeutic relationship and regular contact with mental health professionals and group participants.

Thirdly, we need more knowledge about the impact of MHP on QOL and factors or processes that may limit the impact of MHP. Studies comparing quality of life, defined here as general satisfaction with life, between the general population and community residents with MHP have been few and contradictory. Such research is crucial because it

can shed light on the life domains most affected by MHP and subsequently help in developing targeted intervention. Accordingly, further investigation is required on this topic.

Fourthly, because of its predictive value, some researchers have proposed the SOC to be a good screening instrument (Eriksson & Lundin, 1996), as well as a useful clinical indicator when assessing vulnerable populations (Andrèn & Elmstål, 2005; Wolff & Ratner, 1999). The SOC is also considered an important concept in assessing people's ability for self care (Fok, Sek, & Lopez, 2005). The results of the present study support these suggestions. Thus, using the SOC as a screening instrument is perhaps justified, but there is still the problem of interpreting the individual position on the continuum between health and illness. It is not clear at what point SOC fails to help move people towards the healthy end of the scale (Eriksson & Lindstrøm, 2005). Further research is necessary to shed light on this topic.

In conclusion, the importance and utility of a salutogenic orientation, including life satisfaction, needs to be explored further. The results from the present and other studies indicate that this approach seems to have crucial assets that might help avoid limitations of the established disease-oriented approach and promote new directions of investigation, including a better understanding of the complex relationships between salutogenic factors and mental health, and other current challenges in improving coping via the sense of coherence and life satisfaction in people with MHP.

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# Paper I

## **PROMOTING COPING: SALUTOGENESIS AMONG PEOPLE WITH MENTAL HEALTH PROBLEMS**

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*This article aims to illustrate how Antonovsky's salutogenic theory and its central concept of sense of coherence can be operationalized into salutogenic therapy principles and an intervention program for promoting a sense of coherence, coping, and mental health among people with mental health problems. The intervention is based on the following five basic components or therapy principles: (1) the health continuum model; (2) the story of the person; (3) health-promoting (salutary) factors; (4) the understanding of tension and strain as potentially health promoting, and (5) active adaptation. The program is a talk therapy group intervention and consists of 16 group meetings and homework. The intervention may serve as a guide to mental health nursing practice when coping is the main target.*

In thinking about recovery, it has been claimed that traditional therapy has given too much attention to the feelings connected with earlier adverse life events and to diagnosis and medication, and too little to the future potential associated with a person's resources and coping (Bengtsson-Tops & Hansson, 2001; Judd, Frankish, & Moulton, 2001; Schofield, 1999). The user perspective underlines this view (Ahern & Fisher, 2001; Powell, Holloway, Lee, & Sitzia, 2004; Watkins, 2001).

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Various new concepts and philosophies have emerged in the search for a complement to traditional therapy, including positive psychology (Aspinwall & Staudinger, 2003; Snyder & Lopez, 2002), empowerment (Ahern & Fisher, 2001; Kendall, 1998; Schofield, 1999), resilience (Lindstrøm, 2001), and salutogenesis (Antonovsky, 1987, 1996).

Three healing factors have been identified as important in the recovery process (Anthony, Cohen, & Farkas, 1994; Strauss, 1996). These factors are that participants (1) perceive themselves as something other than just a diagnosis and a disease, (2) explore themselves with respect to their whole person and (3) take control over their own lives. Data from 40 years of research provide strong empirical support for the benefits of privileging the role of participants in the process of change. As a result, treatment should be organized around participants' resources, perceptions, experiences and ideas (Aspinwall & Staudinger, 2003; Duncan & Miller, 2000; Hubble, Duncan, & Miller, 1999).

The theory of salutogenesis gives a generic understanding of how sense of coherence (SOC, the central concept in salutogenesis) and coping may be created, and focuses on pathways that lead to successful coping and health. The Sense of Coherence Questionnaire (Antonovsky, 1987) has been used in many intervention studies in mental health to measure outcomes (Blomberg, Lazar, & Sandell, 2001; Kørllin & Wrangsjø, 2002; Lundqvist, 1995; Sack, Kunsebech & Lamprecht, 1997; Weissbecker, Salmon, Studts, Floyd, Deder & Sephton, 2002). However, to the best of our knowledge, salutogenic therapy principles have not previously been described in the literature.

There is some literature on the various aspects of the application of salutogenesis. For example, one study has tried to adapt the core concept of SOC as a theoretical basis of already established psychological education in schizophrenia (Landsverk & Kane, 1998). Another study has used elements of the salutogenic thinking in creating empowering dialogues in general practice (Malterud & Hollnagel, 1999). Bengel, Strittmatter, and Willmann (1999) emphasize that developing salutogenic therapy principles and intervention programs is of great importance for the future development of salutogenesis in the recovery framework. Researchers have concluded that the most immediate research now should be to implement the theory into practice, such as in mental health promotion (Erikson & Lindstrøm, 2005; Lindstrøm & Erikson, 2005).

Theory is a frame of reference that is crucial in research and in evaluating programs. An intervention is not ready to be evaluated unless the theoretical basis of the intervention has been developed and carried out. Judicious use of a theoretical framework can illuminate areas that might not otherwise be visible (Taylor, 2004). Therefore, the purpose of this

article is to illustrate how the theory of salutogenesis can be operationalized into salutogenic therapy principles and an intervention program for promoting SOC and coping among people with mental health problems. This intervention has been evaluated in a randomized controlled trial study, showing positive effects on SOC (Langeland, Riise, Hanestad, Nortvedt, Kristoffersen, & Wahl, 2006). The intervention may serve as a guide to mental health nursing practice when coping is the main target.

## **THEORETICAL FRAMEWORK**

### **The Theory of Salutogenesis: Basic Assumptions**

The theory of salutogenesis as proposed by Antonovsky (1987) represents a broader perspective on health than traditional pathogenic orientation. Antonovsky does not view health as a dichotomous variable but as a health continuum, striving to explain what makes a person move towards the healthy end of the continuum and thus increase his or her SOC and promote coping. The focus is on the story of the person rather than the diagnosis. The person is understood as an open system in active interaction with the environment (both external and internal conditions). Tension and strain are viewed as potentially health-promoting rather than illness-creating. The environment is the source of both stressors and resistance resources. The theory emphasizes the use of potential and existing resistance resources and not only focuses on minimizing risk factors, but also emphasizes active adaptation as the ideal in treatment (Antonovsky, 1987). Mental health nurses are not explicitly discussed in the theory of salutogenesis but may be implied as an element of the resistance resources in the external environment (Sullivan, 1989).

### **Core Concepts: Sense of Coherence and General Resistance Resources**

#### *Sense of Coherence*

In the light of his research, Antonovsky claims that a person who copes well has a high SOC. He defines SOC with three subdimensions. These subdimensions are a global orientation that expresses (1) comprehensibility, or the extent to which one has a pervasive, enduring, but dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) manageability, or the extent to which resources are available to one to meet the demands posed by these stimuli; and

(3) meaning, the extent to which these demands are challenges, worthy of investment and engagement (Antonovsky, 1987). The third subdimension, meaning, refers to the extent to which a participant feels that his or her life makes sense emotionally. Antonovsky emphasizes that this component is the most important part of the SOC concept. When participants perceive at least some of life's problems and demands as worthy of commitment and engagement, they have a greater sense of meaningfulness, and typically a greater sense of the other two components (comprehensibility and manageability) as well.

The theory emphasizes four spheres in human life in which people must invest if they do not want to lose resources and meaning over time: inner feelings; immediate personal relations; major activity; and existential issues (Antonovsky, 1987). This means that it is important to be able to form a view of life (ideological, religious, or political), to know people one perceives are supportive (the function of social support), to have mental stability, and to be involved in rewarding everyday activities (work, sports, education, etc.) (Lindstrøm, 2001).

### ***General Resistance Resources***

The theory also has identified general resistance resources (GRR) that are crucial in the development of the SOC. GRR can be defined as any characteristic of the person, group, or environment that can facilitate effective tension management. The GRR are:

1. Physical and biochemical; Antonovsky refers to the possible link between the GRR and the successful coping with tension as immunopotentiating mechanisms.
2. Material; goods such as food, clothing, and accommodation.
3. Cognitive and emotional; knowledge, intelligence, and self-identity. The theory stresses self-identity as a crucial coping resource. Knowledge gives insight and actualizes choices.
4. Valuatative; attitudinal, such as coping strategies characterized by rationality, flexibility, and foresight, including active action and the effective management of emotions.
5. Interpersonal-relational; people who have close ties to others resolve tension more easily than those who lack that quality in their relationships. The certainty about the availability of social support is often sufficient for this to be an effective component of GRR. Social support is a crucial coping resource.
6. Macro sociocultural aspects; an individual's culture that gives him or her a place in the world and is health-promoting and where the GRR are available at different levels (Antonovsky, 1979).

People who have access to and the ability to utilize the GRR, in themselves or in their environment, will manage tension and perceive experiences that stimulate the development of a high SOC. SOC thus has ramifications at both the individual and collective level.

### **Supporting Theories**

Based on the theory of salutogenesis, the following theories are used as support in the operationalization process. One theory of social support (Weiss, 1974) supports the operationalization of social support, which Antonovsky regards as a vital coping resource. Both researchers underline the importance of the quality of social support. Rogers' experience of person-centered therapy (Rogers, 1957) corroborates the fact that attitudes of unconditional positive regard, accurate empathy and genuineness perceived by participants in their helpers are necessary for therapeutic progress. Bandura's (1991) self-efficacy theory points to various ways of strengthening, in the group process, Antonovsky's other vital coping resource, self-identity, by using the five unique capacities through which he claims a person learns: self-regulation, symbolizing, vicarious learning, forethought and self-reflection (Antonovsky, 1991). Narrative therapy (Anderson & Goolishian, 1988, 1992; White, 1991) provides tools to encourage participants' awareness of their coping histories and thus to increase their consciousness of their internal and external resources. Interventions drawn from solution-focused therapies can be effective when the aim is to increase participants' insight into their coping ability (de Shazer, 1991; Watkins, 2001). Thus, these approaches support, supply and emphasize the interpretation and operationalization of the theory of salutogenesis.

## **IMPLEMENTATION OF THEORETICAL PERSPECTIVES**

### **Aim of the Intervention**

Antonovsky's (1987) theory has been operationalized in an intervention program for people with mental health problems. The main aim of the intervention is to increase participants' awareness of their potential, their internal and external resources, and their ability to use them, and thus to increase their SOC, coping, and level of mental health. The intervention is developed for people with various, relatively stable, mental health problems who are able to have a dialogue and live in the community but need support from the health system. The concept of mental health problems used here typically encompasses

mental suffering, mental illness, mental disorders, and psychosocial problems.

### **Talk Therapy Groups**

The intervention is a talk therapy group, with mental health nurses as group leaders. In talk therapy groups, a central ideal is that conversations are characterized by being a therapeutic dialogue (Egan, 2002). The groups are characterized by mutual, egalitarian relationships, where the tenor of conversations between the group leaders and the participants is similar to those between the participants themselves (Antonovsky, 1990; Gilligan & Price, 1993; Rogers, 1980). The reason for choosing a group as the method is the beneficial effect of symbolic interactionism (Blumer, 1969). Yalom (1975) claims that there are 11 interdependent therapeutic group aims: to give hope, encourage universalization, share information, engender altruism, try new approaches, develop social competence, promote vicarious learning, promote learning between people, encourage group solidarity, achieve catharsis, and encourage existential viewpoints.

### **The Role of the Group Leader**

The group leader is an expert in creating a conversational and interactional climate that will promote desirable change in the participants. By acknowledging her or his inability to know the participants' "truth," the leader conveys unconditional positive regard by respecting that the participants are experts on themselves and their unique situations and experiences, including their pain, suffering, and concerns (Powell, Holloway, Lee, & Sitzia, 2004; Rogers, 1957). In a salutogenic perspective, the group leader functions more as a dialogue partner, balancing between listening empathetically to participants' difficulties and taking into account their strengths and resources (Hubble, Duncan, & Miller, 1999).

### **THE MENTAL HEALTH-PROMOTION PROCESS: SALUTOGENIC THERAPY PRINCIPLES**

Basic assumptions in salutogenic theory, including the core concepts and supporting theories, may be operationalized into salutogenic therapy principles as illustrated in Table 1.

The five basic components or therapy principles in this intervention are as follows: (1) the health continuum model; (2) the story of the person; (3) health-promoting (salutary) factors; (4) the understanding



**TABLE 1.** A Mental Health Promotion Process in Talk Therapy Groups Based on the Theory of Salutogenesis

Salutogenesis: Basic assumptions including the core concepts of sense of coherence, general resistance resources, and supporting theories	Salutogenic therapy principles in the group process in the context of everyday life	Desired outcome: Improving sense of coherence, coping, and mental health
1. Health as a continuum Solution-focused therapy General resistance resources	Focusing on moving towards the health pole Universalizing mental health problems Introducing the metaphor of the stream of life	Increasing tolerance for various feelings Improving adaptive coping
2. The story of the participant Narrative therapy Person-centered therapy	Encouraging the perception of diagnosis as a narrow description of reality Listening to the participant's experience in an open, accepting manner Listening to the participant's narrative identity; shedding light on his or her coping ability	Experiencing herself or himself primarily as a person Structuring life experiences that reinforce the sense of coherence Increasing the perception of coping in the narrative identity
3. Health-promoting (salutary) factors Solution-focused therapy General resistance resources The provisions of social relationships	Extending coping resources Paying attention to what is currently functioning well in participants' lives Asking questions to increase awareness of coping resources Generally promoting resistance resources, especially: social support and self-identity, focusing on action and choice by participants	Improving self-identity Increasing perception of the quality of social support such as attachment, social integration, opportunity for nurturing, reassurance of worth, reliable alliance and guidance
4. Stress and strain as potentially promoting health	Discussing appropriate challenges Universalizing the feeling of tension	Increasing acceptance of one's own potential and coping ability Experiencing one's own resources

*(Continued on next page)*

**TABLE 1.** A Mental Health Promotion Process in Talk Therapy Groups Based on the Theory of Salutogenesis (*Continued*)

Salutogenesis: Basic assumptions including the core concepts of sense of coherence, general resistance resources, and supporting theories	Salutogenic therapy principles in the group process in the context of everyday life	Desired outcome: Improving sense of coherence, coping, and mental health
5. Active adaptation	Promoting a climate of unconditional positive regard, empathy and genuineness	
Person-centred therapy	Developing participants' unique capacities: self-regulation; symbolizing; vicarious learning; forethought; and self-reflection	Increasing perception of comprehensibility, manageability and meaning; improving the sense of coherence
Self-efficacy		
Sense of coherence	Developing crucial spheres in human existence: Inner feelings; immediate personal relations; major activity; and existential issues	

of tension and strain as potentially health promoting; and (5) active adaptation (Antonovsky, 1987).

## Health as a Continuum

### *Focusing on Movement Towards the Health Pole*

In a salutogenic perspective, mental health refers to the location, at any point in the life cycle, of a person on a continuum ranging from excruciating emotional pain and total psychological debilitation at one extreme, to a full, vibrant sense of psychological well-being at the other (Antonovsky, 1985). The main focus is on the dynamic interaction between resistance resources and stressors in human life and how to move the participants to the healthy end of that continuum. This can be done, for example, by asking a rating question: "On a scale of 0 to 10, where 0 is the worst and 10 the best you have ever felt, how do you rate yourself today?" If the answer is 4, you may ask why the answer is 4 and not 2. In this way, attention is focused on the possibilities and what is functioning well in the person's life. The next question may be: "What do you need to do to move yourself up to 5?" (Watkins, 2001).

### ***Universalizing Mental Health Problems***

People have different levels of health, but on the same continuum. This universalism is a precondition to understanding and judging another participant's expression. Examples of topics the participants and the leaders may recognize as universal in everyday life are: existing and possible new relationships, organizing the day, receiving criticism and praise, balancing activity and rest, practicing self-care, and coping with sleeping problems. To illustrate universalism, Antonovsky uses the following metaphor, which can be presented to a group.

#### ***Introducing the Metaphor of the Stream of Life***

All human beings are in a river that is the stream of life. Nobody stays on the shore. There are forks in the river that lead to gentle streams or to dangerous rapids and whirlpools. The crucial, salutogenic question is: "Wherever one is in the stream, what shapes one's ability to swim well?" (Antonovsky, 1987). This way of looking at life may be useful in group work because the participants can easily identify with it, and thereby acknowledge and accept their own ups and downs and focus on adaptive coping (how to swim well) in everyday activity.

### **The Story of the Participant**

Mental health nurses can help people to structure life experiences in such a way as to reinforce their SOC (Sullivan, 1989). A person's individual story is important because only in the awareness of his or her life situation can the resources that contribute to recovery be found and fostered (Bengel, Strittmatter, & Willmann, 1999). The pathways to recovery are uniquely defined by each person for himself or herself and need to be holistic in scope because mental health problems are complex interactions of mind, body, and spirit that are unique to each individual (Ahern & Fisher, 2001). Accordingly, the focus is on participants as a whole and their own experience. Participants use their own words and describe their inner lives.

#### ***Encouraging the Perception of Diagnosis as a Narrow Description of Reality***

Salutogenesis underpins the importance of acknowledging the participant primarily as a person and mobilizing his or her strengths, so that the person's resistance resources are given the best possible conditions in the fight against illness and suffering (Malterud & Solvang, 2005). However, many participants can experience themselves only as psychiatric patients and/or a diagnosis. Identifying the whole person by

one characteristic reduces people by labeling them. Ahern and Fisher (2001) confirm this problem and call it a barrier to recovery. They state that people in a recovery process may view every expression of emotion or change in mood as a symptom of an illness in remission that can return at any time. In this context, it may be helpful to encourage the perception of diagnosis as a narrow description of reality (White, 1991, 1997). The aim is to look at various feelings as parts of being a normal human being and thus to accept the experiences as positive. This is an important part of becoming a person (Rogers, 1961). The participants are given assistance in discovering themselves as whole people. In this respect, leaders have an important task as a role model (Bandura, 1991). The expression by the therapist of feelings that are genuine and from the heart can be pivotal because the therapist may contribute to universalizing various feelings.

### ***Listening to the Participant's Experience in an Open, Accepting Manner***

Not knowing about the diagnosis and the case history may be an advantage for group leaders. Then, it is easier to meet participants in a freer, more open, and less prejudiced manner. Rogers (1961) confirms this experience when he claims that diagnosis may be more of an obstacle than help. At the start of a group, leaders only need to know that the participants are struggling daily with mental health problems and need some kind of help and support.

### ***Listening to the Participant's Narrative Identity: Shedding Light on his or her Coping Ability***

Stories are gross simplifications. To illustrate this, one may use the figure or ground metaphor; a story may be perceived as a figure that appears based on a background. When a participant's story is problem-saturated, it may be important to ask for alternative stories, out of which another figure may appear, unique to the situation, and in which the person perceives meaning and coping (White & Epston, 1990). Then the person's narrative identity begins to change through new stories as a result of the dialogue (Anderson & Goolishian, 1988). The salutogenic perspective focuses on how to activate, emancipate, and increase participants' perceptions of their resources and potentials that are on the edge of their awareness (Rogers, 1961). It can be said that this process can shed some light on other parts of participants' experiences. All experience is real, but we cannot shed light on the whole experience at the same time. Thus, one may say that this therapy is insight-oriented, because it sheds light on the person's coping ability. The participants have little

insight into these abilities when they are standing in the shadow of the history of their dominant problem (Kolseth, 2001).

It is, however, important to stress that participants' experiences should be acknowledged and validated before they will open up to new possibilities and directions (Gilligan & Price, 1993; Rogers, 1957). Subsequently, from an empathetic stance, the leader may encourage participants to create an identity that has coherence and meaning for them. Participants themselves must choose whether they want to integrate an alternative story as a part of their identity (Lundby, 1998).

## **Health-Promoting (Salutary) Factors**

### ***Extending Coping Resources***

The salutogenic orientation leads to thinking in terms of factors that promote participants' movement toward the healthy end of the continuum (see GRR and the health continuum model). We cannot limit the promoting of health to being low on risk factors, because health-promoting factors actively contribute directly to health (Antonovsky, 1996). This approach can be operationalized in the groups by focusing on adding resources in contrast to revealing the causes of problems. The cause(s) of the problem do not need to be found before a possibility for coping is found. An example may be a man who is suffering from voices in his head. A central question may be what other voices he can add, rather than how he can dispel the existing voices. The critical skills in controlling the voices are the man gaining a sufficient voice of his own in his social environment, and consequently feeling stronger than both the voices inside and the voices outside (Romme & Escher, 1993).

### ***Paying Attention to What is Currently Functioning Well in Participants' Lives and Asking Questions to Increase the Awareness of Resources***

It is essential to pay attention to what is functioning well in participants' lives, focusing on the good experiences in preference to the bad, and drawing out the optimistic potential from problem-saturated stories (de Shazer, 1991). The main point is to ask questions that stimulate the person to think of his or her resources or possible resources or to invite him or her to "conjure up" or wishfully think such resources into being. The persons may be helped to identify current strategies by asking solution-focused questions (Watkins, 2001). The leader may, for example, ask a participant who suffers from depression: "How do you manage to endure despite your suffering?" Another example is the woman who talks about suffering from anxiety. She may be asked what is happening

when her symptoms of anxiety decreased and whether she can describe situations where she has feelings of well-being and is not suffering from anxiety. In that way her experience of her own coping resources and well-being can be increased. The next question may be whether the participant can apply these experiences to new situations.

Another example is to ask a question that takes the problem away — the miracle question (de Shazer, 1991). The group leader may say: “Now I will come with a curious question. It’s evening and you go to bed. While you are sleeping, your suffering disappears without you knowing it. When you wake up — how will you recognize that your problems are gone? How will your environment recognize it?” A question like this allows the person to bring more of the previous unproblematic experiences into the conversation; thus, the goals developed from the miracle question are not limited to just eliminating the problem.

### ***Generally Promoting Resistance Resources, Especially Social Support and Self-Identity, Focusing on Action and Choice by Participants***

Self-identity and social support appear as the most direct coping resources (Antonovsky, 1979). Social support is a crucial coping resource, and one key aim in talk therapy groups is to establish a good climate so that participants can develop positive connections to their natural supports. Weiss (1974) supports Antonovsky’s view on social support and has identified six social functions or “provisions” that may be obtained from relationships with others. An attempt may be made to apply these six relational provisions in the groups to facilitate health-promoting interaction and communication. The provisions are: attachment, social integration, opportunity for nurturing, reassurance of worth, reliable alliance, and guidance. The leaders may, for example, focus on whom the participants refer to as helpful in their daily life or what they do to get people to help them. A leader also may try to increase the awareness of opportunities for nurturing. Focusing on this will increase participants’ awareness of their resources and then strengthen their sense of manageability and self-identity.

Action enhances the self-identity and confirms who the participants are, according to Lundby (1998). If a participant, for example, carries out an action that represents a new, good experience for him or her, his or her self-identity will improve. Being encouraged towards constructive action is basic in the gradual process of changing self-identity. Undertaking choices is another factor that enhances self-identity and mental health. Increasing participants’ consciousness of their own possible choices can therefore be key in the groups. Choice may be defined as an active, reflected decision with respect to alternatives. Self-regulation by setting

limits may be an important issue for many participants, such as how to decline an invitation. A key topic, then, is proposing alternatives on how participants can regulate themselves, to choose among the proposals, and to take responsibility for the choices. Responsibility emancipates resources and thus creates hope for the future (intentionality).

### **Tension and Strain as Potentially Health Promoting**

Implicit in the theory of salutogenesis is the view that tension and strain are potentially health-promoting. Stress factors are ubiquitous (see the metaphor about the stream of life).

#### ***Discussing Appropriate Challenges***

The participants are challenged to adapt to a variety of stressful circumstances because exposure to stress factors (such as new people and experiences) is a necessary part of maturation (Ahern & Fisher, 2001). The theory of salutogenesis distinguishes between tension and stress. When demands exceed a person's resources or, more precisely, a person's ability to use his or her resources, then the tension leads to stress and the person moves towards a lower level of health. Setting appropriate challenges is of great importance in creating life experiences that promote a SOC and coping ability, because both overload and a lack of engagement or stimulation lead to stress (Antonovsky, 1987).

#### ***Universalizing the Feeling of Tension***

This view of tension and stress as beneficial and normal is reflected in the leader's attitude: for example, the feeling of tension participants may experience in a group, particularly in the beginning, can be generalized by the leader acknowledging and emphasizing that this is a normal feeling. Leaders also can admit that they sometimes feel tension in a group. Such admissions may contribute to universalism and may thus be a release for the participants.

### **Active Adaptation**

A basic argument in the salutogenic approach is the therapist's attitude to treatment. In the salutogenic orientation, the focus is on the person, with his or her unique history and overall problem of active adaptation to an inevitably stress-rich environment. Each person needs to be treated based on his or her position and perception in life.

### ***Promoting a Climate of Unconditional Positive Regard, Empathy, and Genuineness***

The basic, general, active attitudes of unconditional positive regard, accurate empathy, and genuineness, offered by the helper and perceived by the participants, are necessary for creating a climate that fosters therapeutic progress (Rogers, 1957). The provider of care must be highly empathetic and sensitive to the process of relating to the participants as whole people.

### ***Developing Participants' Unique Capacities: Self-Regulation, Symbolizing, Vicarious Learning, Forethought, and Self-Reflection***

The most important element in people's motivation to change is their expectation that their actions will produce desired results. This belief in themselves determines their initial decision to work on their problems, to expend effort, and to be persistent in the face of adversity (Bandura, 1991). The five unique capacities through which a person learns are self-regulation, symbolizing, vicarious learning, forethought, and self-reflection (Antonovsky, 1991). These potentialities may be used consciously when working with active adaptation in the groups. Antonovsky perceives the human being as an open self-regulating system. A person with a high level of health manages self-regulation. Self-reflection is an essential tool for constructing coping stories and for people helping each other through the creative process to find external and internal resources in the active adaptation to various challenging situations. Self-reflection strengthens self-identity and self-worth. The aim is to increase symbolization by grasping the knowledge that exists on the edge of the person's awareness. Participants may learn by listening to each other and by living vicariously through each other's experiences and that of the group leader's. An example of the latter is when participants reflect on the ability to nurture and one of the participants says to another: "I experience that you are such a caring person." The participant shows that she appreciates the positive feedback.

### ***Developing Crucial Spheres in Human Existence: Inner Feelings, Immediate Personal Relations, Major Activities, and Existential Issues***

An important part of personal development and recovery is that participants themselves take control of their own development (Anthony, Cohen, & Farkas, 1994). That is why it may be a main objective in the groups to try to increase participants' awareness of and investment in crucial topics (inner feelings, immediate personal relations, major



activities, and existential issues) in their daily living and then hope to increase their SOC and coping skills (Antonovsky, 1987).

## THE STRUCTURE OF THE PROGRAM

The program consists of 16 group meetings and homework. The meetings focus on and aim to create SOC and coping. The first part is relatively non-directive because the participants should get the opportunity to discuss challenges that are important for them here and now in the context of everyday activity (Rogers, 1957). In the last part, homework is the main content. Table 2 shows the structure of the program. The homework is based on the crucial spheres in human existence, and the participants are invited to write a reflective note about the given topic. Table 3 shows examples of the content of the homework. The homework may function as an inner voice like a continuation of the group and thus increase the impact of the group.

The first meeting is an introductory session in which the focus for the intervention and structure are presented and the participants and group leaders are introduced to one another. The last meeting is a summary session in which the intervention is evaluated as a whole. No firm guidelines indicate how many sessions such a group program should comprise. The most important criteria is, however, that there are enough sessions to stimulate the cognitive and emotional processes of positive change among the participants that may continue for long afterwards.

Table 3 illustrates an example of topics and goals for 16 sessions. It is based on the structure of the groups showed in Table 2 and should be understood in the context of the theoretical framework and the mental

**TABLE 2.** Structure of Every Session

- 
1. A here-and-now round: Each participant is given an opportunity to explain how he or she feels and with what he or she is engaged in daily life.
  2. Decide on the basis of the round (above) whether themes have emerged on which to reflect and explore thoroughly.
  3. Conversation about a chosen topic, situation or experience.
  4. 15-minute break.
  5. Conversation about the topic based on a reflection note the participants prepare for homework (second and subsequent sessions).
  6. Assign homework for the next session. The participants are encouraged to write a reflection note about a given task (all sessions except the last).
  7. Each participant is given the opportunity to discuss their experience with the group.
-

**TABLE 3.** An Example of an Intervention Program

Session	Content part 1: Examples of themes that may emerge at the here-and-now round	Goals	Content part 2: Homework	Goals
1	Presentation Information and conversation about structure and focus	Becoming acquainted with the others and familiar with the intervention as a whole	Explaining and discussing the homework and assigning the first homework	Seeing the point and aim of the homework and thus creating motivation
2	How to cope with such feelings as boredom, loneliness, and sadness	Accepting and taking into account various natural feelings Being aware of what happens when these feelings decrease and other feelings occur	What are you doing in everyday life with which you feel comfortable? What do you need to actualize your wishes or needs?	Increasing awareness of activities that create good experiences and being aware of needs to actualize more of this
3	Discuss opportunities for getting paid work	Experiencing how others may give guidance that may be useful	Describe an event from the last week in which you felt satisfied with yourself	Paying attention to inner feelings of satisfaction and coping
4	Coping stories: A participant tells a story about how she has coped with being afraid of the dark	Paying attention to coping stories and investigate whether these may be utilized in other situations	Think of people whom you nurture during the week	Being aware of the ability to contribute in personal relations
5	How to cope with feelings perceived as symptoms, such as anxiety or voices in the head What happens when the symptoms decrease?	Considering the value of taking control of one's own situation and strengthening the feeling that there is a way out of difficulty	If you were given the possibility to choose freely, what would you want to do?	Being aware of needs and wishes

- 6 How to cope with a important meeting with the Social Security office
- 7 Good relationships: A participant tells about good relationships with his or her grandchildren
- 8 How to receive praise from a participant in the group
- 9 Choice: Being aware of options for coping with a difficult situation in a mother-daughter relationship
- 10 How to set limits towards a friend in a polite but determined manner
- Strengthening the ability to plan and manage a challenge
- Being aware of how social relations may affect the quality of life and coping
- Daring to open up and perceive positive feedback and thus feel reassurance of worth
- Considering the value of being active and taking responsibility for one's choices
- Being conscious of the possibility for self-regulation
- What would you answer if someone asked you what you are doing in your everyday life?
- Describe what you experience on a good day
- Think of something or someone who means a lot to you: What do you appreciate about this contact?
- What is important for you in your life?
- How do you take care of your needs for activity and rest?
- Being aware of the activities of daily living and being prepared for a imagined situation in a relationship
- Paying attention to good inner feelings and being conscious of what creates these feelings
- Being aware of strengths and coping resources in existing personal relationships
- Increasing the ability to choose to do things that are meaningful
- Considering the value of taking control of one's own needs and inner feelings

*(Continued on next page)*

An Example of an Intervention Program (*Continued*)

Session	Content part 1: Examples of themes that may emerge at the here-and-now round	Goals	Content part 2: Homework	Goals
11	How to cope with sleeping problems	Experiencing that other participants may share their own experiences with the same problem	Take yourself on a fantasy trip and ask yourself what you want to do or experience in your everyday life or at least once in your life	Being aware of one's own dreams and reflecting upon whether some can be fulfilled
12	How to cope with a family event, such as a wedding	Being aware of the ability to plan in relation to imagined situations	What characterizes people who have or have had a positive influence in your life?	Being aware of strengths and coping resources in personal relationships and discussing the possibility of creating relationships with these qualities
13	How to cope with going to the library	Experiencing taking one's own needs seriously and that active action may increase the sense of coping	How would you go about pleasing another person?	Being conscious of activities that encourage good personal relationships
14	How to organize the day	Reflecting on sources of strength in the activities of daily living	What positive characteristics of yourself do you experience after participating in the group?	Reflecting on and allowing oneself to pay attention to personal strengths and good inner feelings
15	Good experiences: A participant wants to tell about a good experience, such as a trip	Perceiving the importance of paying attention to good feelings	Describe ways in which you could proceed without the group	Reflecting on where to go without the group
16	Sum up and reflect on all the meetings	Being aware of whether the participant wants to keep contact with someone in the group	Of what importance has the group been for you?	Being aware of good experiences from the group and thus increasing the possibility that these may be used in new situations

health-promotion process including the salutogenic therapy principles and the desired outcome (Table 1).

## CONCLUSION

The increasing number of people who live with mental health problems for many years in the community brings into focus the need for recovery within a coping and mental health promotion perspective. The value of the salutogenic theory is that it emphasizes promoting coping and health. This article shows one way of using salutogenic therapy principles in an intervention program for promoting SOC and coping. The theoretical framework, the salutogenic therapy principles, and the program outlined here may guide mental health nurses to ask questions differently and interpret individuals' experiences with reference to their health potential. The theory also could be used to develop other interventions to promote a stronger SOC, coping, and mental health.

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# Paper II



# The effect of salutogenic treatment principles on coping with mental health problems

## A randomised controlled trial

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### Abstract

**Objective:** Although the theory of salutogenesis provides generic understanding of how coping may be created, this theoretical perspective has not been explored sufficiently within research among people suffering from mental health problems.

The aim of this study is to investigate the effect of talk-therapy groups based on salutogenic treatment principles on coping with mental health problems.

**Method:** In an experimental design, the participants (residents in the community) were randomly allocated to a coping-enhancing experimental group ( $n = 59$ ) and a control group ( $n = 47$ ) receiving standard care. Coping was measured using the sense of coherence (SOC) questionnaire.

**Results:** Coping improved significantly in the experiment group (+6 points) compared with the control group (−2 points). The manageability component contributed most to this improvement.

**Conclusion:** Talk-therapy groups based on salutogenic treatment principles improve coping among people with mental health problems.

**Practice implications:** Talk-therapy groups based on salutogenic treatment principles may be helpful in increasing coping in the recovery process among people with mental health problems and seem to be applicable to people with various mental health problems.

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**Keywords:** Coping; Sense of coherence; Mental health; Salutogenic treatment principles; Health promotion; Recovery

### 1. Introduction

The increasing number of people who live with mental health problems for many years in the community brings into focus the need for recovery within a coping and health promotion perspective [1,2]. In a recovery perspective, it has been claimed that traditional therapy has given too much attention to the feelings connected with earlier adverse life events and to diagnosis and medication and too little to the

future potential associated with a person's resources and coping [2–8]. Various new concepts and philosophies have emerged in the search for a complement to traditional therapy, including positive psychology [9,10], empowerment [7,11,12], resilience [13] and salutogenesis [14].

Coping as a sense of coherence (abbreviated SOC) is created from the philosophy and research about salutogenesis [14,15], whose robust descriptions provide a theoretical basis for explaining how coping may be created and thus decisively determine the ability to recuperate. Despite this, the theoretical perspective has not been explored sufficiently within research among people with mental health problems and, accordingly, there is little empirical evidence for

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treatment methods created in this new perspective. Evidence-based programmes for increasing coping in this perspective are, therefore, vital [16].

No previous studies have investigated the effects of salutogenic treatment principles on coping among people with mental health problems. This article reports the results from a randomised controlled trial of the effects of such treatment on coping with mental health problems.

## 2. Methods

### 2.1. Design, sample and procedure

The design is a randomised controlled trial. The primary outcome of the study was changes in coping according to the SOC questionnaire. Coping was measured at baseline and 19 weeks later: at the end of the group intervention and 6 months after the group intervention had ended. The questionnaire was mailed to the participants each time. The concept of mental health problems in this study included mental suffering, mental illness, mental disorders, mental problems and psychosocial problems.

The study was performed in nine psychiatric outpatient sectors in a large city in Norway, and the participants were recruited from these nine different geographical areas. Several meetings were held between the principal investigator of the study and the leaders and the local mental health professionals in each area in which the correct recruitment procedure was the focus and aim. Based on a list in a database in each geographical area, people were selected (in accordance with the inclusion criteria) for participation. The recruitment occurred during a period of 2 months. They were included if they met the following criteria: age 18–80 years, living at home with mental health problems, connected with the mental health services and/or an activity centre, were well oriented, mastered the Norwegian language, were able to have a dialogue, did not have alcohol and/or drug problems and could probably manage to stay in a group for about 6 months. Local mental health professionals who knew the selected people from regular contact over time recruited the participants. The people asked to participate got an information letter comprising information about the project as a whole, the focus, the aims and structure of the groups, the professional confidentiality and the fact that participation was voluntary, and the letter emphasized that participants could opt out of the study at any time without having to explain why. The ordinary support from the health care system would be maintained as usual. The people selected as controls were informed that they would get an offer to participate in a talk-therapy group when the third measurement was over.

Everyone who fulfilled the criteria ( $n = 136$ ) was invited to participate.

A total of 116 people fulfilling the criteria consented to participate in the study (Fig. 1).

The participants were then randomly allocated to a coping-enhancing experimental group ( $n = 67$ ) and an ordinary care control group ( $n = 49$ ). The randomisation was performed by drawing lots in each of the nine strata according to geographical area. In five of the nine strata, 50% of the participants were allocated to the experimental group and 50% to the control group. In the other four strata, two thirds of the participants were allocated to the experiment group and one-third to the control group to get sufficient participants (at least five) in each treatment group.

### 2.2. Intervention

The intervention programme consisted of 16 weekly meetings 1.5 h long for a period of 19 weeks and followed salutogenic treatment principles. The talk-therapy groups consisted of five to nine participants, each led by a mental health professional. Each session was divided in two. In the first part, one of the participants got the opportunity to discuss situations and experiences important for her or him in the context of coping in everyday life. The next part consisted of conversation about a topic based on a reflective note the participants had prepared as homework. The homework was based on four crucial spheres in human life in which, according to the theory of salutogenesis, people must invest if they do not want to lose resources and meaning over time: inner feelings; immediate personal relations; major activity; and existential issues.

Mental health professionals who were group leaders had undergone a 3-week training programme in advance that focused on how to be a leader and dialogue partner and how to apply the basic salutogenic treatment principles. The principal investigator of the study supervised all group leaders once a week in connection with each session. The group leaders did not know the participants beforehand. This means that none of the group leaders contributed to the recruitment process.

All the participants in the treatment and control groups received ordinary care from their home mental health worker and/or activity centre in the intervention period.

Ordinary care comprised home visits by a mental health worker and/or visiting an activity centre once or several times per week. The areas did not differ substantially with respect to support from the health system.

The main objective of the group intervention in this study was to increase participants' consciousness of their potential, their internal and external resistance resources (such as personal qualities, coping abilities and social support) and their ability to use them, and thus to increase their coping in the context of everyday living.

The group intervention programme targets people with various mental health problems who live at home but need support from the health system. It is based on the theory of salutogenesis that represents a broad and holistic perspective on health. The salutogenic perspective clearly concentrates

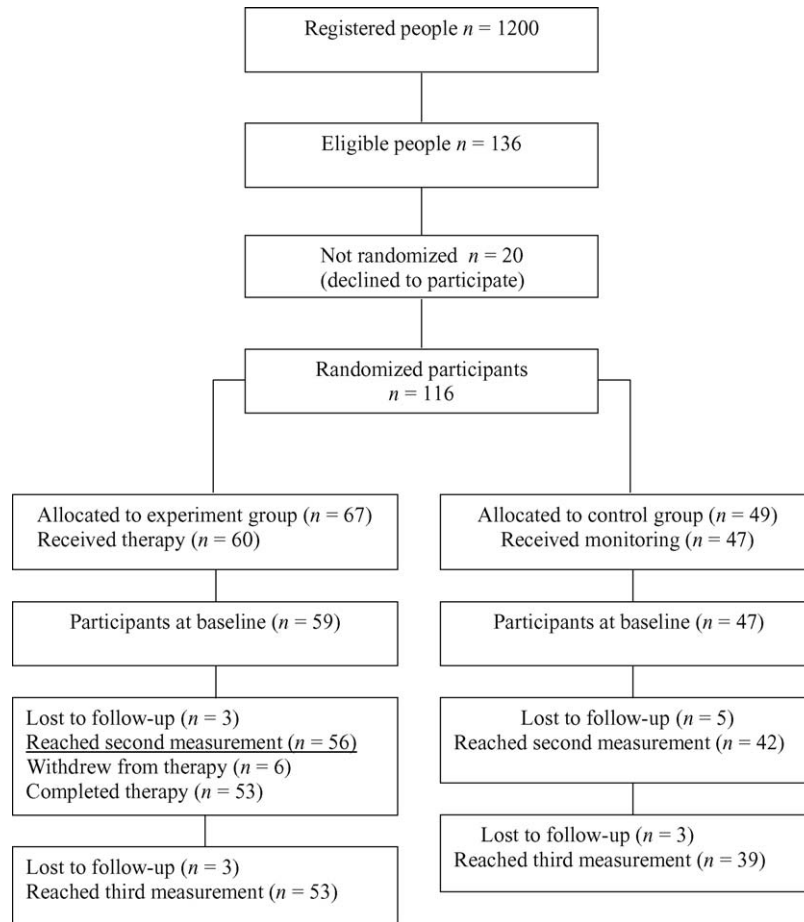


Fig. 1. Flow chart of the trial profile.

on factors promoting health and the attention and support spheres in the person's life that work well. It does not view health as a dichotomous variable but as a health continuum, striving to explain what makes a person move towards the healthy end of that continuum. It focuses on the story of the person and emphasises the coping ability in their stories. It understands that stress and strain may potentially promote health and focuses on appropriate challenges. Active adaptation is the ideal in treatment, which means that the treatment is adapted to the person's ability to work with herself or himself and her or his relations. Last but not least, it emphasises the use of the potential and/or existing resistance resources and not only focuses on minimising risk factors. Antonovsky's hypothesis is that a person with a high coping capacity has a high sense of coherence, defined as follows [14]:

"The sense of coherence is a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of confidence that the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable (*comprehensibility*); the resources are available to one to meet the demands posed by these stimuli

(*manageability*); and these demands are challenges, worthy of investment and engagement (*meaning*)."

Based on his research, Antonovsky claims that the stronger a person's sense of coherence, the more that person will tend to clarify the nature of the particular stressor confronted, select the resources believed to be appropriate in the specific situation and be open to feedback that allows behaviour to be modified [17].

### 2.3. Measures

#### 2.3.1. The sense of coherence questionnaire

The SOC questionnaire was used to assess coping [14]. This questionnaire is based on self-report and has been tested for validity and reliability in several studies, and their conclusions support the validity and reliability of the questionnaire [2,15,18]. It includes 29 items and measures the degree to which an individual views the world as comprehensible (11 items), manageable (10 items) and meaningful (8 items). Responses to all items are scored by means of a 7-point, Likert-type scale. A summary score was made for each of the three subscales. Further, a total SOC score was calculated by adding up the scores for the three

subscales. Missing substitution was performed for individuals who answered at least half the questions for each component. The range of the total score is from 29 to 203, and higher scores indicate a stronger sense of coherence.

### 2.3.2. SCL-90-R

The Symptom Checklist-90-Revised (SCL-90-R) was used as a single one-time assessment of the participants' mental health status at baseline [19].

Each item of the scale is rated on a 5-point scale of distress (0–4), ranging from “not at all” at one pole to “extremely” at the other. The scale is scored and interpreted in terms of nine primary symptom dimensions and three global indices of distress (Table 1). Seven items (additional items, Table 1) that are part of the SCL-90-R are not scored collectively as a dimension but are summed into the global scores.

Each dimension and the global scores have a cut point, and scores over this point are considered high and may be clinically disturbing (Table 1).

The global indices are: the Global Severity Index (combines information on numbers of symptoms and the intensity of perceived stress), the Positive Symptom Distress Index (a pure intensity measure) and the Positive Symptom Total (a count of the number of symptoms the participant reports as being positive to any degree). Research using analogues of these measures confirms the rationale that the three indicators reflect distinct aspects of mental disorder. Several studies support the validity and reliability of the questionnaire [19].

### 2.3.3. Evaluation form

The participants in the talk-therapy groups evaluated the programme (anonymously) by completing an evaluation form just after the group intervention and 6 months later. The form consisted of the following questions: “To what extent

has the talk-therapy group contributed to any improved mental health?”, “How useful has the talk-therapy group been for you?” and “Could something have been better in the talk-therapy group?”

### 2.4. Statistical analysis

We calculated a priori that 64 participants were needed in each group. This was based on a power of 80%, a significance level of 5% and an effect size of 0.5 standard deviations of change in the SOC score.

Univariate analysis of covariance was used to investigate differences between the groups from baseline to the end of intervention. In this analysis the difference between the SOC score at follow-up and the SOC score at baseline was used as the dependent variable, and treatment was included as a grouping variable and the SOC score at baseline as a covariate. This was done since the baseline score may predict change of score. The analyses were performed on all participants who answered the questionnaire both at baseline and at follow-up even if they dropped out of the intervention (intention-to-treat analysis). *P*-values were two-sided and considered significant if 0.05 or less. This analysis was also repeated including gender as a second grouping variable.

To evaluate whether the effect of the treatment varied according to the type of mental health problem, subanalyses were performed in each group of participants whose score were above the cut point set for each dimension of the SCL-90.

In addition, the effect sizes were calculated by dividing the difference of mean change in the experiment group and control group by the standard deviation of pre-treatment scores.

### 2.5. Ethical approval

The Regional Committee for Medical Research Ethics for Eastern Norway approved the study. Participants were coded and analyses performed anonymously.

## 3. Results

### 3.1. Participant flow and study sample

A total of 116 participants were randomised, 67 to the therapy group and 49 to the control group. A total of 106 participants (90%) responded at baseline, 98 (84%) responded at the second measurement and 92 (78%) reached the third measurement (Fig. 1). Nine people changed their mind about participating before the first measurement; seven of these were in the experimental group. One of these seven had got a full-time job, two had too much strain in their life, one gave priority to individual therapy and three did not want to participate because of anxiety or other problems.

Six participants in the experimental group dropped out during the intervention. All were encouraged to continue to

Table 1  
Mental health status (SCL-90) of all participants ( $n = 106$ ) for each dimension

Dimension	Mean	S.D.	Cut point for clinical importance	% of participants with scores above the cut point
Somatisation	1.61	0.95	0.94	71.7
Obsessive–compulsive	1.78	0.85	1.07	79.2
Interpersonal sensitivity	1.67	1.03	0.97	67.0
Depression	1.83	0.93	0.95	79.2
Anxiety	1.59	1.00	0.76	76.4
Hostility	0.68	0.69	0.75	33.0
Phobic anxiety	1.41	1.05	0.46	73.6
Paranoid ideation	1.33	0.90	0.89	67.0
Psychoticism	0.94	0.80	0.42	66.0
Additional items	1.71	0.84	–	–
Global Severity Index	1.45	0.75	0.77	81.1
Positive Symptom Distress Index	2.12	0.63	–	–
Positive Symptom Total	57.84	21.25	–	–

Scores above the cut point are considered high and indicate clinically disturbing symptoms.

participate in the project and to complete the questionnaires; three of these accepted to complete the questionnaires the second and third time. The reasons for dropout were as follows: did not want to open up ( $n = 2$ ), did not trust another person ( $n = 1$ ), conflicts ( $n = 2$ ) and offered another treatment ( $n = 1$ ). One completed the talk-therapy group but still did not complete the questionnaire the second time. Five participants in the control group did not fill out the questionnaire the second time. Two of these did not respond because they were away from home (one was hospitalized), one did not feel well and the others did not answer for unknown reasons.

At the third measurement 6 months after the end of intervention, a further three participants in the experimental group and five participants in the control group were lost. One participant had died, two were too sick and another did not complete the questionnaire for other reasons. Two of the participants in the control group that did not respond the second time because they were away from home responded the third time.

No statistically significant difference was found in the baseline score of SOC between those who completed the study and those who dropped out at the second measurement and follow-up.

A total of 51 participants in the intervention programme had 8–16 sessions and 9 had less than 8 sessions.

In the final study population, 70% were women ( $n = 73$ ) and the mean age at entry was 51 years (S.D. = 14, range 20–80). A total of 38% lived with a spouse, another adult, children or parents.

A total of 70% had less than 11 years of education, and 91% were receiving a disability pension or national insurance benefits. A total of 71% of the sample had struggled with mental health problems for 10 years or longer, 26% 2–10 years and 3% 1 year or less.

### 3.2. Mental health problems

Over 80% of the sample was encumbered with a number and intensity of symptoms that may be disturbing and

prevent activities of daily living (Table 1). The highest score was on the obsessive–compulsive dimension and depression dimension and the lowest on the hostility dimension. Between 66 and 79% of the participants reported problems within each of the areas of somatisation, obsessive–compulsive behaviour, interpersonal sensitivity, depression, anxiety, phobic anxiety, paranoid ideation and psychoticism.

### 3.3. Effect of therapy on coping

Table 2 shows the results of coping at the different measurements. The mean SOC score at baseline was 116 (S.D. = 28) for the whole sample, 120 (S.D. = 26) in the experiment group and 111 (S.D. = 31) in the control group.

An analysis of variance with the SOC score at baseline as covariate was used to test the difference between groups. This analysis showed that the change in mean score in the SOC before and after intervention was significantly higher in the experimental group than in the control group ( $P = 0.03$ ). In this model, there was an estimated increase of 5.6 for the experimental group and a decrease of 2.3 for the control group. This analysis was repeated while controlling for gender and showed materially the same result ( $P = 0.03$ ).

The baseline score and change in scores at the second measurement were strongly correlated in both the experimental group ( $r = -0.33$ ) and the control group ( $r = -0.48$ )—a lower score at baseline correlated with an increase at second measurement.

The treatment also significantly affected the manageability dimension in SOC ( $P = 0.01$ ), with a difference in change of 3.5 between the two groups. The comprehensibility dimension ( $P = 0.09$ ) and the meaning dimension ( $P = 0.11$ ) also improved nonsignificantly in the experimental group.

The analysis was repeated for each subgroup of patients according to the dimensions of the SCL-90. For each of these analyses, we included patients with scores above the cut point for clinical importance only (Table 1). The effect of

Table 2

Coping: descriptive mean score on the sense of coherence scale and subscales: comprehensibility, manageability and meaningfulness before and 1 week after intervention

Instruments and scoring range	Baseline				1 week after intervention		Change from baseline*			Effect size
	Groups	<i>n</i>	Mean score	S.D.	Mean score	S.D.	Mean change	95% CI	<i>P</i>	
Sense of coherence scale 48–194	Experimental	56	120	26	125	26	6	(1.10)	0.03	0.29
	Control	42	111	31	110	28	–2	(–8.3)		
Comprehensibility 18–67	Experimental	56	42	10	44	10	2	(0.4)	0.09	0.27
	Control	42	38	12	38	11	–1	(–3.2)		
Manageability 18–67	Experimental	56	43	11	45	9	2	(0.3)	0.01	0.36
	Control	42	41	11	40	10	–2	(–4.0)		
Meaningfulness 9–54	Experimental	56	35	9	37	9	2	(0.4)	0.11	0.20
	Control	42	33	11	33	10	0	(–2.2)		

\* Significance of change was tested using an analysis of variance with the SOC score at baseline as covariate.

the intervention on the change in SOC score did not differ significantly between these subgroups.

The effect size was 0.29 for the total SOC score and 0.27 for the subdimension comprehensibility, 0.36 for manageability and 0.20 for meaning.

### 3.4. Changes 6 months after the intervention

Six months after the intervention there was still better coping compared with the control group, but the difference was smaller and not significant ( $P = 0.48$ ). The increase was 4.3 for the experimental group and 1.4 for the control group.

The effect size was 0.10 for the total SOC score and 0.15 for the subdimension comprehensibility, 0.12 for manageability and 0.10 for meaning.

At this measurement, two thirds (35 of 53) of the experimental participants still had increased their SOC versus half (19 of 39) the control participants.

### 3.5. Evaluation form

The participants in the talk-therapy groups evaluated the group dynamics. At the end of the intervention, 45 participants (85%) of the talk-therapy groups responded that the treatment had greatly or very greatly contributed to better mental health. The number was 36 (70%) 6 months later. Fifty participants (95%) responded that the talk-therapy groups had been very useful or useful at the end of the intervention. The number was 43 (81%) 6 months later. Most participants wanted each session to last 30 min longer and the group to last for a longer period.

## 4. Discussion and conclusion

### 4.1. Discussion

Talk-therapy groups based on salutogenic treatment principles resulted in statistically significant improvement in coping among people with mental health problems. A total of 69% of the participants who received the treatment increased their SOC score. This result corresponds to the participants' own evaluation of the intervention. Further, the results suggest that a 16-week package with treatment 1.5 h a week has sufficient power. There was also a high rate of consent to the study among the participants (85%) and a good compliance rate with a low withdrawal rate (16%) and with high attendance in the groups; 51 participants had 8–16 sessions.

One previous study of people with schizophrenia living in the community [2] found the mean SOC score to be 129, while a study of people with fibromyalgia [20] had a mean SOC score of 131. The mean score of 116 in the present population among people with mental health problems was lower than these other two groups and markedly lower than the mean score of 151 in a study of the general population in

Sweden [21]. The low coping level of the people with mental health problems corresponds to the number and intensity of symptoms these people report. More than 80% of the participants had scores above the critical cut point for the Global Severity Index of the SCL-90. This shows the significant potential for improvement in coping in this study population.

Antonovsky [14,22] claims that the sense of coherence is an internal experience that gradually develops during youth to a rather lasting and stable quality of an individual after 30 years of age. This quality can be compared to a personality trait. However, he emphasises that his position is a hypothesis, based on theoretical considerations, and is not based on empirical evidence [3]. The view that the sense of coherence is stable after 30 years of age may be criticised because one could claim that the strength of sense of coherence is continuously influenced by external events and internal reactions to these events [23]. Fok et al. [24] support this view. The results of this study indicate that sense of coherence may be improved due to a mode of therapy and thus give support to Suominen [23] and Fok et al. [24]. Long-lasting improvement of the sense of coherence may be possible due to powerful professional interventions if these result in major changes in life experiences and potential to achieve life-plan goals. The intervention in this study may represent such a powerful intervention by increasing coping capacity.

Thus, the results of this study and other studies may indicate that the potential for changing the sense of coherence is not as pessimistic as Antonovsky hypothetically claimed. In addition to the present study, the randomised controlled trial of people with fibromyalgia showed a significant increase in sense of coherence after participation in a mindfulness-based stress reduction programme [20]. Further, a few other uncontrolled or non-randomised studies found significant changes in SOC scores as a result of intervention among adults with mental symptoms [25], adults with psychosomatic symptoms [26], adults with mental symptoms [27] and chronic cannabis users [28]. These observations indicate that the sense of coherence can improve as a response to a mode of therapy.

Antonovsky [14] regards the components of the sense of coherence as being “inextricably intertwined”. In a situation in which the components are of varying strength, the differences tend to disappear in the long run. He emphasises that meaningfulness is the most important component. However, Suominen et al. [29] claim that comprehensibility and manageability are somewhat susceptible to volitional processes, whereas this is not the case for meaningfulness. The central issue here is whether meaningfulness leads with great certainty to improved comprehensibility and manageability. Empirical data to confirm this are still lacking. Since we found a significant change in the manageability subscale in the present study, it may indicate that the dynamic process of changing the sense of coherence will start with changes in the manageability subscale

(susceptible to volitional processes) and will improve the other components in the long run. This may be interpreted as increased imaginable competence because manageability is high when people believe that they have adequate resources available to manage demands. The uncontrolled intervention study using “guided imagery and music therapy” also found the highest increase in this component [25].

The levels of resources do not necessarily have to coincide with the strength of the sense of coherence, especially not the level of external resources. Here coping (sense of coherence) should be regarded as an ability to find and utilise resources more efficiently, even when they are scarce [30]. Especially manageability changed significantly, and Suominen et al. [23] says that “according to the theoretical definitions manageability is more than the other components depending on external resources such as social relationships that can be utilised while taking concrete measures in order to find a solution to a certain problem”. This may be interpreted such that the people have learned to utilise their potential and available resources, although the level of these resources may have been low. Antonovsky [14] confirms this when he emphasises that the ability to use the resources affects the level of the sense of coherence. When the sense of coherence gets stronger, it will also act by improving the readiness to co-ordinate and take advantage of resources. The participant may thus get into a virtuous circle.

Most of the participants were women (70%). This may be because more women are registered in this health system and perhaps more women want to participate in talk-therapy groups. However, the effect of treatment did not differ by gender.

Patients with low initial values in the outcome measure made the most progress, indicating that patients with the lowest scores have the greatest potential for improvement. However, the negative correlation between baseline score and the change of score in the post-treatment measurement could also reflect a regression-to-the-mean effect. This is supported by the fact that this negative correlation was present also in the control group.

In this study, it may be difficult to determine whether the salutogenic treatment principles have a specific beneficial effect or whether gains are attributable to nonspecific effects of having a therapeutic relationship and regular contact with mental health professionals and group participants. Studies using a talk-therapy group based on another type of therapy in addition to a control group would shed light on this. The intervention programme in this study was based on Antonovsky’s basic salutogenic thinking in which the sense of coherence is a key concept, and the significant change was found in precisely this concept. This supports the assumption that the salutogenic treatment principles have contributed uniquely to the effect.

We used intention-to-treat analysis, including participants who did not finish the intervention programme but who completed the questionnaire at the second measurement and follow-up. Nevertheless, the drop-out rate was 16% after

treatment ended and 18% at follow-up. Most of the drop-outs were in the control group. One of these reported worsened health, one was hospitalized and the reason for drop-out was unknown for the others. This might indicate that dropping out adversely affected their health, and in this situation, the effect of the intervention has been underestimated.

Of the 136 eligible people, 20 declined to participate. This seems very low, given this specific patient population. However, the recruitment procedure was well prepared and the eligible people were asked to participate by people they trusted. In addition, this group of people generally is seldom offered therapy and especially not group therapy. The stated aim and focus of the groups also comprised a reason for many to participate.

According to the power analysis, it would have been desirable with 64 participants in each group. All the participants that consented to participate were included in the study. Recruiting more participants required extending the recruitment area (outside the city), but this was complicated. Despite the reduced power, the intervention showed a statistically significant effect of reasonable size.

#### 4.2. Conclusion

The sample sizes and effect sizes in this study were relatively small, and the results need to be replicated in larger studies analysing the effect and which component of the intervention is most effective.

The results of this study show that implementing salutogenic treatment principles significantly affects coping for people with mental health problems.

This should encourage mental health professionals to offer a group treatment model and individual treatment model based on salutogenic treatment principles in the recovery process among people with various mental health problems.

#### 4.3. Practice implications

The results may be interpreted as reflecting increased coping in everyday life and especially increased imaginable competence. If group therapy is chosen for these people, a longer period may be more effective. In the participants’ evaluation, most say that the group should have lasted longer each time and over a longer period. The significant change in the sense of coherence (not significant at follow-up) may be more permanent if the groups lasted for a longer period. This seems reasonable, because change is a process that takes time with many ups and downs, and the participants have struggled with a high level of mental health problems for a long time and basically have a low level of coping.

Further, there were no significant differences in the change of sense of coherence between the subgroups of participants according to the dimensions of SCL-90 (Table 1). This suggests that therapy based on salutogenic

treatment principles is suitable for people with various mental health problems. Nevertheless, some of these subanalyses included rather few patients, and we therefore, cannot exclude the possibility that the effect of such treatment varies between subgroups of patients.

The study population was selected based on rather strict criteria. About 1200 people in the community were registered as needing support from the mental health care system, and only 136 fulfilled the inclusion criteria. The results may, therefore, not be directly applicable to many people with more unstable mental health problems.

The results of this study provide empirical evidence for treatment methods created in a salutogenic perspective for people with various mental health problems.

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# **Paper III**

Community Mental Health Journal 43(4), Langeland, Eva; Wahl, Astrid K.; Kristoffersen, Kjell; Nortvedt, Monica W. and Berit Rokne Hanestad, Quality of Life Among Norwegians with Chronic Mental Health Problems Living in the Community versus the General Population, pp. 321-339. Copyright 2007 Springer Netherlands. Abstract only. The full-text is not available due to publisher restrictions. The published version is available here: <http://dx.doi.org/10.1007/s10597-006-9076-1>

## **Quality of Life Among Norwegians with Chronic Mental Health Problems Living in the Community versus the General Population**

Eva Langeland, Astrid K. Wahl, Kjell Kristoffersen, Monica W. Nortvedt, Berit Rokne Hanestad

### **ABSTRACT:**

We used the Quality of Life Scale to assess quality of life among 107 Norwegians with chronic mental health problems (MHP) from the community health care system versus 1893 general population adults. The groups differed in quality of life, including broader life domains. Age and quality of life were more strongly positively correlated in the MHP group than in the general population. Mental symptoms (measured by the Symptom Checklist-90 Revised) and quality of life were strongly negatively correlated in the MHP group. Services for people with chronic MHP should focus on enhancing quality of life and on its role as an outcome variable.

**KEY WORDS:** quality of life; community-living residents with chronic mental health problems; general population; mental symptoms.

# **Paper IV**

Quality of Life Research 16(6), Langeland, Eva; Wahl, Astrid K.; Kristoffersen, Kjell; Nortvedt, Monica W.; Hanestad, Berit R., Sense of coherence predicts change in life satisfaction among home-living residents in the community with mental health problems: a 1-year follow-up study, pp. 939-946. Copyright 2007 Springer Netherlands. Abstract only. The full-text is not available due to publisher restrictions. The published version is available here: <http://dx.doi.org/10.1007/s11136-007-9199-z>

## **Sense of coherence predicts change in life satisfaction among home-living residents in the community with mental health problems: a 1-year follow-up study**

Eva Langeland, Astrid K. Wahl, Kjell Kristoffersen, Monica W. Nortvedt, Berit R. Hanestad

### **Abstract**

**Objectives:** There is a call for a further investigation of Sense of Coherence (SOC), the central concept in salutogenesis, and its relation to health and life satisfaction. No previous studies have investigated the utility of SOC versus mental symptoms for the prediction of life satisfaction among people with chronic mental health problems (MHP).

**Methods:** The present study has a prospective design including a baseline assessment and a 1-year follow up. We recruited 107 adults from the community health care system. SOC was measured by the Sense of Coherence questionnaire, mental symptoms by the Symptom Checklist-90 revised and life satisfaction by The Quality of Life Scale (all Norwegian versions).

**Results:** The results show that while SOC predicts change in life satisfaction (standardized beta coefficient for SOC was 0.39,  $P = 0.014$ ), mental symptoms did not (standardized beta coefficient 0.00,  $P = 1.0$ ).

**Conclusions:** These findings emphasize the importance of assessing factors that may explain differences in life satisfaction over and above mental symptoms among people with MHP.

The results indicate that improving SOC among people with MHP might provide important opportunities for improving their life satisfaction.

Keywords: Life satisfaction, Mental symptoms, Prediction, Prospective design, Sense of coherence

