

**On the Vocational Pathway to Recovery:
Vocational Decisions in Mental Illness**
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Abstract

Objective: In the field of career-counselling significant attention has been given to vocation- and career-related thinking and cognitions in research as well as in interventions supporting personal and vocational development. In contrast, little if any attention has been given to vocational cognitions in the study of those mental disorders that cause disabling symptoms and disrupt employment. Studies of vocational and rehabilitation outcomes tended to focus on the impact of psychopathology itself, cognitive functioning and related phenomena such as stigmatisation. There is no particular reason that job seekers with mental disorders and those without mental disorders should be regarded differently. Indeed understanding vocational cognition in mental disorder may enhance vocational outcomes and personal development for affected individuals. Here, the objective is to test whether career choice certainty and dysfunctional career beliefs can predict remission and functioning, recovery and assertive job-hunting behaviour. **Method:** Participants (n = 109) with severe mental disorders attending community outpatient services completed interviews, self-report measures and tasks assessing vocational cognitions, symptom severity, cognitive functioning, hope and self-esteem, recovery and stigma. Path analyses were used to ascertain whether hope and self-esteem play a major role for factors associated with remission and recovery, whether a stigma-related model of factors associated with remission and recovery can be replicated, and whether an alternative model using career decision indices can predict remission and recovery factors. **Results:** There was evidence that higher career choice certainty and lesser dysfunctional career beliefs predicted symptom remission, functioning and recovery outcomes. Career decidedness did not predict assertiveness in job-hunting but dysfunctional thoughts about vocation did. Hope and self-esteem were important predictors of remission and recovery. The stigma related model could not be replicated sufficiently. **Conclusion:** The findings suggest that vocational cognition predicts symptom remission outcomes and key measures of recovery in major mental disorders. Keeping in mind the limitations of cross-sectional design, it may be that career decisions and thoughts offer an important target for enhancing recovery from employment disrupting mental disorders.

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List of Abbreviations

AGFI	Adjusted Goodness of Fit Index
AJHS	Assertive Job-Hunting Scale
Antidep.	Antidepressant
Antipsy.	Antipsychotic
BHS	Beck Hopelessness Scale
CDP	Career Decision Profile
CFI	Comparative Fit Index
CPT	Continued Performance Test
CPT-IP	Continued Performance Test - Identical Pairs
CTI	Career Thoughts Inventory
DEP	Depression
ECVI	Expected Cross Validation Index
GSI	Global Severity Index
HOS	Hostility
IS	Interpersonal Sensitivity
ISMIS	Internalises Stigma of Mental Illness Scale
MAOI	Monoamine Oxidase Inhibitor
Med.	Medication
OC	Obsessive Compulsive
PAR	Paranoid Ideation
PHO	Phobic Anxiety
PSYCH	Psychoticism
RAS	Recovery Assessment Scale,
RMSEA	Root Mean Square Error of Approximation
RSES	Rosenberg Self-Esteem Scale,

SAMHSA	Substance Abuse and Mental Health Services Administration
SCL	Symptom Check List 90
SCQ	Stigma Consciousness Questionnaire
SSRI	Selective Serotonin Reuptake Inhibitor
WMS	Wechsler Memory Scale Spatial Span

On the vocational pathway to recovery:

Vocational decisions in mental illness

Why is the Current Research Important?

Work is a critical element in the recovery of people with mental illness. It offers more than a paycheck; it boosts self-esteem and provides a sense of purpose and accomplishment. Work enables people to enter, or re-enter, the mainstream after psychiatric hospitalization. Unfortunately, too often these individuals are prevented from finding employment because the supports that they require are lacking (Rogers, 1995, p.5).

There is evidence from cross-sectional and longitudinal studies that unemployed people have consistently poorer psychological health when compared to employed people (e.g. Morrell, Taylor, Quine, Kerr, & Western, 1994; Morrell, Taylor, & Kerr, 1998; Shortt, 1996; Smith, 1987). Therefore it is likely that, at an individual level, unemployment increases individual risks of or predispositions to psychopathology (Ezzy, 1993; Forcier, 1988; Hammarstrom, 1994; Warr, 1987).

Considering the extent of research regarding the positive contributions of employment to the rehabilitation process (Curran, Knapp, McDaid, Tómasson, & The Mheen Group 2007; Grove, 1999; Linn, Sandifer & Stein, 1985; Stansfeld, 2002) and the negative effects of unemployment on mental health (Dooley, Fielding, & Levi, 1996; Janlert, 1997; Paul & Moser, 2009), it appears unreasonable to exclude vocational aspects from research and interventions that aim at alleviating the strains of mental disorders. The negative effects of unemployment and the positive effects of employment and job-satisfaction are further

validated by large comprehensive meta-analytic studies (Cass, Faragher, & Cooper, 2002; Paul & Moser, 2009).

In light of the relevance of employment for psychological health it is noteworthy that the most consistent predictor of subsequent vocational outcome is work-history (Anthony, 1994; Catty et al., 2008; Collins, Mowbray, & Bybee, 2000; Matschnig, Frottier, Seyringer, & Frühwald, 2008; Tsang, Leung, Chung, Bell, & Cheung, 2010). Even though neurocognitive functioning has recently emerged as a promising area to predict later employment (e.g. Nuechterlein et al., 2011; Tsang et al., 2010), work history is up to date still the most reliable predicting factor. Work history, however, is not targetable through psychological interventions since former work experience cannot be implemented at the time of the intervention. Therefore it has limited value in the context of mental health practice and research and accordingly cannot support an individual person in his or her struggles to overcome mental disorders.

Given the limited value of this predictor for interventions it is necessary to search for employment enhancing predictor variables in areas that may provide more applicable findings such as person related characteristics. This has been repeatedly suggested (e.g. Anthony, 1994; Tsang et al., 2010) throughout the years, but in light of the considerable effects of work on mental health has not instigated a sufficient scientific response. Stressful work characteristics may, however, hinder the process of overcoming mental illness and cause further strain (Cox, Leka, Ivanov, & Kortums, 2004; De Lange, Taris, Kompier, Houtman, & Bongers, 2004).

The associated question is: what makes the difference between employment that is beneficial and employment that is harmful for health? One possibility is that the aforementioned psychological or person related factors mediate the effects of vocational rehabilitation on psychiatric health.

A possible approach in this context is to focus on a self-directed choice of the mental health clients. Letting the person determine what kind of work environment he or she thinks likely to be suitable may minimize the occurrence of stress that can arise as a result of inadequate or unsuitable working conditions. Such an approach is supported by the Substance Abuse and Mental Health Services Administration National Consensus Conference on Mental Health Recovery (Substance Abuse and Mental Health Services Administration [SAMHSA], 2004) which defines self-direction as one of the major factors of consumer oriented recovery.

The above delineated findings point towards the notion that positive effects of employment are mediated by personal psychological factors such as self-directed vocational choice. There is currently only one review that specifically examines the impact of person related factors on employment outcomes (Michon, van Weeghel, Kroon, & Schene, 2005). The question that arises in this context is: which factors mediate the effect of employment on mental health and therefore may be associated with relief from psychopathological strain?

Employment is acknowledged as a major part of the rehabilitation process in mental illness. Factors to consider in this context include vocation related thought content such as job-searching attitudes and career decision making. Given the relevance of cognitions in other domains (e.g. cognitive behavioural therapy), the assumption that vocational cognitions are relevant in the context of mental health appears promising. The beneficial effects of employment (or negative effects of unemployment) may be influenced by thoughts and beliefs about work in a similar fashion as psychiatric symptoms can be altered by thoughts and beliefs. Can the extent to which an individual is enabled to facilitate certain attitudes (e.g. active decision making, functional vocational thoughts, vocational assertiveness) mediate the relationship between vocational activities and health benefits?

Collecting evidence to answer this question can help to further understand what contributes to symptom reduction, increased functionality and employability in persons with

mental health problems. Findings may contribute to new practically applicable approaches that support symptom remission and recovery.

Another reason why this research is important, refers to aspects of consumer oriented recovery (Bellack, 2006; Deegan & Drake, 2006; Lloyd, King, & Moore, 2010; President's New Freedom Commission on Mental Health, 2003; SAMHSA, 2004), an approach receiving increased research attention in recent years. There are, however, voices criticizing the universal applicability of the consensus regarding the consumer oriented recovery approach (Davidson, O'Connell, Tondora, Staeheli, & Evans, 2005; Lal, 2010). Literature concerning the recovery debate is reviewed below and a definition of what is understood by the term 'recovery' in this research is given. In the commonwealth countries and north Americas, establishing recovery as the basis of transforming care services (Ramon, Healy, & Renouf, 2007), and the trend to implement consumer oriented recovery services is, despite on-going debate, predominant.

Within publications addressing this newer concept of recovery a recurring theme is the development of an identity that exceeds psychopathological descriptions, identifying with a life-narrative that encompasses status as a mental-health consumer but appreciates the full personhood of a biographic development (e.g. Andresen, Oades, & Caputi, 2003; Anthony, 1993; Davidson et al., 2005; Ridgway, 2001; Smith, 2000). One of the salient themes in our society that contributes to identity is the profession someone works in. This can be illustrated by considering one of the first questions that commonly arises in an introductory conversation: "So what do you do?" It is imaginable how this question can induce distress and reduce social engagement if the only answer one can think of is "I am a mental health patient and unemployed". The employed individual, regardless of the conditions of work consciously chooses a direction of community integration – from deciding to go to work at the start of the day to meeting a defined set of social responsibilities through tasks involving

reciprocal expectations during the day (Pilisuk, 2001). Going to work on a regular basis is what is commonly perceived as ‘normal’. It appears reasonable to support persons with mental illness to be able to access this common way of day to day living. Acknowledging that the process of consumer oriented recovery involves developing an identity beyond the illness, it is perceivable that making a decision about what one wants to become vocationally provides the means for this transformation identity and hence supports the process of rehabilitation.

At the SAMHSA National Consensus Conference hope was ascertained as a key element, essentially the catalyst of the recovery process (Bellack, 2006; SAMHSA, 2004). An active career decision, the conviction of what one wants to become, implies goal orientation. It seems unlikely that someone would consciously come to a decision and maintain it if that person perceives it as unachievable. It may be that a vocationally decided person is more likely to believe that she or he can achieve a greater level of ‘normality’ and this in itself implies a perception of hope.

Another factor of consumer oriented recovery relates to an active vocational decision is the idea that consumers control and exercise choice over their own life goals and accordingly over their path of recovery (SAMHSA, 2004). To research the concept of active vocational decisions in the mental health context is one attempt to discover ways of practical implementability of the consumer oriented recovery movement ideology.

What Relevant Findings for this Research Exist in the Literature?

There has been a large amount of research concerning the concurrence of unemployment and health issues, including psychiatric illness (e.g. Ezzy, 1993; Forcier, 1988; Hammarstrom, 1994). The question arises: What could be done to support the vocational part of the overall rehabilitation process, recognising its importance and effectiveness? (McGurrin,

1994; Rogers, 1995). As mentioned previously, mental health rehabilitation requires further research to identify areas which may promise more applicable findings than former employment.

There is empirical support for the approach taken in this research from high school career counselling studies suggesting that vocational decidedness is associated with indices of psychopathology and vocational functioning (Creed, Prideaux, & Patton, 2005; Germeijs & DeBoeck, 2002; Holland & Holland 1977; Jones & Chenery, 1980; Jörin, François, Bergmann, & Eder, 2004; Slaney, 1980; Wanberg & Muchinsky, 1992). A study by Yanos, Roe, Markus and Lysaker (2008) that addressed stigmatisation in the context of recovery provides the methodological framework for parts of this study. Even though this framework study uses the term 'recovery' there is a considerable amount of confusion about the definition and meaning in mental health which makes it necessary to clarify this concept for this research.

Figure 1 illustrates the structure used to review the empirical findings pertinent to this study. The term 'recovery' is clarified to distinguish its different meanings as pertaining to concepts in this research (1). The qualitative study (Dolberg, 2009) which preceded the current approach is outlined (2) followed by a review of the study that provided the methodological framework (3). Given the emphasis on different vocational aspects and the absence of findings relating specifically to vocational thoughts and decision making in mental health populations, an area of interest is the connection of employment to aspects of symptom remission and functioning, and consumer oriented recovery (4). Subsequently research that has considered constructs related to the concepts examined in this study is reviewed (5). Lastly studies on the here evaluated vocational thoughts (career decidedness, dysfunctional career thoughts and job-hunting assertiveness) from areas outside the mental health context are exemplified to provide a possible indication of the appropriate allocation for the work

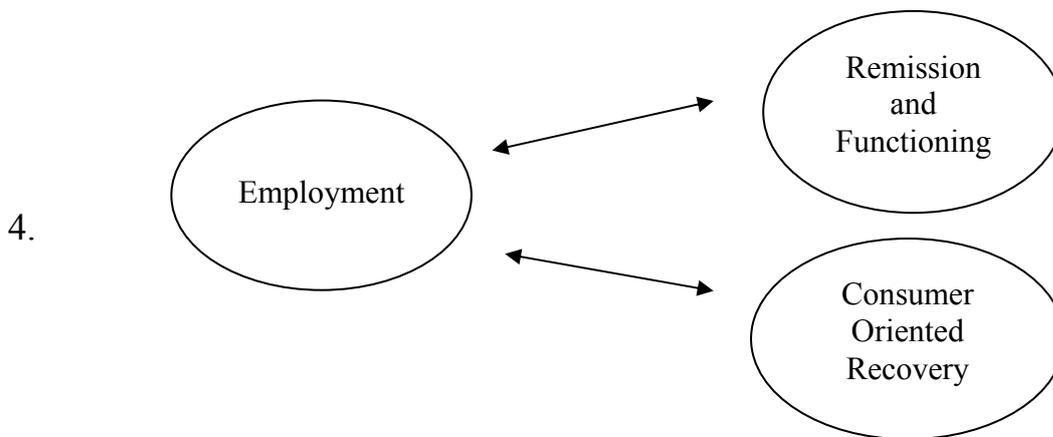
related cognitions in the contexts of remission and functioning, and consumer oriented recovery (6).

While the definitions of vocation related cognitions (vocational decidedness, functionality of career thoughts and job-hunting assertiveness) and employment (i.e. employment status, tenure, hours worked) are relatively self-evident, the term recovery is used in different contexts and refers to two distinct concepts that require a more thorough examination.

1. The term ‘Recovery’

2. Development of the current study (the qualitative forerunner study)

3. Use of existing literature (the methodological framework study)



5. Findings on concepts related to vocational thoughts in mental health

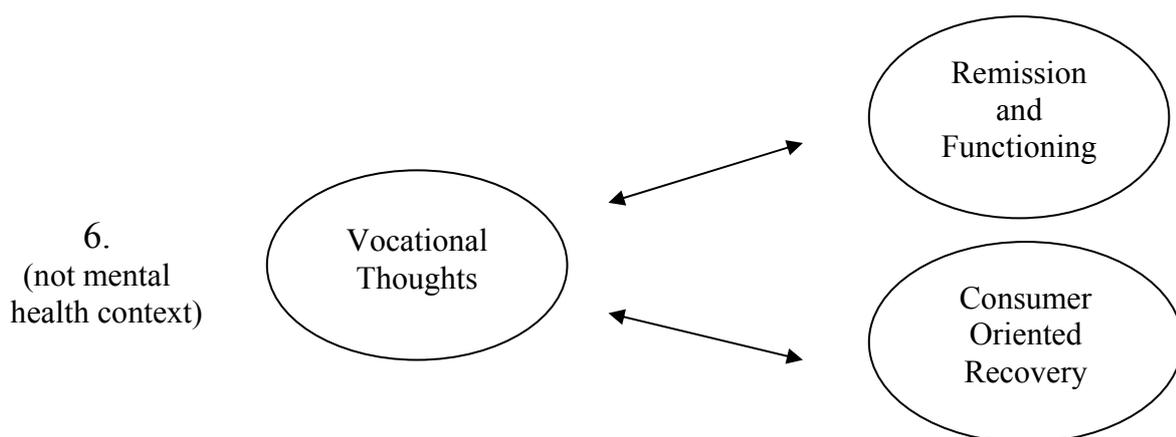


Figure 1. Literature review – overview.

The term recovery. “To ask if someone will recover is the most obvious and basic question when confronted with any severe health problem, and helping people recover is the most fundamental goal for any service or practitioner” (Roberts & Wolfson, 2004, p. 37). Nevertheless it is necessary to formulate a working definition of what constitutes recovery, not only in the context of practical guidelines but also for research. Research on recovery has steadily increased over the last decade so that there is a considerable amount of literature to draw upon (e.g. Andresen et al., 2003; Bellack, 2006; Collier, 2010; Onken, Craig, Ridgway, Ralph, & Cook, 2007; Rogers, Anthony, Cohen, & Davies, 1997a; Stickley & Wright, 2011).

While the concept of recovery is well established in contemporary mental health practice, questions have been raised about its relationship with more traditional concepts of functional improvement and participation in the community (Meehan, King, Beavis, & Robinson, 2008). Traditional medical recovery is usually understood as a remission of symptoms and an increase in functioning (Bellack, 2006; Collier 2010). In comparison the consumer oriented “psychosocial” definition of recovery has been variously described as a model, an approach, a philosophy, a paradigm, a movement, a vision, and, critically, a myth (Roberts & Wolfson, 2004). It has been further conceptualized as a process, an outcome, and both (Mueser et al., 2002).

Besides these structure-related differences there are variations in content definitions of consumer oriented recovery. Some authors identify self-efficacy, self-esteem, power/powerlessness, community activism, optimism and control over the future as the key components of recovery (Rogers, 1997), while others regard finding and maintaining hope, the establishment of a positive identity, finding meaning in life, and taking responsibility for one’s life as central (Andresen et al., 2003).

This shows the heterogeneity of the concept of consumer oriented recovery and indicates the difficulty of an operationalized approach. Accordingly, there is a recognisable amount of voices critiquing this concept within the literature (Davidson et al., 2005; Lal, 2010; Whitwell, 1999).

It is critical to note that consumer oriented recovery is, by literal definition, consumer defined, meaning that each individual may have a varying understanding of what recovery is. However overarching themes have emerged from explorative research and consensus publications; such as hope (optimism/control of future), self-determinism (agency, self-efficacy, decision making), identity beyond illness (self-esteem, social roles and contacts), quality of life and symptom remission (sense of meaning in life, well-being), and available support (e.g. Andresen et al., 2003; Deegan & Drake, 2006; Liberman, Kopelowicz, Ventura, & Gutkind, 2002; Lloyd et al., 2010; McGrath & Jarrett, 2004; SAMHSA, 2004).

At the SAMHSA (2004) conference, key characteristics were identified for effective consumer oriented recovery services: Hope, self-direction, individualized and person-centred, empowerment, holistic, nonlinear, strength-based, peer support, respect and responsibility. Hope is promoted as the key element in defining recovery. Even though the SAMHSA (2004) report provides a valuable definition of what can, and perhaps should, be understood by ‘consumer oriented recovery’ it is important, as Bellack (2006) points out, to acknowledge that the two definitions of recovery (traditional medical and consumer oriented) have evolved from very different perspectives, different historical contexts and are pursuing somewhat different goals.

This study draws a distinction between the two definitions of recovery. “Remission and Functioning” will hereafter be used to refer to the traditional medical approach and “Consumer oriented Recovery” will be used to identify the approach that focuses on individual experience and personalisation. This is in accordance with the differentiation

presented by Bellack (2006) and Collier (2010). It is of note that these two distinct concepts are not posited as competing for one true perspective but as complementary ideas contributing to the understanding of the complexity of mental illness and the process of rehabilitation. Accordingly, factors associated with consumer oriented recovery are assessed in this research as well as the less subjective indicators of remission and functioning.

This research strives to give credit to the two differing concepts acknowledging the conceptual differences in the history and approach of the two constructs. However, it is equally crucial to emphasise that both approaches share a common goal; to reduce the strain that mental illness places upon individuals, families and our society.

In summarisation of the referenced literature (Stickley, 2011; Bellack, 2006; Collier 2010; Onken et al., 2007) and the consensus of the SAMHSA conference (2004) five general categories of consumer oriented recovery are proposed here. These are

- Hope; including optimism and perception of a controllable future,
- Self-direction; including agency, self-determinism and autonomy, choice of meaningful options and activities promoting recovery,
- Empowerment; including strength-based promotion of potentiality, related self-awareness and self-esteem,
- Quality of life; understood as well-being, meaning of life and perception of individual purpose and personal definitions ascribed to different experiences such as coping, healing, wellness, and thriving,
- Identity; including social roles and contacts and an identity beyond illness, respect and responsibility, peer support and integration.

To summarise, ‘remission and functioning’ is understood as the reduction or elimination of symptoms, and the increase in cognitive and day to day functioning or the

return to premorbid levels of functioning. ‘Consumer oriented recovery’ takes the perspective of the individual therefore a universal definition desiring standardisation is inherently problematic. However the different definitions from the literature are predominantly compatible with the aforementioned five categories.

How did the approach taken in this research develop? The study of origin in which the current topic was first approached (Dolberg, 2009) was conducted at the Warstein Clinic for Psychiatry and Psychotherapy, a large psychiatric hospital in Germany. A qualitative methodology was applied to explore factors associated with vocational orientation difficulties in young adults that were undergoing treatment. The term ‘vocational orientation’ was chosen to emphasise a broad and open understanding of vocational decidedness. The aim of the study was to identify new starting points from which to promote vocational rehabilitation, from a psychological perspective. Four psychological theories were reviewed in context of the study (Erickson, 1961, 2003; Frankl, 1972, 2007; Holland, 1973, 1997; Holzkamp, 1977; 1985) in order to position the research within psychological treatment and theory; and to identify connections between vocational orientation difficulties and these theories (Dolberg, 2009).

The most outstanding finding of this exploratory research was that vocational undecidedness causes distress; insecurity about the future, detriment to self-esteem and also to perceived social roles. It can induce social (primarily family) conflict and has a negative impact on the motivation to pursue employment. In addition the study illuminated the inadequate representation of vocational indecision in mental health research and practice.

However, there are a number of limitations that apply to this study. The sample was small (N=9) and very heterogeneous in terms of diagnosis. The qualitative method relates to limited generalizability and even though maximal transparency is provided, the interpretative

analysis is subject to bias. Subsequently the current research assesses the phenomena with a quantitative methodology and uses a sample with limited diagnostic variation.

How does the current study make use of existing literature? (Methodological framework study and model development). This study largely draws on the approach taken by Yanos et al. (2008) and uses different, but conceptually alike, measures and a diagnostically different sample. The theoretical considerations (Figure 2; Yanos, Roe, & Lysaker, 2010b) were published two years after the models (Figures 3 and Figure 4; Yanos et al., 2008) were tested and published. Even though Yanos et al. (2008) use the term recovery without differentiation; they consider hope, self-esteem, and perception of stigma as well as more objective indices such as symptom severity. The model appears to address both the traditional and consumer oriented concepts of recovery to a degree. Yanos et al. (2008) did not assess effects on employment or other variables of functioning. Support for the assumption that internalised stigma influences vocational outcomes comes from a later longitudinal study (Yanos et al., 2010a).

Model of the hypothesized impact of internalized stigma on recovery-related outcomes for persons with severe mental illness

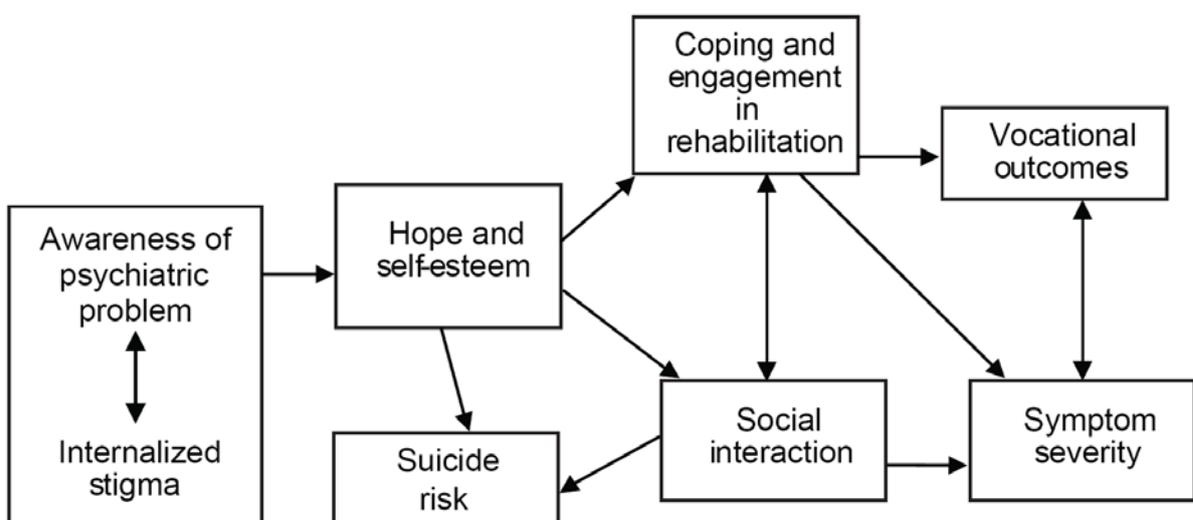


Figure 2. Theoretical model proposed by Yanos et al. (2008; 2010b).

To partially test this model, Yanos et al. (2008) conducted a path analysis including measures of internalisation of stigma, awareness of mental disorder, hope and self-esteem, avoidant coping, social avoidance, depressive symptoms and positive symptoms (see Figure 3). The sample used consisted of persons with schizophrenia spectrum disorders and schizoaffective diagnosis. The model fit indices for the proposed model (Figure 3) suggested that the data fit the model well ($\chi^2 = 11.59, p = .23$; comparative fit index = .98; adjusted goodness-of-fit index = .90, root mean square error of approximation = .05), supporting the view that internalised stigma influences recovery and remission related indices negatively.

Despite the good model fit reported for this model, some regressions proved to be not significant, namely the associations between awareness and hope and self-esteem, awareness and depressive symptoms, awareness and avoidant coping as well as avoidant coping and social avoidance, and avoidant coping and symptoms. Subsequently, Yanos et al. (2008) tested another model which draws on findings by Fialko et al. (2006). It suggests that low self-esteem and suicidal ideation result from distress about psychotic symptoms. The second model (Figure 4) tested positive symptoms as additional exogenous variables instead of seeing them as an outcome.

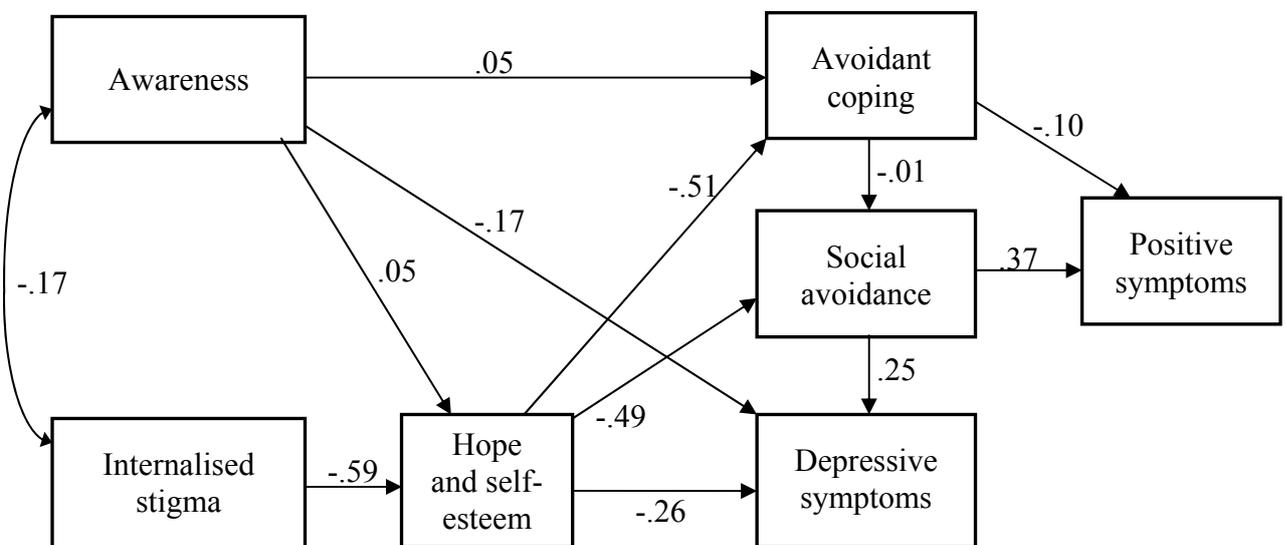


Figure 3. Stigma related model assessed by Yanos et al. (2008).

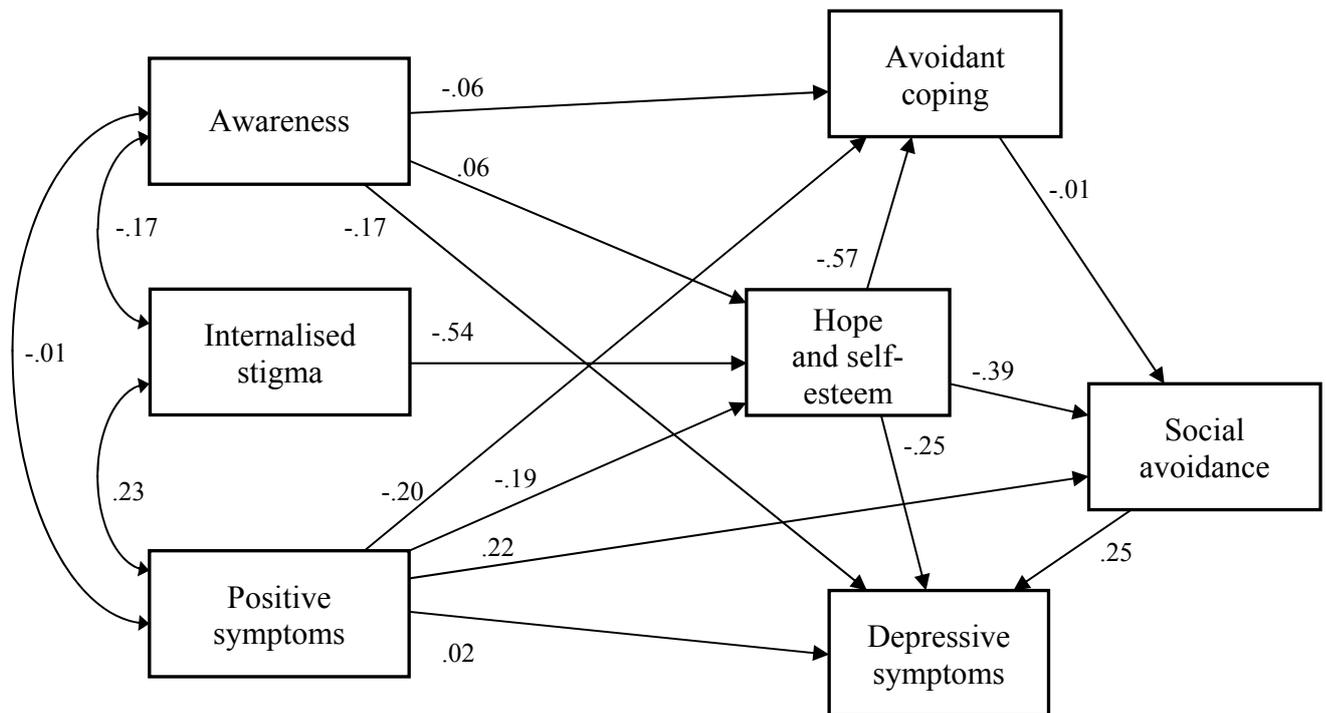


Figure 4. Model 2 assessed by Yanos et al. (2008) where positive symptoms are treated as input.

The significant relationships between stigma and other variables from the first model (Figure 3) were replicated in this model. Model fit indices ($\chi^2 = 11.34$, $p = .12$; comparative fit index = .97; adjusted goodness-of-fit index = .88, root mean square error of approximation = .08) supported the possibility that positive symptoms significantly influence outcomes related to recovery.

With respect to the relevance of hope and self-esteem in the theoretical model (Figure 2) as a mediator between stigma and the outcomes related to recovery, it is noteworthy that hope and self-esteem have been significantly related to vocational thought indices (Creed, Patton, & Hood, 2010; Creed et al., 2005; Horne, 2010; Saunders et al., 2000). The models supported by the data in the research by Yanos et al. (2008) form the basis for the models assessed in the current study. This study assesses whether hope and self-esteem has a significant influence on outcomes related to (non-differentiated) recovery (Figure 5) as identified by Yanos et al (2008) in order to establish a foundation for subsequently assessed models.

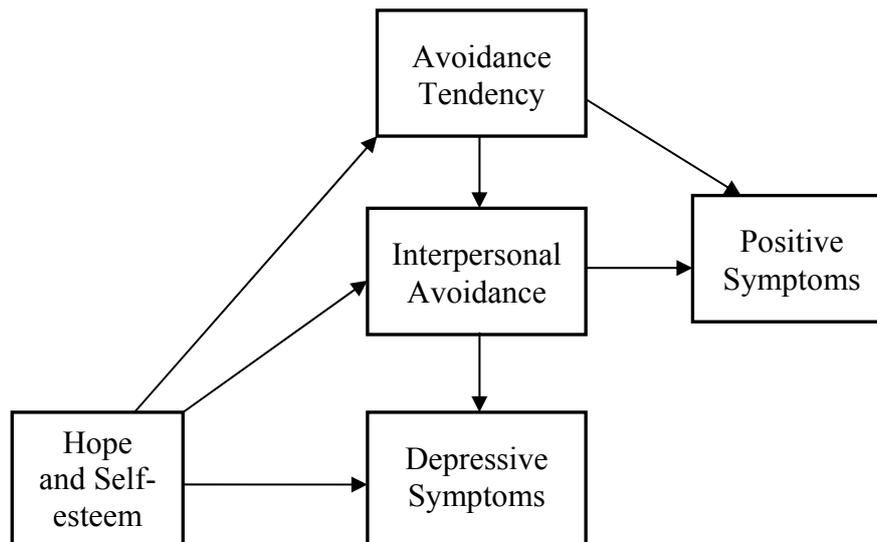


Figure 5. Hope and self-esteem as a major contributor to factors related to recovery.

If this model (Figure 5) fits the data well, the attempt is made to predict hope and self-esteem with the concepts proposed by Yanos et al., (2008) in their first model; stigma indices (Figure 3). If model fit indicates that the stigma predictor model is inaccurate, or can likely be improved, an alternative model is tested. This would ascertain whether vocational thought indices (career decision certainty and dysfunctionality of career thoughts) can be used as predictor variables for hope and self-esteem and consequently other factors related to recovery (Figure 6). This serves as a step towards deciding whether it could be useful to introduce the as yet unresearched vocational thought concepts to mental health research and practice.

It is presumed that vocation related thoughts will affect outcomes related to both remission and functioning, and consumer oriented recovery and that this influence will be partially mediated by the impact of career decision certainty, and functionality of career related thoughts on hope and self-esteem. The more specific assumptions relating vocational thought to the model are delineated below, followed by the review of evidence that create parameters for the subsequent development of the hypotheses.

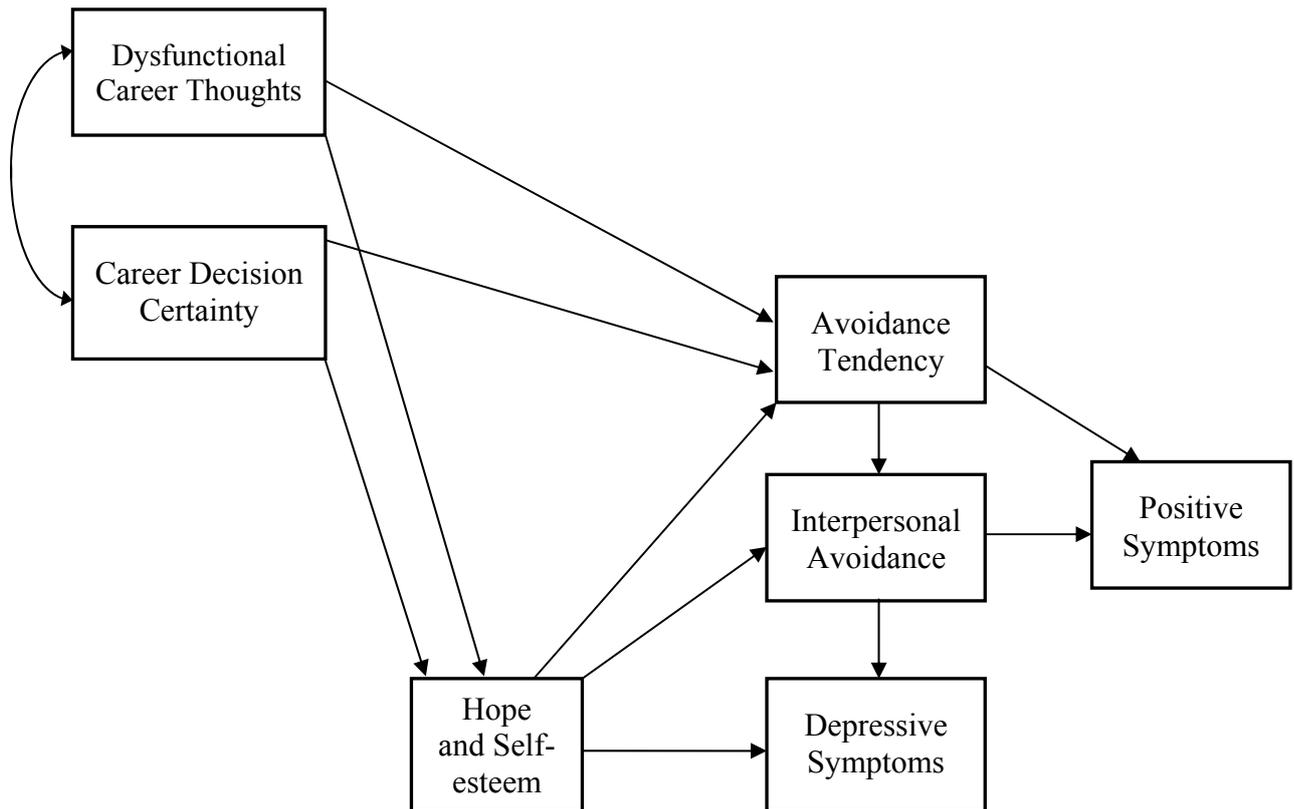


Figure 6. Model for the influence of vocational thought indices on factors related to recovery.

The model in Figure 6 is based on both theoretical considerations and empirical findings. Dysfunctional career decision thoughts have been linked to avoidance behaviour (Judge & Locke, 1993; Sampson, Reardon, Peterson, & Lenz, 2004; van Ecke, 2007), and to hope and self-esteem (Heller, 2008; Horne, 2010; Peterson, Sampson, & Reardon, 1991). As such, it is theoretically feasible that persons with a high degree of dysfunctional decision thoughts are more prone to exhibit avoidance tendencies and experience reduced hope and self-esteem. There are a number of studies suggesting the association of career choice certainty with hope and self-esteem (Creed et al., 2010; Germeijs & De Boeck, 2002; Hurley, 2004; Wanberg & Muchinsky, 1992); and it appears reasonable to infer that certainty in this vocational decision will contribute to a hopeful outlook and more positive self-perception; due to the significance of employment within public life. Furthermore, it is presumed that career decision certainty predicts avoidance tendency; this is supported by empirical findings

(Callanan & Greenhous, 1992; Gordon, 2007; O'Hare & Tamburri 1986; Osipow, Carney & Barak, 1976). It is theorised that uncertainty about career decisions hinders the engagement in problem solving, thereby increasing avoidance tendencies, due to the social significance of vocation. As such, it is not posited that uncertain career thoughts are the major cause of avoidance but rather, as proposed by Yanos et al. (2008) for stigma predictors, that career decision uncertainty contributes to the severity of avoidance tendencies (for further directionality related arguments see appendix D). The overarching questions that can be formulated for the approach in this study are:

- Do vocational decision thoughts play a role in remission and functioning, consumer oriented recovery or both?
- Does the evidence suggest that vocational decision thoughts are appropriate predictor variables for outcomes related to recovery as identified by Yanos et al. (2008)?

As a final point, it is ascertained whether a second model (Figure 4) proposed by Yanos et al. (2008), where positive symptoms are treated as predictor variables, appears promising for further research. Some comments need to be made regarding this second model. Firstly Fialko et al. (2006) found associations of positive symptoms with suicidal ideation. In turn, suicidal ideations (and other variables) were associated with factors such as self-esteem and depressed mood. A direct relationship of positive symptoms to self-esteem or depressive symptoms was not reported. The directional relationships, assumed in the model of Yanos et al. (2008), from positive symptoms to avoidant coping and to social avoidance (Figure 4) are not mentioned by Fialko et al. (2006) nor reasoned by Yanos et al. (2008); as such they lack the necessary theoretical background for use in a path analysis.

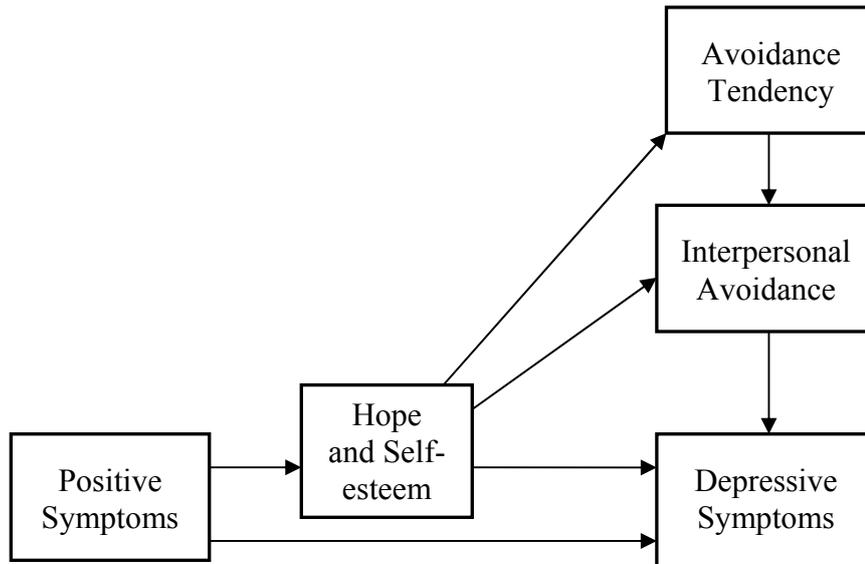


Figure 7. Positive symptoms treated as exogenous variables for ‘outcomes related to recovery’.

Despite the statement by Fialko et al. (2006) that causal inferences cannot be drawn from their study, they do mention that interventions aiming at self-esteem and related negative beliefs may be successful in reducing suicidal thoughts, tentatively implying a reverse causation to the one tested by Yanos et al. (2008). Nevertheless, on the basis of the significant findings presented by Yanos et al. (2008), it will be assessed if positive symptoms may have a merit as exogenous variable, predicting hope and self-esteem, and depressive symptoms directly (as only very tentatively implied by Fialko et al. 2006), and subsequently other factors related to recovery through mediation (Figure 7).

What evidence is there for the association of employment and remission and recovery? “Everyone has a right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.” (United Nations General Assembly, 1948, p. 3; Universal Declaration of Human Rights). This shows that employment is considered important enough to be protected as a human right, emphasising the relevance of work in our society. Therefore it is not surprising that there is a rather extensive amount of research on the associations of employment with different indices of

remission and recovery. For this research, associations of employment with remission and functioning and consumer oriented recovery are of special interest.

Besides the repeated finding on work history (e. g. Anthony & Jansen, 1984; Arns & Linney, 1995; Burke-Miller et al., 2006; Mueser, Salyers, & Mueser, 2001b; Strauss & Carpenter, 1977; Tsang et al., 2010) other historical variables have been associated with employment status such as past hospitalisations (Goethe, Dornelas & Fischer, 1996; Razzano et al., 2005), and self-reported course of illness (Waghorn, Chant & Whiteford, 2002; 2003). Another relevant area within the context of mental health and employment is the reception of benefits. Losing welfare entitlement is seen as a barrier for improvement in vocational areas by mental health practitioners and administrators (Tashjian, Hayward, Stoddard, & Kraus, 1989). There are consistent findings suggesting that participation in more recent approaches of vocational intervention (place and train models) such as individual placement and support and supported employment, are effective in increasing work outcomes for people with severe mental illnesses (e.g. Burns et al., 2007; Rinaldi, Perkins, McNeil, Hickman, & Singh, 2010c). This effectiveness can be increased by incorporating other modules such as cognitive remediation or social skills training (e.g. Killackey, Jackson, & McGorry, 2008; McGurk, Mueser, DeRosa & Wolfe, 2009; Tsang, Chan, Wong, & Liberman, 2009). Nevertheless job tenures are often brief (e.g. Bond, Drake, Mueser, & Becker, 1997; Lehman et al., 2002; Shafer & Huang, 1995). There is also a considerable proportion of participants that cannot realize their employment goals (McGurk & Mueser, 2004). All this implies the need for research in this area. It appears plausible that a self-directed vocational choice may increase satisfaction with, and consequentially the tenure, of the subsequent employment. Additionally, functional career thoughts may contribute to realistic employment goals.

Overall it is noteworthy that different factors may predict different employment outcomes (e.g. work status, job tenure), and that predictors might differ across mental health

subgroups. Reviewing employment related findings provides an initial framework of what could be expected when researching employment related thoughts in the context of mental health.

Employment, and remission and functioning. *Symptoms.* One of the most prominent findings is the association of varying employment factors with symptom remission. Negative symptoms have frequently been associated with different measures of vocational functionality. Evidence for the detrimental effect of negative symptoms on employment outcomes comes from cross sectional research (e.g. Goldberg et al., 2001; Palmer et al., 2002; Priebe, S., Warner, R., Hubschmid, T. & Eckle, I., 1998; Rosenheck et al., 2006; Schulberg, Quinlan, & Glazer, 1999; Slade & Salkever, 2001; Solinski, Jackson, & Bell, 1992), and longitudinal studies (e.g. Evens et al., 2004; Johnstone, 1991; Lysaker & Bell, 1995; Marwaha et al., 2009; Strauss & Carpenter, 1972). A number of publications fail to confirm this effect (e.g. Jonsson & Nyman; 1991; McGurk & Meltzer, 2000), however meta-analytic reviews show that negative symptoms do significantly predict vocational outcomes for this population (e.g. Tsang, Lam, Ng, & Leung, 2000; Tsang et al., 2010). The effects of negative symptoms on vocational functioning may be mediated by their impact on other employment relevant variables such as interview performance (Solinski et al., 1992), task orientation, social skills, and personal presentation (Lysaker & Bell, 1995), or simply the motivation to work (Marwaha & Johnson, 2004).

In general the effect of negative symptoms on employment outcomes appears to be significant over and above the effect of positive symptoms (Hoffman & Kupper, 1997; Kay & Murrill, 1990; MacEwan & Athawes, 1997; Rosenheck et al., 2006; Strauss & Carpenter, 1977). Besides a rather easily imaginable influence of, for example, delusions or hallucinations on employment, assumptions about the connection of positive symptoms with employment are very ambiguous and no clear trend emerges from the literature (cf. Anthony

& Jansen, 1984; Breier, Schreiber, Dyer, & Pickard, 1991; Green, 1996; McGurk & Meltzer, 2000; Palmer et al., 2002; Salkever et al., 2007).

Some research on persons with affective disorders provides evidence that affective, especially depressive, symptoms are strongly correlated with occupational functioning (Dickerson et al., 2004; Goldberg & Harrow, 2011; Hammen, Gitlin & Altshuler, 2000; Mintz J., Mintz L., Arruda & Hwang, 1992; Salkever et al., 2007). Further, the association of increased overall symptom severity with unfavourable employment outcomes is supported rather consistently (e.g. Biegel, Stevenson, Beimers, Ronis, & Boyle, P., 2010; Carpenter & Strauss, 1991; Michon et al., 2005; Racenstein et al., 2002; Sherring, Robson, Morris, Frost, & Tirupati, 2010; Tsang et al., 2010). Some authors also suggest that it might not be the specific symptoms but rather the long-term nature of an illness that influences employment outcomes (Anthony, Cohen, & Farkas, 1990).

Overall the association of symptoms with different employment outcomes such as work status, tenure, and work related skills, in persons with severe mental disorders is well documented. The relationship of employment outcomes to overall psychiatric symptomology, especially to negative symptoms, may additionally be mediated by other relevant factors such as motivation or task orientation (Lysaker & Bell, 1995). Considering diagnosis and medication are strongly linked, especially in the context of descriptive diagnostic systems, to symptoms and symptom remission, a review of these factors and their associations with employment will be useful.

Diagnosis. The most frequent finding in this context is that persons with a diagnosis of schizophrenia have worse vocational outcomes than persons with other diagnoses such as affective or personality disorders (Bush, Drake, Xie, McHugo, & Haslett, 2009; Coryell & Tsuang, 1985; Fabian, 1992; Wewiorski & Fabian, 2004; Wing & Brown, 1970) which is in line with the findings on negative symptoms; although other studies could not find a

significant relationship of schizophrenia diagnoses to vocational outcomes in comparison with other diagnoses (Anthony, Rogers, Cohen, & Davies, 1995; Galvao, Watzke, Gawlik, Hühne, & Brieger, 2005; Massel et al., 1990; Rogers et al., 1997a).

In light of the heterogeneous findings regarding diagnosis, Marwaha and Johnson (2004) argue that the very low employment rates in schizophrenia are not intrinsic to the illness itself, but appear to reflect an interaction between the social and economic pressures that patients face. Some reviews show accordingly that diagnosis is a poor or non-significant predictor of work outcomes (Anthony & Jansen 1984; Michon et al., 2005)

To summarise, schizophrenia and affective diagnoses have often been found to have a negative influence on work outcomes. These findings are consistent with evidence on negative symptoms and employment, in part because these symptoms are more likely to represent a specific behavioural impairment.

Medication. Studies on medication, in accordance with the intended purpose of psychoactive medication, usually focus on symptoms as main outcome. Some studies report findings on employment outcomes and find for example, Clozapine treatment (vs. other antipsychotic treatment) leading to a higher rate of regular occupational activity (Wheeler, Humberstone, & Robinson, 2009). Others report increased employment rates for persons on atypical medication compared with first generation antipsychotics (Hamilton, Edgell, Revicki, & Breier, 2000; Malla et al., 2004). Others again showed modest or non-significant results regarding the impact of atypical antipsychotic medication on work status (Bond & Meyer, 1999; Meyer, Bond, Tunis, & McCoy, 2002; Voruganti et al., 2000; Ziegler & Peachey, 2003). Also, the sedating effect of medication can affect working opportunities negatively (Bassett, Lloyd, & Bassett, 2001).

Mintz, Mintz and Phipps (1992), writing on the treatment of mental disorders and the functional capacity to work, state that "Neuroleptic drugs clearly attenuate symptoms and reduce relapse risk, but there is a striking consistency of findings that suggest that they may impair work capacity." (p. 312).

These reviewed findings on medication and work do not show a very clear pattern. Possibly side effects negate the positive effects that symptom reduction may have on employment outcomes. The current evidence suggests that medication does not sufficiently support vocational outcomes enough to justify its use for this purpose.

Functioning. Functioning is a factor that received considerable attention in research regarding employment outcomes. There are some findings that suggest measures of general functioning to be predictive of later employment (Cook & Rosenberg, 1994; Jones, Perkins, & Born, 2001; Razzano et al., 2005; Reker & Eikelmann, 1998; 1999).

More recently, cognitive functioning and factors such as attention, memory, executive functioning and verbal learning, gained more prominence in association with work outcomes. These variables have the advantage that in contrast to work history they are targetable through interventions and psychological training programs.

Cognitive Functioning. There are a reasonable amount of studies with a cross-sectional or retrospective design that support the predictive value of varying neuro-cognitive factors for work outcomes in the general psychiatric population (Bellack, Gold, & Buchanan, 1999; Jaeger & Douglas, 1992; Palmer et al., 2002; Suslow, Schonauer, Ohrman, Eikelmann, & Reker, 2000). Some prospective studies also support a significant contribution of neurocognitive functioning to work status (Bell, Tsang, Greig, & Bryson, 2009; Mueser et al., 2001b; Westermeyer & Harrow, 1987).

A review conducted by Tsang et al. (2000) suggested cognitive functioning as a predictor of employment outcomes more than a decade ago. Some authors argue that functioning cuts across clinical diagnosis and clinical symptomatology and that it is therefore a more important factor than diagnosis in understanding work ability (Cook & Rosenberg, 1994; Gaudino, Matheson, & Mael, 2001; Kaneda, Jayathilak, & Meltzer, 2009; 2010).

Tsang et al. (2010) later showed that overall cognitive functioning was recently the most intensively studied variable in the context of employment outcomes in schizophrenia. They found that cognitive functioning, and in particular executive function and general intelligence, received overall support as a significant predictor. Other studies suggest that learning, (working) memory, and executive function significantly predict vocational outcomes (Evans et al., 2004; McGurk & Meltzer, 2000; McGurk & Mueser, 2004; McGurk, Mueser, Harvey, La Puglia, & Marder, 2003). However, some research suggests that neither attention nor memory by itself is associated with competitive work (Hoffman & Kupper, 2003; Tsang et al., 2010). This may suggest that cognitive functioning only predicts employment when multiple aspects of the construct are assessed.

A very recent finding that had specific influence on the current research was conducted by Nuechterlein et al. (2011). They assessed cognitive functioning and work outcomes in persons with a recent onset of schizophrenia. The results suggest that three orthogonally derived cognitive factors (working memory, attention and early perceptual processing, verbal memory and processing speed) accounted for as much as 52% of the variance in vocational outcome. Similar predictive value in the context of work outcomes has only been found for work history (Anthony, 1994; Anthony et al., 1990). Therefore two subtests (the CPT-IP and the WMS-III Spatial Span) of the MATRICS Consensus Cognitive Battery (Nuechterlein & Green, 2006) were selected in the current study to assess indices of

memory and attention. That better cognitive abilities have a positive impact on vocational re-integration of patients with severe mental disorders appears to be scientifically ascertained.

Generally, in research conducted in interventional contexts, it seems that the observed work skills and observed work functioning during such interventions are predictive of later employment (Anthony & Jansen, 1984; Cook & Razzano, 2000; Hoffmann, Kupper, Zbinden, & Hirsbrunner, 2003; Reker & Eikelmann, 1999; Rogers et al., 1997a). However, findings that cognitive functioning is more predictive of employment in the control than in the treatment group are interesting (McGurk et al., 2009; Mueser, 2002). The finding that cognitive functioning is more predictive of employment in samples not involved in vocational rehabilitation could give rise to the hypothesis that part of the effectiveness of vocational intervention programs is due to the compensation for deficiencies in vocation related cognitions (e.g. decision making and assertiveness).

Social Functioning. A number of studies focused on functioning and employment address the association of social functioning with vocational outcomes (Cook & Razzano, 2000; Morgan & Gopaldaswamy, 1983; Tsang et al., 2000; Weeghel, 1997). Cook and Razzano (2000) review several studies that point to the connection between social skill deficits and poorer work performance. This appears to be the case even when controlling for illness factors (Evert, Harvey, Trauer, & Herrman, 2003).

Even though the evidence suggests that social functioning is a promising predictor of employment outcomes, some authors argue that it is difficult to clearly distinguish social functioning from other psychopathological factors such as negative symptoms or cognitive functioning (Galvao et al., 2005; Vauth, Rüscher, Wirtz, & Corrigan, 2004).

Summary. The empirical evidence available suggests that multiple facets of remission and functioning are related to employment outcomes. Which aspects of symptom remission

and functioning relate to which factors of employment, and in what manner, still needs to be determined. For example specific symptoms (foremost negative symptoms) and different aspects of functioning (indices of cognitive functioning) appear to have a considerable influence on employment outcomes. However, work history and observed work performance during rehabilitation are currently the most important predictor variables (Matschnig et al., 2008). Matschnig et al. (2008) state that the specific personal needs of clients should shape vocational interventions and that a deeper understanding of person-specific problems and barriers is accordingly required. Areas yet under-represented in research – such as specific vocational thought content – may contribute to further clarifying predictive and moderating variables in the context of work and recovery.

Employment and consumer oriented recovery. Employment is one of the most important factors in promoting recovery and social inclusion (Rinaldi et al., 2010a). For most people work is a part of normal everyday life and it builds a hub from which many other areas of functioning emanate. Work does not only provide an opportunity for financial independence, but can also provide structure and purpose, opportunities for socializing and developing new relationships, a sense of identity, self-worth and meaning in life (Jahoda, 1982; Warner, 1994). Work provides the means for people who have experienced mental health conditions to engage in a stigma-free social role that is associated with a positive identity. The status as an employed person is associated with being perceived as a contributing member of society (Rinaldi et al., 2010a).

Even though the relevance of work to consumer oriented recovery is repeatedly noted, evidence relating to employment outcomes, specifically to aspects of this form of recovery, is less commonly reported. This may be due to the fact that a client's understanding of her or his recovery is a core aspect in the concept of consumer oriented recovery, resulting in individualistic and varied definitions. This research identified five major themes (hope, self-

direction, empowerment, quality of life, identity) as outlined earlier. A question that may arise in the context of this individualised approach is whether or not these categories are discernible aspects or are different labels for the same phenomenon. Some research points towards the relative independence of the various domains of recovery (Lieberman et al., 2008). However, since it is an individualised concept it is difficult to conduct research with a commonly applicable definition of consumer oriented recovery. However, some findings point towards the discriminability of the here used major themes.

For example hope and optimism are discriminable from quality of life and life satisfaction (Lucas, Diener, & Suh, 1996); evidence supports good discriminative validity regarding internal locus of control (Joo, Joung, & Sim, 2011; Levenson, 1973; 1974) although it is not explicitly addressing self-direction. More direct evidence is available for the discriminate validity of empowerment (Castelein, van der Gaag, Bruggeman, van Busschbach, & Wiersma, 2008; Herbert, Gagnon, Rennick, & O'Loughlin, 2009; Wowra & McCarter, 1999) whereas sub-dimensions of empowerment are discussed ambiguously (Kraimer, Seibert, & Liden, 1999; Seibert, Wang, & Courtright, 2011). It seems likely that empowerment relates to constructs such as locus of control, self-direction and self-esteem (e.g. Spreitzer, 1995). Quality of life is also a well-researched construct and findings suggest it to be a distinguishable one (Linde, Sørensen, Østergaard, Hørslev-Petersen, & Lund Hetland, 2008; Skevington, Lotfy, & O'Connell, 2004). Identity is a broad construct in this context; it has ties to the concept of personality which has good evidence for its discriminative validity (e.g. Costa & McCrae, 1992). In this research, identity incorporates social roles and contacts. Finally stigma is subsumed under the concept of identity in the current conceptualisation of consumer oriented recovery. Evidence suggests sufficient psychometric properties of stigma as a concept (Ritsher, Otilingam & Grajales, 2003; Pinel 1999). However, as a consequence of the varying definitions and the individualised focus of

consumer oriented recovery, research specifically regarding the inter-relation and discriminability of its aspects has yet to reach a consensus. A more thorough evaluation of correlations and discriminability of recovery aspects is desirable, but is well beyond the scope of the current study. The discussed research indicates the discernibility of the five themes, and the mentioned review articles (Bellack, 2006; Collier, 2010; Onken et al., 2007; Stickley & Wright, 2011) are considered adequate to provide a basis to delineate assessable aspects. Findings relating employment to indices of consumer oriented recovery as it is understood in this research will accordingly be reviewed below.

Hope and self-esteem (positive perception of self, optimism and perception of a controllable future). Findings on the relationship of employment to hope in the context of mental health are somewhat sparse. Lent, Brown, and Hackett (1994) hypothesised that hope could be one of the mediating factors contributing to the predictive value of work history. Hoffmann, Kupper, and Kunz (2000), using a sample of schizophrenic outpatients in a vocational rehabilitation program, stated that early drop-out from the program (compared to persons whom gained and maintained competitive employment) could be predicted to a high degree by the presence of hopelessness (e.g. pessimistic outcome expectancies) and depressive-resigned coping strategies. A study by Davis, Nees, Hunter, and Lysaker (2004) associations of different aspects of hopelessness, assessed with the same measure as the current study (Beck Hopelessness Scale), to work functioning in persons with schizophrenia.

The above literature suggests that hope has at least mediating functions in the context of vocational rehabilitation, its importance being further stressed by multiple first person accounts in the context of consumer oriented recovery (Andresen et al., 2003; Ralph, 2000; Wiles, Cott, & Gibson, 2008) supporting its relevance in the process of overall rehabilitation.

A number of findings are available concerning the extent to which positive self-esteem is related to employment. There is evidence suggesting that failure in employment and

chronic unemployment contribute to perceived personal inadequacy and low self-esteem, while positive job experiences seem to increase self-esteem and personal mastery (Anthony & Blanch, 1987; Mackota & Lamb, 1989). Marwaha & Johnson, (2004) stated that a main barrier to employment for people with severe mental illness is low self-esteem and, similar to the argument made here, work related attitudes. In this context it is interesting to note that chronic mental illness has generally been associated with poor quality of life and low self-esteem (Ingham, Kreitman, Miller, Sashidharan, & Surtees, 1986; Lehman, Possidente, & Hawker, 1986). Thus self-esteem may have a mediating influence on the relationship between employment and mental health.

Although there are studies that do not replicate these findings (Bailey, Ricketts, Becker, Xie, & Drake, 1998; Chandler, Meisel, Hu McGowen, & Madison, 1997; Weinberg, Shahar, Davidson, McGlashan, & Fennig, 2009), a review of studies identifying predictors of employment showed that working overall appears to be correlated with self-esteem (Marwaha & Johnson, 2004).

Self-direction (agency, self-determinism and efficacy, choice of meaningful options and activities promoting recovery). The subjective perception of self-direction has a considerable theoretical background through the concept of self-efficacy. Amongst others Bandura (1986) has shown that specific self-efficacy is a component of motivation that increases the occurrence of certain behaviours. Michon et al. (2005) in their review on person related predictors of employment showed that besides better work performance the best predictor was higher work-related self-efficacy.

Studies showed that participants with higher self-related outcome expectancies (Hoffmann, Kupper, & Kunz, 2000; Reker & Eikermann, 1998) or higher ratings of 'career-search self-efficacy' (Regenold, Sherman, & Fenzel, 1999) had better employment outcomes.

Rinaldi et al., (2010a) argued that motivation and self-efficacy have a stronger impact on vocational outcomes than factors such as diagnosis, severity of symptoms or social skills.

Agency or the capacity of individuals to make choices and act independently is related to vocational choice and decision making. Mueser et al. (2001b) found that persons who expressed a desire for employment and purposefully engaged in job-searching were more likely to achieve employment than those who did not actively pursue vocational goals.

With regards to activities promoting recovery; there is little evidence that helping people with mental health conditions re-enter employment increases the likelihood of clinical deterioration, relapse, or hospitalization (Bond et al., 2001; Bond, Dietzen, McGrew, & Miller, 1995; Burns et al., 2007 Mueser et al., 2004), while being unemployed increases the risk of relapse for example for persons with psychosis after one year following a first episode (Owens, Johnstone, Miller, Macmillan, & Crow, 2010).

Relating to meaningful options, Strauss, Harding, Silverman, Eichler, and Lieberman (1988) argued that those with severe mental illness seem to especially benefit from work because it provides a needed structure and opportunities for socialization and meaningful activity. A study conducted by Eklund, Hansson, and Ahlqvist (2004) showed that persons with work were more satisfied with their daily occupations than participants with no or only community structured daily activity. This stresses the importance of actual (competitive) employment for persons with long-term mental illness.

Overall self-determinism and efficacy appear to be related to employment outcomes. The literature suggests that consciously developed goals and related activity influences vocational outcomes positively and provides some evidence that self-direction as part of consumer oriented recovery can be promoted through work.

Empowerment (strength based promotion of potentiality, related self-awareness and self-esteem). The movement that fostered the increased prominence of consumer oriented recovery also increased research on empowerment. In spite of existing quantitative empowerment scales quantitative findings on the relevance of this concept for work outcomes are inconclusive.

Recently Lloyd et al. (2010) found in a sample of persons mainly suffering from schizophrenia, depression, and bipolar disorders that empowerment was significantly higher for people engaged in paid employment than for those receiving social security benefits. Empowerment was related to income but not to employment status in a study conducted by Rogers et al. (1997a). When divided into productive activity (including volunteer and sheltered work) and competitive jobs group differences in empowerment scores still failed to be significant. However, among the respondents who were engaged in productive activity, a significant positive relationship was found between the number of hours engaged in work and empowerment.

In summary, empowerment appears to be related to some aspects of employment. Work may provide a way of empowering persons with severe mental illnesses even though the quantitative evidence is not extensive.

Quality of life (well-being and meaning to life, perception of individual purpose, meanings ascribed to experiences such as coping, healing, wellness, and thriving). There is a considerable amount of research on quality of life in the context of employment. Even though the factors derived from some quality of life scales are not a hundred percent congruent with what commonly understood as part of consumer oriented recovery, these scales give valuable indicators for a general understanding of well-being.

There are a number of studies that suggest that employment and quality of life are related to each other (e.g. Arns & Linney, 1995; Eklund, Hansson, & Bejerholm, 2001; Fabian, 1992; Priebe et al., 1998). Results of a study by Eklund et al. (2004) suggested that consumers with competitive work were more satisfied with their daily occupations than persons with other structured daily community activities or no activities pointing towards the capacity of competitive work to increase quality of life..

A number of large scale studies support these findings (Priebe et al., 2010; Rosenheck et al., 2006). Alonso et al. (2009) found that improvements in health related quality of life scores were greater for more socially active patients or those in paid employment. A study using a subsample of the Alonso et al. (2009) study (Novick, Haro, Suarez, Vieta, & Naber, 2009) found functioning at baseline, (having good vocational status, living independently, and being socially active) was one of the most important predictors of live-quality and recovery (operationalized as lasting symptom remission, functional remission, and adequate quality of life).

In spite of this rather clear trend some studies fail to replicate significant associations of quality of life with employment outcomes (Fabian, 1989; Lehman, 1988; Mueser et al., 1997). Skantze, Malm, Dencker, May, and Corrigan, (1992) hypothesised in this regard that as long as basic needs were met (e.g. through benefit payments) perceived quality of life was independent of living standard and income.

A closely related concept to quality of life is well-being. A reasonable amount of research documents that a satisfactory situation with daily occupations, including work or studies is related to general health and well-being (Aubin, Hachey, & Mercier, 1999; Eklund et al., 2001; Law, Steinwender, & Leclair, 1998; Wilcock et al., 1998). Priebe et al. (1998) showed that employed participants displayed less psychopathology and did better on objective and subjective measures of income and well-being.

Meaning is a process of subjective experience and only a few studies examined the subjective experience of employment in the context of consumer oriented recovery. Existing qualitative studies found that people with psychiatric disabilities view work as central to their recovery (Killeen & O'Day, 2004; Krupa, 2004; Provencher, Greg, Mead, & Mueser, 2002). Also, similar to negative symptoms, a diminished sense of purpose can interfere with decision making, the planning necessary to begin vocational rehabilitation and persistently hinder the job search process (Lehman, 1995).

It can be concluded that employment has considerable effects on areas such as subjective quality of life and well-being. Qualitative research suggests that employment can contribute to the perception of meaning in life and that subjective work related experiences and thoughts appear to have mediating effects on the relationship of health and employment.

Identity (social roles and contacts, an identity beyond illness, respect and responsibility and stigma, peer support and integration). There are a fair amount of publications that indicate the relevance of work for identity processes. For people with psychiatric disabilities, work has been shown to be a source of identity beyond the illness, and an opportunity to seek out and meet new challenges (Kirsh, 2000). Cunningham, Wolbert, and Brockmeier (2000) showed that the participants who were employed tended to be able to see their illness as just one part of who they were. Further loss of social roles, especially work, appears to be consistently linked to depression and suicidal thinking in psychosis (Birchwood & Fiorillo, 2000).

Hayes and Halford (1996) found that being unemployed and having schizophrenia shared certain negative characteristics. This does support the association of aspects of employment with identity and roles and the notion of a general association between mental health and employment.

There are a number of publications which suggest that stigma is related to identity processes and employment. Work, Rinaldi et al., (2010a) stated, enables consumers to take on a stigma-free social role that in most societies is associated with positive identity and the status as a contributing member of society. There is evidence that persons who are working are perceived as more 'normal' (Connors, Graham, & Pulso, 1987), that the degree of internalisation of stigmatic beliefs at baseline is predictive of change in vocational functioning (Yanos et al., 2010a), and accordingly that persons who replace self-stigmatizing attitudes with positive expectations about work and independent living will be more successful in the pursuit of these goals (Corrigan, 2002).

Rosenheck et al., (2006) found that persons who were in competitive or alternative employment differed significantly on measures of social relationships. Similarly employment appears to be more likely for persons who had readily accessible social support (Wilkins, 2004). Lent, Brown, and Hackett (2000) reported that most young people gain job leads with support from family members and friends. There is, however, evidence that suggests that this active job finding support diminishes with the onset of a mental illness and is typically replaced by low expectations (Bassett, Lloyd, & Bassett, 2001; Gioia, 2006).

Low expectations of mental health professionals regarding clients gaining employment, often related to concerns about risks, stress, and relapse, are rather well documented (Marwaha, Balachandra, & Johnson, 2008; Rinaldi, Miller, & Perkins, 2010b). Low expectations, however, are likely to result in clients and their families receiving very cautious messages from the professionals about gaining employment, which in turn may reinforce the "disability-role" and support the dependency on welfare rather than supporting swift access into work and its reinforcing aspects (Gioia, 2006; Rosenheck et al., 2006). This subsequently endangers clients to be subject to the negative consequences of unemployment

and there is little research that suggests that re-entering employment increases relapse risk or hospitalization (Bond et al., 2001; Burns et al., 2007; Mueser et al., 2004).

A number of studies (Catty et al., 2008; Davis & Lysaker, 2007; Donnell, Strauser, & Lustig, 2004) found that employed clients had a better working alliance with their counsellors than unemployed clients, pointing at the impact professional support can have, and those employed consumers with a stronger working alliance had more positive future work expectancies and were more satisfied with their employment.

Overall the findings on relationships of employment with indices of identity show that work is closely related to social roles, social contacts and self-perception. Empirical evidence suggests that related concepts, such as experience of stigma as well as peer and professional support appear to be associated with employment outcomes.

Summary. There is sufficient evidence to suggest that different aspects of employment are associated with the here used concept of consumer oriented recovery. Accordingly it appears safe to say that different aspects of vocational activity are related to the process of consumer oriented recovery. However, it remains difficult to precisely assess which aspects of employment foster which areas of consumer oriented recovery, especially because what consumer oriented recovery means is subject to individual perception. It appears reasonable to assume that for many consumers employment could be a means to foster their process of moving beyond the illness and thus foster their recovery.

What findings are there on concepts related to vocational thoughts in the context of mental health? A number of studies, within mental health, use concepts that are related to vocational decision making, dysfunctionality of career thoughts, and job-hunting assertiveness; or make assumptions associated with these concepts.

One older study that influenced development of the current approach was conducted by Rogers, Anthony, Toole, & Brown (1991) with persons who actively expressed a vocational goal. They suggested that being decided on a vocational goal influences other outcomes, and that this decidedness may be underlying the predictive value commonly attributed to work history, as regards employment outcome. Lehman et al. (2002) argued that omission of the orientation sessions conducted by Drake et al. (1999), which were utilised to ascertain vocational orientation, had likely resulted in recruitment of less oriented, less motivated participants. The lower motivation had in turn contributed to lower observed employment rates, suggesting the importance of vocational orientation for employment outcomes.

Mueser et al., (2001b) assessed persons with schizophrenia and found significant relationships between expressed desire to work and employment status one or two years later. Most likely to obtain competitive employment were participants who both wanted to work and had made directed efforts to find work over the prior month.

More recently Waghorn and Chant (2007) investigated work-related subjective experiences in association with having an expressed vocational goal among people with schizophrenia and schizoaffective disorder. Baseline bivariate assessment of having a current vocational goal correlated significantly with a number of social, vocational, clinical, and self-efficacy variables. These results point towards the assumption made in this research, that vocation decidedness is associated with different indices of remission and functioning and consumer oriented recovery.

A closely related concept to choice certainty is the assessment of job-preferences. Three studies addressed this concept (Becker, Bebout, & Drake, 1998; Becker, Drake, Farabaugh, & Bond, 1996; Mueser, Becker, & Wolfe, 2001a) and repeatedly found that

clients who worked in an area according to their preferences had significantly higher job satisfaction and job tenure than persons not working in their preferred field.

Ciardello and Bingham (1982), examining the career maturity of schizophrenic patients, stated that one problem for long-term mentally ill persons was that they did not have adequately developed attitudes and competences for career decision making. Similar to the assumption made in the current research, the authors stated that the career development approach to rehabilitation not only facilitates vocational development, but also improved quality of life and promoted self-fulfilment. The authors stated that the only empirical evidence regarding these suggestions came from published case studies (Ciardiello & Bingham, 1982; Gioia, 2006).

Waghorn and Lloyd (2010), in a chapter on employment and mental illness, named career immaturity as one barrier of employment for this population. The authors stated that the experience of mental illness could negatively influence work values and the perception of work skills which in turn could impair vocational goal setting and hence vocational decision making.

Considering the modest success rates (high dropout, short tenure, entry-level jobs) of vocational rehabilitation programs (Baron & Salzer 2002; Bustillo, Lauriello, Horan, & Keith 2001; Mueser et al., 2001a), strategies for improving the effectiveness of these interventions, such as applying career developmental concepts and techniques, are needed. Gioia (2005) suggested that individuals, for whom supported employment had not been the panacea, might be helped by paying attention to consumer preference and vocational identity.

Other support comes from a qualitative inquiry by Baron (2000) investigating career patterns of persons with serious mental illness. Despite the finding that the vast majority of persons with mental disorders expressed a desire to work, almost none had made a decision

about what they would do to reach this goal (Baron, 2000; Baron & Salzer, 2000), which hints at the possible benefit of supporting career decision making.

A study that is regularly mentioned in the literature assessed individuals' readiness to make a change and whether it related to vocational outcomes (Ferdinandi, Yootanasumopun, Pollack, & Bermanzohn, 1998). The authors argued that understanding the variability in subjective attitudes toward work, and incorporating those vocation related thoughts into the overall clinical assessment, might be crucial for developing individualised treatment and rehabilitation. By merging the results from vocation related thought assessments (such as readiness to change or decision certainty) with a client's subjective experiences, it should be possible to increase the 'hit rate' for linking specific rehabilitation modalities and assessed needs resulting in better biopsychosocial outcomes.

Cook and Razzano (2000), in their review of vocational rehabilitation, specifically referred to the relationship between negative symptoms and career decision making. Referring back to the findings of Ferdinandi et al. (1998) they concluded that it could be critical for the vocational rehabilitation of persons with schizophrenia to cultivate and support the individual's decision to seek employment.

Readiness is a concept that has received research attention in multiple different contexts. Some theoretical models suggest that job-seeking skills and self-efficacy in the area of job readiness are crucial for persons to believe in their ability to become employed (Strauser, Ketz, & Keim, 2002). Accordingly Waghorn and Chant (2007), using structural equation modelling, found that work-related self-efficacy and subjective work experience were associated with current employment.

Yanos, Knight, and Roe (2007) argued that whether or not people will engage positive work attitudes is dependent on how people choose to define their experience, that is whether they made the choice that work provides a means to income and an opportunity for engaging

in productive activity, or view unemployment and the following enrolment in the disability system as a symbolic surrender to the disability. Similarly Baron (2000) speculated in his qualitative study that it was not work experience itself that made a difference in work retention, but the individual's perception of the value and meaning of these experiences.

Shogren, Faggella-Luby, Jik Bae, and Wehmeyer (2004) stated that offering opportunities for making choices (and teaching choice-making skills, if necessary) was a key element in enhancing self-determination, which has been associated with other positive psychosocial outcomes for persons with disabilities (Wehmeyer & Palmer, 2003; Wehmeyer & Schwartz, 1997; 1998) and with employment (Blustein, 2006).

Summary. Even though no other research before has specifically considered decidedness and career thought functionality in the context of mental health, there is sufficient evidence that support the usefulness of its consideration in mental health rehabilitation. Evidence further suggests the beneficial influence of career choice certainty and associated choice interventions on behaviour, employment outcomes, and health indices (Cannella, O'Reilly, & Lancioni, 2005; Cook & Razzano, 2000; Shogren et al., 2004). Additionally there are some publications which support the relevance of job-search activity, which in this research is addressed through vocational assertiveness (Mueser et al., 2001a; Strauser et al., 2002).

What evidence is there for the association of vocational thoughts and indices of remission and recovery? Employment has been shown to have multiple touching points with, and a good potential to support, mental health remission, functioning, and consumer oriented recovery. The subsequent question in this research is if the same can be assumed about vocation related thoughts such as decidedness, functionality of career thoughts and job-hunting behaviour. Since this study pilots researching these vocational concepts within a

mental health population, findings from other populations are reviewed here to provide a basis for the assumed association.

Research has shown that 60% of the career counselling clients experienced considerable psychological distress and that this distress was lowered through career counselling interventions and furthermore, that this decrease in distress (Multon, Heppner, Gysbers, Zook, & Ellis-Kalton, 2001), similar to psychological interventions in clinical settings (Wampold, 2001), was related to the therapeutic working alliance. There is some evidence showing that it is common for persons who look for career counselling to simultaneously receive mental health interventions (Pace & Quinn, 2000; Veroff, Kulka, & Douvan, 1981). Austin (2005) found significant relationships between dysfunctional career thoughts and indicators of salutogenetic functioning (especially sense of coherence) in an adult sample of job-seekers. Swanson (1995) argued that psychologists generally overlooked the potential of career counselling in this context and cited Herr (1989); “[...] logic would argue for career counselling to be a useful process in the service of improved mental health” (p. 13).

Thus the association of career counselling with mental health is not a new thought; its potential to contribute to remission and recovery has been discussed, but not yet researched in a structured way.

Vocational thoughts and indices of remission and functioning in other populations.

A number of studies have assessed symptom related concepts such as general symptom distress, depression, and anxiety in the context of vocation related thoughts in more general populations. It is noteworthy that correlations between dysfunctional career thoughts and indices of indecision have been found (Austin, Wagner, & Dahl, 2004; Saunders, 1997).

Research has replicated findings of associations of anxiety with dysfunctional career thoughts

assessed with the Career Thoughts Inventory (Newman, Fuqua, & Seaworth, 1999; Saunders, Peterson, Sampson, & Reardon, 2000), which has been used for this study.

Symptoms. Koivisto (2010) assessed adolescents and the association of career interventions with mental health and employment. He found that career interventions had a beneficial effect on general psychological distress and depression, for those at risk for mental disorders at baseline. He proposed a mediator effect where the intervention increased employment preparedness, which in turn increased the chances of employment, thus reducing financial strain, and promoting the construction of working life goals, subsequently lowering depressive symptoms and symptom distress.

Meldahl and Muchinsky (1997) found that, besides the aforementioned level of stress, negative affectivity and trait and state anxiety could discriminate individuals with different levels of indecision and indecisiveness. Uthayakumar, Schimmack, Hartung, and Rogers (2010) stated that career decidedness was related to depression, and that decidedness partially mediated depression's influence on subjective well-being, when controlled for personality effects. Other research found a significant positive correlation between Beck's Depression Inventory and dysfunctional career thoughts, supporting the assumption that depression was not only related to career indecision but also to the functionality of career related thoughts (Degenhart, 2004; Saunders et al., 2000). Saunders et al. (2000) stated that career indecision entailed a "complex problem space of both cognitive and affective variables [...]. Vocational identity, state and trait anxiety, locus of control, depression, and dysfunctional career thoughts, are all significantly associated with the state of career indecision and with each other." (p. 294). With regard to job search behaviour, Price, Van Ryn, and Vinokur (1992) found that job search interventions showed a significant impact on incidence and prevalence of more severe depressive symptoms among high-risk individuals.

Overall, there is considerable evidence that suggests that vocational thoughts and decisions, as well as job-hunting behaviour, are associated with psychopathological symptoms.

Functioning. Even though functioning and cognitive abilities have not received the same amount of research attention in the context of career counselling as they have in mental health rehabilitation, some studies suggest associations between vocational thought content and areas of functioning. Feldman (2003) for example suggested that general cognitive ability is inversely related to career indecision. General intellectual abilities were found to be associated with higher career decidedness by Hollender (1971).

Further there is evidence that indices of general cognitive functioning are positively related to the quantity and quality of job search activity (Kanfer & Kantrowitz, 2002) supporting the view that cognitive skills help people grapple effectively with the demands of choosing a vocation. Indecisive clients have been described as having a not functional, maladaptive approach to problem solving, accompanied by a dysfunctional level of anxiety (Sampson et al., 2004), which may be especially prominent in those who have to cope with additional stressors such as a mental illness. Carr (2004) found a reciprocal relationship between maladaptive psychological factors and difficulties in career decision making, which supports the assumption that career decision problems are related to psychopathology.

Krieshok, Black, and McKay (2009) suggested that rational as well as intuitive processes influence decision making. Tentatively supportive is that additionally to the influence of general cognitive functioning on career decision making there is evidence that emotional intelligence correlates with career decidedness. This is especially interesting in light of evidence suggesting that the concept of emotional intelligence is associated with mental health (Ciarrochi, Deane, & Anderson, 2002; Downey et al., 2008; Hansen, Lloyd & Stough, 2009; Hertel, Schütz, & Lammers 2009).

Overall there is sufficient evidence to support the view that cognitive functioning is related to career decisions and job-hunting behaviour. Further general problem solving abilities, indices of intellectual capacities such as emotional intelligence appear to relate to career decidedness as well.

Summary. There is a respectable amount of evidence that supports the association of vocation related thoughts such as career decision making with indices of remission and functioning. Considering that these concepts have never been explicitly researched in the context of remission and functioning in mental illness it might still be considered surprising that a notable amount of results suggest significant associations. It has been proposed that personal and work adjustment coexists in a symbiotic, interdependent way in which problematic intrapsychic, environmental and interactive events interconnect (Herr, 1989).

Vocational thoughts and indices of consumer oriented recovery in other populations. Associations found of vocational thoughts with indices of consumer oriented recovery are reviewed in the same fashion as the associations of employment with consumer oriented recovery in mental health samples.

Hope and Self-esteem (positive perception of self, optimism and perception of a controllable future). There are a number of studies that rather consistently associate different types of pessimistic, hopeless perceptions with career indecision and indecisiveness (Horne, 2010; Larson, Heppner, Ham, & Dugan, 1988; Nevo, 1987; Saunders et al., 2000; Stead, Watson, & Foxcroft, 1993). Stern et al. (2010) recently found in a sample of young cancer survivors that a present fatalistic perception of the future was related to career decision making difficulties. Hurley (2004) showed hope to be a significant predictor of career indecision and certainty and Creed, Patton and Bartrum (2004) found that optimistic/pessimistic views were predictive of career decision-making self-efficacy in male students.

A very consistent finding, which relates to perceiving oneself positively, is the relationship of career decidedness to self-esteem. A number of studies have found such relationship in the context of career counselling (e.g. Creed et al., 2010; Creed et al., 2005; Kishor 1981; Korman, 1967; Wanberg & Muchinsky, 1992). Research suggests the relevance of self-esteem for general decision making (Alzate, de Heredia, Arocena, & Gárate, 2004; Wray & Stone, 2005) with lower self-esteem being associated with inhibited or more risky decision making (Commendador, 2007; Fabio, 2006).

The associations of self-esteem (and the before reviewed findings on hope) with indices of career thoughts are especially interesting when considering that hope and self-esteem were found to mediate the relationship between internalised stigma and psychopathological symptoms in the framework study (Yanos et al., 2008) and thus suggest the connectedness of the current approach to stigma.

The evidence here reviewed suggests that there is a significant association between hope/hopelessness or optimistic/pessimistic views with vocational decision making. Quite consistent is the finding that positive self-esteem relates to a better vocational decision status as well as to more positive job searching behaviour indicating the possible importance of these vocational concepts for consumer oriented recovery.

Self-direction (agency and autonomy, self-determinism and efficacy, choice of meaningful options and activities promoting recovery). Another important aspect of consumer oriented recovery is self-direction and the concept of agency. Kishor (1981) found that career indecision was significantly related to an external locus of control (suggesting a lack of perceived self-determinism) which was confirmed later by other research (Fuqua & Hartman, 1983; Johnson, 1990; Salomone, 1982; Santos, 2001; Taylor, 1982; Taylor & Popma, 1990). Using a hierarchical regression analysis Solberg, Good, Fischer, Brown, and

Nord (1995) found support for a mediating model suggesting an important role of human agency (e.g. assertiveness) and self-efficacy for employment related cognitions.

In their investigation Moorhouse and Caltabiano (2007), using the same measure as the current research, the Assertive Job-Hunting Survey (Becker, 1980), found that those unemployed persons who had a sense of agency (self-reliance, independence, determination and resilience) were more likely to be assertive in their job search. A finding that has been replicated several times regards the association of career thought indices with self-efficacy. A study by Multon, Heppner, and Lapan (1995) for example found the here used Career Decision Profile (CDP) subscale 'comfort with career decision' correlated with self-efficacy.

In summary there is evidence that suggests that self-direction indices such as locus of control are associated with vocational decidedness and that agency appears to have an influence on career decisions and job-hunting behaviour. It overall appears that these vocational constructs could be of importance for self-determinism as an aspect of consumer oriented recovery.

Empowerment (strength based promotion of potentiality, related self-awareness).

Research that explicitly assesses empowerment in the context of career decision making and job-search behaviour is somewhat limited. Nevertheless, some studies related empowerment to career decision making (Grier-Reed, Skaar, & Conkel-Ziebell, 2009a; Grier-Reed, Skaar, & Parson, 2009b). Results indicate that career interventions significantly increase empowerment and choice certainty while decreasing indecision. Grier-Reed et al. (2009a) showed that career-interventions can as well lower dysfunctional career thoughts as assessed with the Career Thoughts Inventory (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996). Overall it appears likely that a person who mastered a self-directed career choice is more likely to perceive her- or himself as empowered and vice versa.

Quality of life (well-being and meaning to life, perception of individual purpose, meanings that ascribe to their experiences such as coping, healing, wellness, and thriving). Research that directly addresses quality of life in the context of career decision making and counselling is surprisingly sparse. One exception is a recent study by Stern et al. (2010). They found quality of life significantly and inversely related to career decision making difficulties in young persons that suffered from cancer.

More extensive research supports the relationship of career thought indices to general well-being. Arnold (1989) for example, later supported by other research (Lounsbury, Tatum, Chambers, Owens, & Gibson, 1999; Spector, 1997), showed that career decidedness was significantly related to well-being. In a two year follow-up study Creed et al. (2005) found that undecided students had poorer career, well-being and social outcomes than the decided students. Some publications supported the notion that dysfunctional career decision thoughts were related to certain coping styles such as suboptimal avoidant coping (van Eecke, 2007; Sampson, Peterson, Reardon, & Lenz, 2003). Further there are studies linking dysfunctional career thoughts specifically to job-avoidance behaviour (Judge & Locke, 1993).

There is some evidence suggesting that career decision making difficulties are associated with lesser quality of life. Replicated findings exist on the association of well-being with career decidedness and dysfunctional career thoughts.

Identity (social roles and contacts, an identity beyond illness, respect and responsibility and stigma, peer support and integration). The association of career related issues with identity has a rather long history. Kelly (1955) recognised vocational development as "one of the principal means by which one's life role is given clarity and meaning" (p. 751). Galinsky and Fast (1966) suggested that identity problems could take the form of vocational indecision and could be related to clinically relevant syndromes. Holland (1959; 1973) proposed personality and identity as central for one's vocational choice.

Findings on the association of identity scales and career decision indices (Downing & Nauta, 2010; Nauta & Kahn, 2007; Scott & Ciani 2008; Vondracek, Schulenberg, Skorikov, Gillespie, & Wahlheim, 1995) and dysfunctional career thoughts (Saunders et al., 2000) have been replicated quite consistently in more recent studies.

Cohen, Chartrand and Jowdy (1995), supported by Guerra and Braungart-Rieker (1999), found evidence for the hypothesised association between career development, as understood by the developmental theory of ego identity proposed by Erikson (1968), and indecision. Guay, Senecal, Gauthier, and Fernet (2003) found support for a model in which peers as well as parental styles were associated with career indecision mediated by perceived self-efficacy and autonomy. More specifically there are a number of studies which showed that especially family support was associated with career certainty (Constantine, Wallace, & Kindaichi, 2005; Kush & Cochran, 1993; Palmer & Cochran, 1988). Among others (Downing & Nauta, 2010; Tokar, Withrow, Hall, & Moradi, 2003), Emmanuelle (2009) found that the more adolescents felt attached to their parents the easier it was for them to decide on a career path.

With respect to the quality of relationships it is noteworthy that a positive therapeutic working alliance has been associated with increased career counselling outcomes such as career decision difficulties (Carrozzoni, 2002; Massoudi, Masdonati, Clot-Siegrist, Franz, & Rossier, 2008). This is especially interesting considering that the working alliance is also one of the major effective factors in mental health related psychological interventions (Wampold 2001). Findings on stigmatisation of marginalised groups in the context of career development are rather sparse. Some publications suggested that stigmatisation negatively influenced career development in persons with disabilities (Feldman 2004) and in gay, lesbian, and bisexual individuals (Morrow, 1997).

Overall the association of different indices of identify with career related thoughts is well documented and has a considerable history. Some research suggested that social support such as peer and family support played an important role for vocational decisions. Further professional support i.e. the working alliance appears to have positive effects on career decidedness and some research tentatively suggested that stigmatisation related to vocational decisions.

Summary. The above cited literature points towards a significant relationship between indices of career related thoughts and aspects of consumer oriented recovery. Even though the concepts of dysfunctional career thoughts, undecidedness and job-hunting behaviour are commonly not assessed in rehabilitation contexts, there is evidence linking these concepts to hope and self-esteem, empowerment, self-direction, quality of life, and identity, suggesting the usefulness of these career related concepts for the process of consumer oriented recovery.

Summary of the literature review. The above literature review firstly clarifies the concepts of recovery, suggesting a complimentary rather than exclusionary understanding of two different processes originating from two different perspectives, labelled ‘remission and functioning’ and ‘consumer oriented recovery’. The qualitative study that constituted the origin of the current research interest suggested that career indecisiveness is related to significant distress in persons with mental illnesses. A closer look was taken at the study which built the methodological framework (Yanos et al., 2008) and a rationale for the model assessment conducted in this research was given. The framework study showed that stigma has a significant influence on factors related to symptom remission and consumer oriented recovery, largely mediated by hope and self-esteem. Using similar measures in the current approach gives the opportunity to view the findings in relation to other contemporary research (Yanos et al., 2008).

Since vocation related thoughts such as decidedness and functionality have not been assessed in the context of mental health as yet, findings on employment were reviewed to show the relatedness of vocational factors to both remission and functioning, and consumer oriented recovery. The literature shows that employment relates to factors such as symptom severity, diagnosis and cognitive and social functioning; suggesting a considerable influence of work on remission and functioning in mental illness. It was demonstrated that factors such as hope, empowerment, self-determinism, quality of life, and identity are related to vocational indices adding legitimacy to the assumption that employment is also relevant for consumer oriented recovery. Studies researching persons with mental disorders and factors related to career related thoughts suggested that career indecision, dysfunctional career thoughts, and job-hunting behaviour are likely important for this population.

Ultimately, research is reviewed that associates indices of remission and functioning (such as psychopathological symptoms and indices of cognitive and social functioning) with the here assessed aspects of vocational decidedness, dysfunctional career thoughts and job-hunting assertiveness in other populations. Studies from different populations also suggest that vocation related concepts are relevant to hope and self-esteem, empowerment, quality of life and identity; which reflects the here operationalized concept of consumer oriented recovery.

It seems clear that including concepts such as vocational decidedness and functionality of career thoughts in the context of mental health rehabilitation, has a strong potential to increase the benefits consumers can gain from interventions and research. This perspective has failed to be sufficiently acknowledged or addressed in research or practice. Crites (1981) suggested that career related counselling in the context of psychological interventions provided the opportunity to explore and reinforce the client's role in a main area of life, the world of work. He stressed the importance to involve “active participation in the decisional

process, not simply passive-receptive input of information" (p. 11) re-emphasising the relevance of the focus chosen by the current research.

What Gaps Exist in the Literature?

Throughout the literature review and the preceding argument of relevance of the current approach; it was shown that a major gap in the literature regarding remission and functioning, and consumer oriented recovery in mental health rehabilitation, is the absence of concepts that are used to support vocational and personal development in other areas of psychology, such as career counselling. Despite these concepts having a considerable history (Crites, 1981; Herr, 1989; Hinkelmann & Luzzo, 2007) and empirical support in other populations, they have never been quantitatively researched with regard to mental illness.

The assumption that individual characteristics mediate the influence of work on rehabilitation outcomes is not only supported by empirical research but can be theoretically derived as well. The perception that persons with a mental disorder have of their environment and their future perspective, probably influences the experienced level of stress and affective instability.

The belief in an attainable increase in day-to-day 'normality' which is implied by a self-determined vocational decision, will most likely reduce distress and encourage hope, contributing to the overall recovery process. A self-determined vocational decision may therefore contribute to a more positive sense of identity and offer a sense of meaningful agency in our society. Subsequent employment, if achieved, can provide financial stability, daily structure and give opportunity to socialise; it is of note that the perception of potentially achieving these benefits may have a positive psychological impact in itself. The perception of an achievable vocational future sets a goal one can aspire to and may be beneficial on multiple mental health related levels. Yanos et al. (2010b) ascertains that improvements in global functioning in persons with severe mental illness were associated with the recapturing

of a sense of purpose through daily activities. Additionally, the authors cite the relevance of the transformation from undervalued identities to empowered and individualised self-perceptions (from patient to person), and consequently the reclamation of oneself as an active agent. Active agency directly relates to the here researched concept of a self-determined vocational decision. The authors adduce evidence that shows links between hope and self-esteem, and identity indices. They suggest that “individuals who have given up on working as a possibility do not invest the effort in behaviour necessary for good job success” (Yanos et al., 2010b, p. 83).

As a first step, this study aims to provide some evidence on what role vocational decisions and job-search behaviour may play in the context of different indices of recovery from mental illness. Considering the varying, partially inconsistent and inapplicable (e.g. work history) findings on predictors of employment from the point of view of clinical psychology (McGurrin, 1994; Rogers, 1995) the domain of individual, person-related characteristics are due some research attention (Cox et al., 2004; Rogers, 1995; Tsang et al., 2010; Yanos et al., 2010a). Promising concepts from the career counselling context have not, surprisingly, been considered empirically in research on remission and functioning, consumer oriented recovery or in the context of vocational rehabilitation. Accordingly, there are no mental health interventions that utilise the conceptualisations of career related counselling to increase intervention outcomes in spite of theoretical work promoting this view (Blustein & Spengler, 1995). “Offering help outside of the context of the real world, where people have to work for a living, seems like trying to deal with mental illness in the abstract instead of dealing with its concrete impact on people's lives.” (Rogers, 1995, p. 5). This research argues that closing the gap of knowledge as regards the effects of basic real world questions such as “What do you want to do vocationally?” and “How can we reach that?” is long overdue in mental health rehabilitation.

How Does the Current Study Contribute to Closing the Existing Gaps? (Aims and Hypotheses)

This study sets out to test the assumptions that vocation related concepts such as career decidedness, dysfunctional career thoughts and job-search assertiveness are related to mental health; and that such factors can contribute to remission and functioning, and consumer oriented recovery.

Aims. Besides attempting to reduce the gap of knowledge regarding vocation related thoughts in mental health rehabilitation, this research hopes to raise the awareness of the potential usefulness of these constructs in this field. It is hoped that this research results in support for persons whom attend mental health services that will reduce the strain associated with severe mental disorders and subsequently enable them to achieve the occupation they seek. Assessing if a self-directed vocational decision is related to remission and recovery may provide a basis to develop specific interventions that increase the effectiveness of traditional treatments while supporting vocational empowerment of mental health consumers. It is proposed that knowledge about how people orientate themselves in the 'real' (vocational) world has the potential to support remission and functioning and the consumer oriented recovery process. Integrating such concepts into community-based support programs could add to the quality and effectiveness of these services. This may contribute to better treatment options for clients for whom treatment outcomes are typically expected to be sub-optimal (e.g. persons with no work history). To evaluate this assumption this research will test specific associations with indicators of remission and functioning and consumer oriented recovery. Additionally, it will endeavour to replicate an existing model that regards 'outcomes related to recovery'. Due to the lack of research addressing vocational thought concepts in the context of remission and functioning, and consumer oriented recovery; an alternative model will be derived from the model explicated and tested by Yanos et al. (2008)

that will incorporate these vocational concepts. In the long run, this study seeks to contribute to new approaches that increase the effectiveness of existing psychosocial interventions and accordingly strives to reduce the immense strain that individuals and society suffer from mental disorders.

Hypotheses. The basic knowledge that is needed to decide whether career decidedness and functionality of career thoughts have virtue for mental health recovery needs to be provided by empirical research. The over-arching assumption that underlies this study is that these vocational thoughts have a significant influence on factors related to remission and functioning, and to consumer oriented recovery, and that they influence proactive, assertive job-hunting behaviour. To assess the associations of the vocational decision status and dysfunctional career thoughts with factors related to remission and functioning (such as symptom severity, work status, cognitive functioning) and factors related to consumer oriented recovery (such as hope, self-esteem and a recovery measure) separate analyses will be performed.

The first set of hypotheses assumes that being more decided about vocation (higher career decision certainty and lesser dysfunctional career thoughts) is associated with higher scores on measures related to remission and functioning. In particular, that higher career choice certainty and less maladaptive career thoughts will be associated with lesser symptom severity (hypothesis A-1), better discriminative concentration ability (hypothesis A-2), better memory ability (hypothesis A-3), and better vocational functioning as represented by work status (hypothesis A-4). The second set of hypotheses relates to scores on measures related to consumer oriented recovery, specifically that higher career decision certainty and lesser dysfunctional career decision thoughts will be associated with higher scores of hope (hypothesis B-1), with higher self-esteem scores (hypothesis B-2) and with better scores on a recovery scale (hypothesis B-3). Hypothesis C will test whether higher career decision

certainty and lesser maladaptive career thoughts are associated with more proactive, assertive ways of job-hunting.

This study further sets out to replicate a model proposed by Yanos et al. (2008). The model assumes a relevant role of hope and self-esteem for outcomes related to remission and functioning, and consumer oriented recovery. This basic proposition will be tested before an attempt is made to replicate the pathways between internalized stigma and ‘outcomes related to recovery’ found by Yanos et al. (2008). Some of the measures used here differ from the ones used originally however the measures applied in this study assess the same concepts addressed by Yanos et al. (2008). It is accordingly assumed that the model proposed by Yanos et al. (2008) can be replicated despite these differences.

An alternative model is then proposed which seeks to integrate the concepts of vocational thought contents. Acceptable model fit indices would support the assumption that vocational thoughts play a meaningful role in remission and functioning and, consumer oriented recovery. Finally basic assumptions in another model proposed by Yanos et al. (2008), which explicates positive symptoms as predictor for outcomes related to remission and functioning, and consumer oriented recovery, will be tested here.

Method

The research was designed as a cross-sectional and observational study assessing vocational decision thoughts in persons with severe mental illness in the context of other psychometric factors that are relevant for remission, functioning and recovery.

Participants

Participants with severe mental disorders (schizophrenia-spectrum, schizo-affective, major depressive, and bipolar disorders) were recruited through public and non-governmental

outpatient health services in Dunedin, New Zealand (North/ South Community Mental Health teams and the Early Intervention Service of the southern District Health Board, as well as the Tapestry Clubhouse of the Schizophrenia Fellowship Otago). Potential participants were excluded if they had an intellectual or specific learning disability, a neurological disorder or history of traumatic brain injury, if they were intoxicated or experienced acute symptoms of mental illness at the time of participation or if they were not fluent speakers of English. Potential participants were approached through health professionals at the respective services.

In total 116 participants were recruited, 7 were excluded because they met one or more exclusion criteria. The final sample consisted of 109 participants. 67 were recruited through the Community Mental Health teams, 36 participants were recruited through the Tapestry Clubhouse and 5 persons were recruited through the Early Intervention Service. The average age of the participants was 42.1 years ($SD = 12.04$, range: 18.3-78.6); 53 were female and 56 were male (of which one identified as male and transgender). Most participants ($n = 95$) were born in New Zealand, 5 were born in England, 2 each were born in Australia, Wales and Scotland, and 1 each was born in Samoa, the Netherlands and Brazil. In terms of ethnicity 95 persons identified as New Zealand European, 7 as Maori and 2 as Maori/New Zealand European, 1 each identified as Samoan, as British, Welsh, Indian, and as Latin American.

Table 1 shows secondary school qualification. Of the 109 participants 35 had no secondary school degree and 4 had an overseas school education. 33 people indicated that they had some form of tertiary qualification (Polytechnic or University). The average time spent in formal education was 12.27 years ($SD 2.53$, Range 8 -24).

Table 1

<i>Secondary School Education</i>	
School degree	N
NZ School Cert. Lvl. 1	19
National Cert. Lvl. 1	7
NZ Sixth form Cert.	10
NZ Higher School Cert. / National Cert. Lvl. 2	6
NZ University Entry	11
NZ Higher Leaving Cert. / National Cert. Lvl. 3	2
NZ A or B Bursary / Scholar-ship	6
NCEA -3	1

Note. Cert. = Certificate, Lvl. = Level, NZ = New Zealand.

Regarding employment outcomes, even when including voluntary and supported work, considerably more people than not were unemployed (72 unemployed, 37 employed). The average time working in the current job (any work) was 44.08 months ($n = 37$) but varied greatly ($SD = 39.23$). Of the 37 participants who indicated current working activities, 26 had some kind of competitive employment (defined as paid, self-employment or both). The remainder ($n = 83$) were not in employment. Of the 37 vocationally active persons 11 had currently only voluntary or supported employment. Of the 109 participants, 13 had never worked competitively and 2 had never worked in any capacity. The mean total employment duration for those with work experience ($n = 107$) was 12.93 years ($SD = 11.36$).

Even though about 24% of persons reported some form of competitive employment, social welfare was a predominant feature; only 6 persons (5%) were not accessing financial government support through welfare benefits or pensions. Of those receiving government support 67 persons received invalids benefits, 18 sickness benefits, 8 disability benefits, 7 unemployment benefits, 1 superannuate (retirement) benefits, 1 domestic purpose benefits, and 1 student benefits. Seven of the 103 participants receiving financial support indicated that they received support from two different kinds of benefits.

Table 2

Distribution of Diagnoses (ICD-10) in the Sample

	Schizophrenia Spectrum Disorder		Major Depressive Disorder	Bipolar Disorder	Schizo- Affective Disorder	
Primary diagnosis	48		31	21	9	
	F10.0- F19.9	F20.0- F29.9	F30.0- F39.9	F40.0- F49.9	F60.0- F69.9	F90.0- F99.9
Secondary diagnoses (N=35)	5	5	4	14	6	1
Tertiary diagnoses (N=9)	3	--	--	1	5	--

Diagnostic information was obtained from psychiatric records after obtaining written consent for access, to ensure that the participants belonged to the intended diagnostic population. Table 2 presents the information on the primary diagnosis, according to the International Classification of Diseases (ICD-10, World Health Organisation, 1993).

Table 3 notes data regarding further illness related information. It displays mean duration of illness, years since first hospitalisation, and a count of the number of psychopharmacological medication prescribed for the participants. It further shows the specific types of medication, their frequency and mean fraction of the maximum dose (maximum dose = 1) recommended by the Monthly Index of Medical Specialities (MIMS, 2009). Compliance, however, was not assessed (see appendix for further distribution information). Additionally, it was noted if the psychopharmacological regimen had changed in the last two months before testing, 27 persons had had some kind of change in the prescription.

Table 3

Other Illness Related Information

	Illness history in years		Number psycho-pharmacological medications prescribed				Type of medication ^a							
	First diagnosed (Illness duration)	Years since first hospitalisation	None	One	Two	≥Three	SSRI	Tricyclic antidepress.	Atypical antipsy.	Typical antipsy.	Anxiolytic med.	Lithium	Anti-convulsant med.	MAOI
N	109	97	6	35	30	38	34	10	78(14)	19(2)	27(2)	6	20(1)	4
M	18.2	17.5	--	--	--	--	0.59	0.62	0.53	0.54	0.52	0.48	0.39	0.44
SD	10.8	10.9	--	--	--	--	0.35	0.39	0.43	0.39	0.53	0.36	0.21	0.24
Range	0.5 – 50.6	0.3 – 47.8	--	--	--	--	0.17-1.20	0.17-1.20	0.03-1.50	0.04-1.33	0.03-2.00	0.08-1.00	0.13-0.75	0.25-0.75

Note. Antidep. = Antidepressant, Antipsy. = Antipsychotic, MAOI = Monoamine Oxidase Inhibitor, Med. = Medication, SSRI = Selective Serotonin Reuptake Inhibitor.

M(SD) of number of psychopharmacological medication overall = 2.01(1.09).

^a for Type of Medication: N = Number of that medication prescribed in sample, Type of medication *M*, *SD*, Range = Mean, Standard Deviation, Range of fraction of recommended maximum dose (MIMS, 2009), maximum dose = 1, numbers higher than one indicate dosages exceeding recommended maximum dose (MIMS, 2009). This may occur when two different medications of the same type are prescribed. In some cases the recommended maximum dose was exceeded. Mean(*SD*) of fraction of maximum dose overall = 0.53(0.40).

Table 4

Psychosocial Treatment

Referred service	Outpatient Community Mental Health Team	Tapestry Club- house	Community Day Programs	Early Intervention Services	Kaupapa Maori Mental Health	Emergency Psychiatric Services	Psychiatric Hospital	Forensic team
Persons currently attending psychosocial service	92	39	6	5	1			
Persons who attended psychosocial service during last 6 months	100	39	18	5	2	26	15	1
<i>M</i> time registered with the psychosocial service in months	82.4	68.68	2.20	19.27		--	1.21	
<i>SD</i> of time registered with the psychosocial service in months	73.2	48.41	1.38	8.71		--	1.33	

Note. Time registered with psychosocial service is assessed from the time the participant was referred to the service to either the testing date or to the date of discharge.

Finally Table 4 shows information on the referral to psychosocial services obtained from the psychiatric records as well as psychosocial services the participant was currently registered with and services registered with during the six months preceding the testing. If the records indicated that participants were registered with a psychosocial service during the past six months, information on how long the person was registered with the service was obtained. Standard deviation and mean of time spent at the Kaupapa Maori Mental Health Team and the Forensic Team were omitted, because too few participants attended the services to make any meaningful indications. Further the Emergency Psychiatric Services are not attended for time periods but are frequented selectively. Information on actual attendance or eventual involvement with drop-in centres or similar services could not be obtained through the records.

Assessment

Procedure. The investigator administered the measures used in a single one-on-one assessment session with the participant at the premises of the service through which the participant was recruited. The assessment sessions required between 60 and 100 minutes with an option for a 10-minute break. After obtaining informed consent, the investigator introduced the components of the procedure to the participants according to a written protocol (see appendix). The Career Decision Profile, Career Thoughts Inventory, and Beck Hopelessness Scale were administered as interviews. The pen and paper self-report measures were alternated with interview measures to minimize monotony in the procedure. To ensure understanding, the participants received copies of the measures administered as interviews.

Measures. *Predictor variables.* The key predictor variables were the Career Decision Profile Decidedness and Comfort Scores (Jones, 1989) and the Career Thoughts Inventory Total Score (Sampson, Peterson, Lenz, Reardon, & Saunders, 1999) for hypotheses

A-1 to A-4, B-1 to B-3, and C. The assumption that this study set out to test is that more functional and more certain vocational thoughts influence factors associated with indicators of remission and functioning (experienced symptom severity, indices of cognitive and day to day functioning) and that these career thoughts influence factors related to consumer oriented recovery (hope and self-esteem, measure of recovery). Further it sought to test if higher certainty and lesser dysfunctionality relates to more assertiveness in the job-hunting process.

For assessing the described models (Figure 3, Figure 5, Figure 6, and Figure 7) additional predictive variables were used. Hypotheses B-2 and B-3 considered hope and self-esteem as predicted variables, while base Model 1 (Figure 5) treats them as exogenous variables. Internalised stigma (ISMIS-Total Score, Ritsher et al., 2003) and stigma perception (SCQ-Total Score, Pinel, 1999) were considered to be relevant predictors (Model 1a, Figure 3) associated with “outcomes related to recovery” (Yanos et al., 2008, p. 1437). The alternative model (Model 1b, Figure 6) used career decidedness and dysfunctionality of career thoughts as exogenous variables for ‘outcomes related to recovery’.

The Career Decision Profile (CDP, Jones, 1989) was developed from a three-dimensional model of career decision to assess the individual decisional status. It distinguishes from other career decision measures (e.g. Career Decision Scale; Osipow, Carney, Winer, Yanico, & Koschier, 1987) by emphasising a differentiation between the decision status, the comfort with the status, and possible reasons (Jones & Lohman, 1998). On the basis of this approach six dimensions (Decidedness, Comfort, Self-clarity, Knowledge about Occupations and Training, Decisiveness, Career Choice Importance) represent the individual’s decision status, which was assessed orally through 16-items on a one to eight scale (1 = strongly agree, 8 = strongly disagree). The three-week test-retest reliability of this measure was found to range from .59 to .84. (Jones, 1989; Brisbin & Savickas, 1994). A study in New Zealand (Tuck, Rolfe, & Adair, 1995) replicated the reliability scores of the

Decidedness and Decisiveness scales and the correlations with the scales of the original study (Jones, 1989). The validity of the CDP as a measure of a person's career decision status is demonstrated by correlations with other measures of career indecision as well as by its associations with constructs related to career decision such as anxiety, identity, career salience and self-efficiency (Holland & Holland, 1977; Jones & Lohman, 1998; Wanberg & Muchinsky, 1992). Low inter-correlations (.22 or less; one scale .41) of the scales suggest diagnostic and divergent validity (Jones & Lohman, 1998). The multidimensional approach, which supports a more precise 'diagnosis' than one-dimensional earlier measures of the career decision status and the causes of career indecision (Osipow, 1999), in conjunction with its test-qualities promotes the use of the CDP in this study. The CDP has not been used in a population of persons who suffer from a severe mental illness before. That there are no measures that assess vocation related decisions in persons with mental illness shows the lack of such concepts in this field; despite the fact that career indecision is among the most important constructs in the field of vocational psychology and has received much theoretical and empirical attention (Kleiman et al., 2004). The formerly conducted qualitative research in Germany (Dolberg, 2009) showed that vocational indecision is a source of discomfort and concern for persons suffering from mental illness, which makes the CDP, in spite of the limitation that it has only been used in other populations, one of the cardinal sources of data in this study.

The Career Thoughts Inventory (CTI, Sampson et al., 1996) is a theory-based assessment tool to identify dysfunctional career beliefs and thoughts. It was derived by referring to the theory of cognitive information processing (Peterson et al., 1991) and the cognitive behavioural concept of dysfunctional beliefs (e.g. Beck, 1976). It consists of a total score and three construct scales (decision-making confusion, commitment anxiety, and external conflict) derived from 48 items. The CTI, as the CDP, was administered orally with

responses ranging from one (strongly disagree) to four (strongly agree). The three construct scales show good reliability values (α -coefficients = .74 to .93), as does the overall score of the CTI (α = .93 to .97). Four-week test-retest stability coefficients (total score = .69 to .86; construct scales .52 to .82) support the adequate quality of this psychometric measure (Sampson, Peterson, Lenz, Reardon, & Saunders, 1998). Content-validity is provided by the direct link of individual items and construct scales to the underlying theory (Cognitive Information Processing and Cognitive Therapy) through content dimensions. Consistent with its theoretical approach, Sampson et al. (1998) show convergent validity of the CTI scales through inverse correlation with positive constructs such as vocational identity, certainty and knowledge about occupations and training, and direct correlation with indecision, neuroticism and vulnerability. The CTI as a theory-driven measurement is a suitable instrument to gain access to information which is related to the procedural character of vocational decision making. The CTI provides additional information on vocational decision making and internal, vocation related, dysfunctional convictions.

The Internalized Stigma of Mental Illness Scale (ISMIS, Ritscher et al., 2003) is a 29-item questionnaire developed to assess the subjective experience of stigma as it refers to substantial consumer input. Internalized stigma is understood as the psychological impact point of the harm causing stigmatisation of persons with mental illness. Internalised stigma is assessed through five constructs (Alienation, Stereotype Endorsement, Discrimination Experience, Social Withdrawal, and Stigma Resistance) and a total score. Responses range from one (strongly disagree) to four (strongly agree). The ISMIS shows good test reliability values (internal consistency coefficient α = .90, test-retest reliability = .92). The internal consistency of the subscales ranges from .58 to .80 and the sub-scales test-retest reliability from .68 to .94 (Ritscher et al., 2003). The ISMIS is, with regard to convergent validity, positively associated with the Devaluation-Discrimination Scale and with the Center for

Epidemiological Studies Depression Scale (Ritscher & Phelan, 2004). Inverse correlations were found to the Rosenberg-Self-Esteem Scale, the Personal Empowerment Scale and the Recovery Assessment Scale (Ritscher & Phelan, 2004; Ritscher et al., 2003). The use of the ISMIS in the current study is founded on the use of this measure in the study of Yanos et al. (2008). Further stigmatising convictions once internalized can be understood as dysfunctional belief also making the ISMIS a valuable tool in the context of assessing vocational decisions and dysfunctional career thoughts in persons with serious mental disorders.

The Stigma Consciousness Questionnaire (SCQ, Pinel, 1999) is a 10-item self-report measure of the extent to which members of minority populations perceive their group to be stigmatized. The SCQ shows good internal consistencies ($\alpha = 0.64$ to 0.84). Principal axis factor analysis supports a single factor model for stigma consciousness (Pinel, 1999). In the initial validation publication the SCQ was used with differing populations emphasising the adaptability of the measure (Pinel, 1999). Accordingly, for this study the SCQ was, referring to a similarly adjusted version (Alder, 2012), adapted for persons with mental disorders (see appendix for the adapted version). Each item consists of a statement such as “I would never worry that my behaviours will be viewed as stereotypical of my mental illness”, that participants rate using a 7-point Likert-type agreement scale (0 = strongly disagree and 6 = strongly agree). The SCQ provides an overall score from 0 to 60 with higher scores indicating greater stigma consciousness.

Predicted Variables. Hypotheses A-1 to A-4 consider factors associated with remission and functioning, namely symptom severity and indicators of day to day functioning (cognitive functioning such as attention and memory and vocational status), as predicted variables. Hypotheses B-1 to B-3 consider factors associated with consumer oriented recovery, namely hope, self-esteem, and a measure of overall recovery, as predicted variables. Hypothesis C regards the assertiveness of job-hunting behaviour as outcome. The first model

assesses whether the suggested role of hope and self-esteem for outcomes related to recovery as suggested by Yanos et al (2008, 2010b) receives support in the current sample. For this Hope and self-esteem will be treated as predictor (exogenous) variable. The stigma related model tested by Yanos et al. (2008) regarded hope and self-esteem, depressive symptoms, positive symptoms, interpersonal avoidance and avoidance tendency as predicted (endogenous) variables. In the second model proposed by Yanos et al. (2008) positive symptoms (here SCL-90 Psychoticism) are considered as a predictor (exogenous) variables.

The Symptom Check List-90-Revised (SCL-90-R, Derogatis, 1994) is a widely used multidimensional inventory. It consists of 90 items (Derogatis & Savitz, 2000), derived from the Hopkins Symptom Checklist. As its predecessor the current version consists of three global indices (Global Severity Index, Positive Symptom Distress Index, Positive Symptom Total) and nine primary symptom dimensions (Somatisation, Obsessive-Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, Psychoticism). These indices measure psychological symptoms and related distress. The SCL-90-R shows good internal consistency ($\alpha = .77$ to $.90$; Derogatis, Rickels, & Roch, 1976) and 10-week test-retest reliability (.68 to .80; Derogatis, 2000). The SCL-90-R has been used successfully in differing populations. In samples with persons suffering from severe mental illness it is commonly used to assess symptom severity (Fowler, Carr, Carter, & Lewin, 1998). Evidence for concurrent validity is provided by correlations with the Minnesota Multiphasic Personality Inventory (Derogatis et al., 1976; Brophy, Norvell, & Kiluk, 1988) showing that the nine symptom dimensions correlated highly with similar score constructs. This was supported with specific regard to the depression and anxiety sub-scales (Koeter, 1992; Morgan, Wiederman, & Magnus, 1998). The SCL-90-R can further distinguish between patients and other community members (Bonicatto, Dew, Soria, & Seghezze, 1997; Holi, Sammallahti, & Aalberg, 1998) and between different diagnostic groups (Rief &

Fichter, 1992). A recent study (Paap et al., 2011) confirmed the multidimensionality of the SCL-90-R in a large sample of persons with severe mental disorders, suggesting the validity for its use in this population in spite of earlier mixed findings on the factor structure (Clark & Friedman, 1983; Cyr, McKenna-Foley, & Peacock, 1985, Derogatis, 2000). The decision to use this assessment tool was based on the clear evidence for its precise assessment of general psychological distress (Müller, Postert, Beyer, Furniss, & Achtergarde, 2010) and on the successful application in samples with schizophrenia and other severe mental disorders (Fowler et al., 1998; Paap et al., 2011).

Cognitive Functioning was assessed partially on the basis of the aforementioned finding of a recent study that three orthogonally derived cognitive factors (working memory, attention and early perceptual processing, and verbal memory and processing speed) accounted for 52% of the vocational outcomes (Nuechterlein et al., 2011). Subtests of the MATRICS Consensus Cognitive Battery (Nuechterlein & Green, 2006) were selected to represent indices of working memory and attention.

The WMS-III Spatial Span Test is a subtest of the widely used Wechsler Memory Scale-III (WMS-III; Wechsler, 1997) which assesses learning and memory functions in adolescents and adults. The Spatial Span subtest is designed to measure working memory similar to the Digit Span subtest, but nonverbally. It consists of two tasks in which the administrator taps differently sized cubes on a board in a specified order. The respondent is then asked to repeat the sequence, either in the same order or reversed. The WMS-III technical manual (Wechsler, 1997) states that the Spatial Span test is a visual analogue to the Digit Span test and that it assesses the respondent's ability to hold a visual spatial sequence in working memory. Internal consistency, generalizability coefficient and test-retest have been reported as adequate (.70 to .79) for the Spatial Span subtest (Strauss, Sherman, & Spreen, 2006). A modelling approach using structural equations and confirmatory factor analysis to

ascertain the factor structure of WMS-III and the Wechsler Adult Intelligence Scale III (Wechsler, 1997) yielded a six-factor solution, and showed that the Spatial Span subtest loads most highly on the working memory factor (Tulsky & Price, 2003). Accordingly the Spatial Span subtest is considered to provide adequate information as a non-verbal indicator of memory functions.

The Continuous Performance Test – Identical Pairs (CPT-IP, Cornblatt, Risch, Faris, Friedman, & Erlenmeyer-Kimling, 1988) is a computerised assessment of focused and sustained attention. Multiple digits appear on the computer screen and the subject's task is to respond as fast as possible by pressing a button whenever two identical stimuli are presented in a row. The version administered in this study used four digits which appear in a 950 ms interval for 50 ms on a computer screen. Target trials are those where the second of a pair of two identical stimuli appear (correct detections or hits). The task also includes a number of catch trials on which the stimulus presented is very similar but not identical to that of the preceding trial. Responses to catch trials are considered as a specific type of commission error. Commonly 20% of the stimuli are target, exactly alike pairs (require response); 20% are catch trials, pairs that are almost but not exactly identical and 60% are random fillers. The results measure correct and incorrect responses, commission errors and reaction times. Main indices of the CPT are d' (indicating the ability to discriminate a signal or stimulus from background/noise) and β (indicating the tendency to over or under respond). Alpha coefficients for the CPT-IP ranged from .69 to .89 (Erlenmeyer-Kimling & Cornblatt, 1992). The test-retest stability was evaluated over 1.5 years for 120 normal subjects (Cornblatt et al., 1988). Test-retest indices values for the attention indices ranged from .39 to .73. The CPT-IP appears to be psychometrically sound and capable of detecting an attentional trait that is stable over extended time intervals (Cornblatt & Kellp, 1994).

Vocational outcomes (employment status, time) were assessed through a self-report demographic questionnaire. Participants responded to items regarding employment status (e.g. 'Are you currently employed?' 'Do you have other former work experience?') with 'Yes' or 'No'. Further respondents were asked to indicate the type of employment such as competitive (paid employee/self-employed) or non-competitive work (voluntary work/working with support program). Questions about how long participants have been working in the current job how many years of former work experience they had assessed tenure. Self-reported former work experience may be subject to memory bias and social desirability bias, it was, however, the only available option to assess work history. Work history is not regarded as a predicted variable in the hypotheses but is considered in the context of a bivariate analysis.

The Beck Hopelessness Scale assessed hope (BHS, Beck & Steer, 1988) as part of the construct of consumer oriented recovery. The BHS is a 20-item true/false measurement, developed to measure negative attitudes about the future, which is considered one of the core characteristics of depression. This widely used measure of negative attitudes is conceptually based in social psychology and has a broad evidence base (Dyce, 1996). The adequate quality criteria of the BHS (internal consistency = .82 to .93; Beck & Steer, 1988; Dyce, 1996; Six-week test-retest reliability = .66; Beck & Steer, 1988) justify its regular use in research. Concurrent validity has been reported in the original study (Beck & Steer, 1988). Moreover, hope has been proposed as one of the defining criteria of consumer oriented recovery (Noordsy et al., 2002; Onken et al., 2007; Stickley & Wright, 2011; SAMHSA, 2004), which makes it a valuable source of information in studies regarding this concept. The proposed positive association with self-esteem receives support from multiple studies (Foote, Piazza, Holcombe, Paul, & Daffin, 1990; Yanos et al., 2008).

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a widely used instrument to measure self-esteem. There is support for the validity of this instrument from 53 countries assessing as many as 16,998 persons (Schmitt & Allik, 2005). The RSES was constructed as 10-Item Guttman Scale to measure uni-dimensional global self-esteem. Additional evidence for its convergent validity comes from numerous sources. The RSES is correlated with personality traits such as neuroticism and extraversion (Costa, McCrae, & Dye, 1991), with depression (Aluja, Rolland, Garcia, & Rossier, 2007), and with other measures of self-esteem (Crandal, 1973). Reliability scores range from .73 to .90 (Schmitt & Allik, 2005). In populations with severe mental illness, the RSES shows internal consistencies of .82 (Arns & Linney, 1993) and .87 (Van Dongen, 1996). Two-week test-retest reliability of .85 has been reported in college populations (Silber & Tippet, 1965).

The Recovery Assessment Scale (RAS; Giffort, Schmook, Woody, Vollendorf, & Gervain, 1995) was originally developed as a 41-item psychometric measurement of the construct here referred to as consumer oriented recovery. It was developed through participatory action research with four (later reviewing with 12) persons with severe mental illness. Internal consistency was reported at .93 and test-retest reliability at .88 (Corrigan, Giffort, Rashid, Leary, & Okeke, 1999). A number of studies have since used this measure to assess indices of consumer oriented recovery in mental health (Barbic, Krupa, & Armstrong, 2009; Chiba, Miyamoto, & Kawakami, 2010; Hendryx, Green, & Perrin 2009; Lloyd, King, McCarthy, & Scanlan, 2007; Mueser et al., 2006). A comparison of 33 recovery measures conducted by Burgess, Pirkis, Coombs, and Rosen (2011) found the RAS to be one of four measures that can be considered for routine use. Using the RAS Corrigan, Salzer, Ralph, Sangster, and Keck (2004) conducted a factor analysis revealing 5 factors (personal confidence and hope, willingness to ask for help, goal and success oriented, positive reliance on others, and not dominated by symptoms) loading on 24-items. These factors are

comparable to other findings of components of consumer-oriented recovery (Spaniol, Wewiorski, Gagne, & Anthony, 2002; Young & Ensing, 1999). The validity of the shortened 24-item version has gained support through a study using a sample of persons who suffered from a psychotic disorder (McNaught, Caputi, Oades, & Deane, 2007). Convergent validity is provided by correlations to the Empowerment Scale (Rogers, Chamberlin, Ellison, & Crean, 1997b) and other measures such as the Rosenberg-Self-Esteem Scale, the Brief Psychiatric Rating Scale, the Social Support Questionnaire and the subjective component of the Quality of Life Interview (Mueser et al., 2006). Further a study by Lloyd, King, and Moore (2009) showed that the RAS scores had not only significant relations to diagnosis, but also to work status which supports the use of the scale in this study.

The Assertive Job-hunting Scale (AJHS; Becker, 1980) was designed to assess the extent to which respondents will demonstrate assertive behaviour to gain employment and is considered as predictor variable in hypothesis C. The degree of acting assertive on the environment in the job search process (e.g. establishing contact, insistent inquires, applying without knowing about an opening) is captured by 25 items on a one to six Likert-like scale. The items were derived from the job-hunting literature and have been evaluated on students (Fischer & Corcoran, 2007). The AJHS has a good internal consistency ($\alpha = .75$ to $.82$; Becker, 1980; Schmit, Amel, & Ryan, 1993) and showed adequate stability (.77) over a two month period. Concurrent validity was shown by demonstrating significant correlations of the AJHS with job-hunting experience and through pre-post-test sensitivity (Fischer & Corcoran, 2007). Even though the AJHS was validated on college students, Schmit et al. (1993) found, whilst studying job-search behaviour in minimally educated workers, that the AJHS construct validity was sustained in other populations and that it was significantly related to subjective and objective job acquisition criteria. On the basis of the mixed and partially contradicting findings on predictors of vocational outcome in persons with mental

disorders this measure may give valuable information on predictors of general vocation related engagement. The AJHS may therefore provide new information on possible variables of vocational recovery in mental illness.

Psychometric questions. There are a number of psychometric questions associated with applying measures in populations in which they have not been validated. These concern the vocation related measures, namely the CDP, CTI and AJHS. Especially the absence of test criteria such as reliability and validity of these measures in populations with mental health problems can reduce the generalizability and meaningfulness of the results.

Validity in this context provides a particular challenge since these concepts have not yet been assessed (neither with the here applied nor with other scales) in samples with mental disorders, reducing the possibility for convergent validity assessments of these scales in this specific population. However the mentioned results regarding the validity of the here applied measures (CDP, CTI, AJHS) in more general populations (e.g. Jones, 1998; Sampson et al., 1998, Schmit, Amel, & Ryan, 1993) support the use of these measures. To provide some evidence for reliability, internal consistency is reported (Table 5) for the measures that have not been applied in populations with mentally ill people.

Table 5

Internal Consistency of Relevant Career Related Variables

Measure	Cronbach's alpha
Career-Decidedness (CDP-Decidedness)	.84
Decision Comfort (CDP-Comfort)	.58
Avoidance Tendency (CDP-Decisiveness/-1)	.82
Dysfunctional Career Thoughts (CTI-Total)	.91
Assertive Job Hunting (AJHS)	.76
Stigma Consciousness Questionnaire (SCQ for Mental Illness)	.79

Note. AJHS = Assertive Job-Hunting Scale, CDP = Career Decision Scale, CTI = Career Thoughts Inventory.

The CDP-Comfort scale shows a dissatisfactory and, compared to the other career related scales, the lowest internal consistency score (CDP-Self Clarity $\alpha = .82$, CDP-Knowledge of Occupations $\alpha = .72$, CDP-Choice Importance $\alpha = .71$, CTI-Decision Making Confusion $\alpha = .86$, CTI-Commitment Anxiety $\alpha = .75$, CTI-External Conflict $\alpha = .69$). All other relevant measures (Table 5) show a satisfactory internal consistency of $>.70$ (Nunnally & Bernstein, 1994). Due to the conceptual likeness of the CDP-Comfort and the CDP-Decidedness scale internal consistency was calculated for a combined scale, which would as well increase power for the path analyses (Yanos et al., 2008). There are some findings that suggest problems related to negatively phrased items (Schmitt & Stults 1985; Cordery & Sevastos, 1993). If the only negatively worded item (item 4) is omitted, the scale (CDP-Decision Status, items 1-3) demonstrates the highest internal consistency (Table 6). Thus this study uses the most consistent scale for assessing career choice certainty (CDP-Certainty, items 1-3) subsequently.

Table 6

Descriptive Statistics and Internal Consistency of Career Decision Certainty Scales

Measure	Mean	SD	Range	Cronbach's alpha	Shapiro- Wilkinson	Skew	Kurtosis
CDP-Certainty (items 1-4)	18.15	5.74	4-24	.82	.983	.228	-.571
CDP-Certainty (items 1-3)	13.95	4.55	6-32	.87	.982	.092	-.714

Note. CDP = Career Decision Profile

Statistical analyses. The questionnaires' outputs were calculated with the objective procedures adequate for the questionnaires in use. The resulting scores of the tests were entered into the Statistical Package for the Social Sciences (SPSS 19). Before inferential analyses are conducted, descriptive statistics (mean, standard deviation, range, normality, skew, kurtosis) for the predictor and predicted variables are presented. A question relating to psychometric qualities relates to the transformation of hope and self-esteem into one scale as suggested by Yanos et al. (2008). The authors state that combining scales (as done here with the CDP-Decidedness and Comfort scales) minimizes the number of variables entered into a model and thus maximises power. This can be done if the scales are conceptually linked and do correlate sufficiently (Yanos et al., 2008). Hope (reversed Beck Hopelessness Scale) and self-esteem (RSES) correlate in the current sample significantly ($r = .68, p < .001$). Since the correlation found by Yanos et al. (2008) is similar ($r = .63$) the RSES and BHS are transformed into z-scores and combined into one scale ('Hope and Self-esteem'). This scale has a satisfactory internal consistency ($\alpha = .89$) and appears normally distributed (Shapiro Wilkison = .982, Skew = -.271, Kurtosis = -.683).

Analysing each outcome in hypotheses A and hypotheses B separately, provides a differential picture of the possible merit of the concept of vocational thoughts (vocational decidedness and dysfunctional career thoughts) for factors related to remission and recovery. Linear multiple regression tests the assumptions of hypotheses (A-1 to A-3), hypotheses B, and hypothesis C, and a binominal logistic regression tests the assumption of hypothesis A-4.

It may be useful to remember that predictor variables in a multiple regression do not imply a cause and effect relationship of the predictor variable to the predicted variable (cross-sectional research design). It rather indicates that, when given certain (predictor) variables of the present sample, one can likely calculate (predict) within a certain error range the score on

the predicted variable. It would, for example, be unreasonable to assume that career decision certainty *causes* concentration ability.

It is further ascertained whether the model of ‘outcomes related to recovery’ proposed by Yanos et al. (2008) fits the current observed data through path analysis conducted with SPSS 19-Amos 20.0. Model 1 (Figure 5) provides the framework for the assumption that hope and self-esteem do play a major role for ‘outcomes related to recovery’ as identified by Yanos et al (2008). Subsequently, if findings regarding the role of hope and self-esteem in the current sample seem promising, it will be tested whether this study can replicate the first model (Model 1a) suggested by Yanos et al. (2008), treating stigma indices as predictor variables for hope and self-esteem (Figure 3). If model fit indicates that this model can be improved, an alternative model will be tested attempting to use career thought indices as predictor variables for hope and self-esteem (Figure 6). Finally it will be ascertained whether the basis for the second model proposed by Yanos et al. (2008), where positive symptoms are used as predicting variable is more, similarly or less promising.

The measures used in this research partially differ from the ones used in the Yanos et al. (2008) study. These are briefly described and a short statement is given why these measures were altered. Yanos et al. (2008) conducted the assessment of awareness (Scale for Assessing Unawareness of Mental Disorder; Amador, Strauss, Yale & Gorman., 1991) with a different measure than previously (Lysaker, Roe, & Yanos, 2007) which resulted in mostly insignificant findings in the model. Accordingly, this study used a measure that addressed the previously found association of awareness with stigma more explicitly, the Stigma Consciousness Questionnaire (Pinel, 1999). Further the Ways of Coping Questionnaire (Folkman & Lazarus, 1988) used by Yanos et al. (2008) is a rather extensive assessment tool that repeatedly showed difficulties with test quality criteria (Parker & Endler, 1992; Scherer & Brodzinski, 1990; Schwarzer & Schwarzer, 1996). Additionally, only the subscales

Ignoring and Resigning, understood as representing avoidant coping, have been included in the model of Yanos et al. (2008) and produced mostly insignificant associations. To reassemble the concept of Resigning and Ignoring (avoidant coping), this study uses scores of a scale that is conceptually associated with these concepts. It consists of items such as “I feel relieved if someone else makes a decision for me” or “I am an indecisive person, I delay deciding and have difficulty making up my mind”. The scale including these items (labelled ‘decisiveness’) was accordingly inversed and used to represent the avoidance variable as constructed by Yanos et al. (2008). Additionally there is some evidence that decisiveness is directly and negatively related to avoidant coping (Kosic, 2004; Onwumere et al., 2010). Yanos et al. (2008) further used the Positive and Negative Symptom Scale (PANSS; Kay, Fiszbein, & Opler, 1987) to assess social avoidance, depression (reflected by two single items) and positive symptoms (component scale). The current study uses the SCL-90-R (Derogatis, 1994). It provides nine subscales for different psychopathological symptoms and a global measure of psychopathological distress. It is accordingly more suitable for assessment of symptoms in the current, diagnostically broader population. Therefore the variable positive symptoms will be represented by the SCL-90-R scale Psychoticism (e.g. distressed by “the idea that someone else can control your thoughts”, “hearing voices that other people do not hear”), instead of the depression item the SCL-90-R scale Depression (e.g. “feeling low in energy or slowed down”, “feeling everything is an effort”) will be used and this study will assess social avoidance with the SCL-90-R scale Interpersonal Sensitivity (e.g. “your feelings being easily hurt”, “feeling inferior to others”, “feeling that people are unfriendly or dislike you”). Some evidence regarding the SCL-Interpersonal Sensitivity scale shows the usefulness of this scale for the assessment of social avoidance tendencies (Derogatis, 1994; Lincoln et al., 2003; Rakowska, 2011).

Results

Descriptive Analyses

Predictor variables. There was no missing data on the predicted variables. Table 7 shows the mean, standard deviation, range, distribution normality, skewness and kurtosis for the predictor variables. With the exception of the CDP Comfort Scale, variables appeared normally distributed. The CPD Comfort Scale data were skewed to the right.

Predicted variables. Data were missing for two participants on the CPT-IP. There were no other missing data. Table 8 shows the descriptive statistics for the predicted variables.

Table 7

Descriptive Analyses of the Predictor Variables

Measure	<i>M</i>	<i>SD</i>	Range	Shapiro-Wilkinson	Skew	Kurtosis
Career-Decidedness(CDP-Decidedness	9.54	3.01	3 – 16	.980	-.02	-.63
Decision Comfort (CDP-Comfort)	8.61	3.24	3 – 16	.966*	.29	-.75
Dysfunctional Career Thoughts (CTI)	106.17	20.54	54 – 156	.993	.06	-.28
Internalised Stigma (ISMIS)	2.19	0.52	1 – 3.69	.987	.38	.29
Stigma Consciousness (SCQ)	3.35	1.08	1.1 – 6	.982	.12	-.03

Note. CDP = Career Decision Scale, CTI = Career Thoughts Inventory Total Score, ISMIS = Internalised Stigma of Mental Illness Scale, SCQ = Stigma Consciousness Questionnaire.

* = $p < 0.05$.

Table 8

Descriptive Analyses of the Predicted Variables

Measure	<i>M</i>	<i>SD</i>	Range	Shapiro-Wilkinson	Skew	Kurtosis
Symptom Severity (SCL-GSI)	1.10	0.61	0.09 – 2.61	.957*	0.49	-0.68
Interpersonal Avoidance (SCL-IS)	1.23	0.79	0.01 – 3.34	.954*	0.55	-0.50
Depressive Symptoms (SCL-DEP)	1.32	0.79	0.01 – 3.08	.961*	0.27	-0.97
Positive Symptoms (SCL-PSYCH)	0.97	0.75	0.01 – 3.11	.932*	0.68	-0.38
Memory (WMS-Spatial Span)	13.87	3.47	5 – 23	.987	-0.20	0
Concentration (CPT-IP d')	1.50	0.97	-0.43 – 4.82	.976	0.61	0.76
Work Experience (Years)	13.94	12.67	0 – 60	.876*	1.31	1.60
Self-Esteem (RSES)	16.90	6.28	4 – 30	.985	0.04	-0.60
Hopelessness (BHS)	7.50	4.27	1 – 20	.937*	0.66	-0.38
Recovery (RAS-41 Total) ^a	157	23.34	56 – 199	.943*	-1.11	2.65
Avoidance Tendency (CDP-Decisiveness/-1)	13.51	6	-24 – -3	.962*	0	-1.03
Assertive Job Hunting (AJHS)	85.49	16.67	43 – 135	.987	0.19	0.50

Note. AJHS = Assertive Job-Hunting Scale, BHS = Beck Hopelessness Scale, CDP = Career Decision Scale, CPT-IP = Continued Performance Test-Identical Pairs, RAS = Recovery Assessment Scale, RSES = Rosenberg Self-Esteem Scale, SCL = Symptom Check List-90, WMS = Wechsler Memory Scale.

^a The RAS score is the sum of the answered items, accordant with the advance by Corrigan et al., (2004). Other studies divide the total sum by number of answered items (Mueser et al., 2006).

* = $p < 0.05$

Non normality in subscales was corrected using a square-root transformation (Table 9). The SCL-GSI was successfully transformed, as was work experience. However, other SCL subscales as well as hopelessness, recovery, and avoidance tendency maintained a non-normal distribution.

Table 9

Square Root Transformation of Predicted Variables

Measure	<i>M</i>	<i>SD</i>	Range	Shapiro- Wilkinson	Skew	Kurtosis
Symptom Severity SqRt (SCL-GSI)	1.00	0.30	0.30 – 1.62	.984	-0.06	-0.67
Interpersonal Avoidance SqRt (SCL-IS)	1.04	0.38	0.07 – 1.83	.974*	-0.29	-0.69
Depressive Symptoms SqRt (SCL-DEP)	1.08	0.38	0.07 – 1.76	.970*	-0.42	-0.42
Positive Symptoms SqRt (SCL-PSYCH)	0.89	0.43	0.07 – 1.76	.976*	-0.13	-0.76
Work Experience SqRt SqRt (Years)	3.33	1.70	0 – 7.75	.982	0.32	-0.47
Hopelessness SqRt (BHS)	2.63	0.78	1.00 – 4.47	.969*	0.18	-0.87
Recovery SqRt (RAS-41 Total) ^a	12.49	0.99	7.48 – 14.11	.898*	-1.64	5.43
Avoidance Tendency SqRt (CDP-Decisiven./-1)	-3.57	0.87	-4.90 – -1.73	.955*	0.40	-0.76

Note. BHS = Beck Hopelessness Scale, CDP = Career Decision Scale, RAS = Recovery Assessment Scale, SCL = Symptom Check List-90, WMS = Wechsler Memory Scale.

* = $p < 0.05$,

Bivariate Relationships

The bivariate relationships regarding the career thought indices are most interesting (Table 10). The different career indices are significantly correlated with each other. High comfort and decidedness were related to each other and to low dysfunctional beliefs about career. All three indices significantly related to more assertive job-hunting behaviour.

A strong positive correlation is observed between internalised stigma and dysfunctional career thoughts. Negative relationships to assertive job-hunting and career decision indices suggest that internalised stigma and career thoughts are not independent from each other. Weaker but similar associations with stigma consciousness are observed.

Contrary to expectation is the negative association of decision comfort with concentration and memory. Other career thought indices appear unrelated to these cognitive factors. Interesting are the significant relationships of all career thought indices to each symptom severity index. The strength of the relationships between symptom indices and career certainty indices is particularly noteworthy.

The study found that career decidedness, comfort and assertive job-hunting associate significantly positive to hope and self-esteem. Dysfunctional career thoughts are negatively related to hope and self-esteem. Strong associations are found with the measure of consumer-oriented recovery. Career certainty and assertive job-hunting relate positively and dysfunctionality of career thoughts relate negatively to experiencing recovery.

Another outstanding result is the positive correlation of career certainty indices and the negative association of dysfunctional career thoughts with reported work history. This seems especially relevant when considering that no other variable significantly related to work experience.

Table 10

Bivariate Correlations of Indices Related to Remission and Recovery in Persons with Severe Mental Disorders

Measure	1.	2. ^a	3.	4. ^a	5.	6.	7.	8.	9.
1. CDP-Decidedness	9.05	6.72	13.14	-7.80	-32.54	-.79	-1.17	.55	-.21
2. CDP-Comfort ^a	.67**	10.48	11.66	-7.37	-23.73	-.58	-.97	-2.18	-.81
3. Career Certainty (CDP item 1-3)	.96**	.78**	20.66	-12.20	-45.96	-1.04	-1.65	-.08	-.59
4. Avoid. Tendency (CDP Decisiven./-1) ^a	-.42**	-.37**	-.44**	36.01	63.94	1.30	.82	.17	.23
5. Dysfunct. Career Thoughts (CTI)	-.53**	-.32**	-.49**	.52**	421.83	6.60	5.56	-8.43	-2.03
6. Internalised Stigma (ISMIS)	-.51**	-.31**	-.45**	.39**	.62**	.27	.23	-.17	.006
7. Stigma Consciousn. (SCQ)	-.36**	-.27**	-.34**	.11	.25**	.41**	1.16	.28	.15
8. Memory (WMS-Spatial Span)	.05	-.19*	-.01	.04	-.12	-.01	.08	12.02	1.74
9. Concentration (CPT-IP d')	-.07	-.24*	-.14	.04	-.10	.01	.14	.53**	.93
10. Hope and Self-Esteem	.66**	.55**	.65**	-.47**	-.51**	-.60**	-.42**	-.09	-.18
11. Assertive Job Hunting (AJHS)	.31**	.23*	.27**	-.40**	-.46**	-.41**	-.20**	-.06	-.10
12. Sympt. Severity (SCL GSI SqRt)	-.57**	-.49**	-.55**	.36**	.46**	.59**	.37**	-.01	.03
13. Interpers. Avoid. (SCL-IS) ^a	-.46**	-.39**	-.47**	.38**	.37**	.58**	.32**	-.04	.15
14. Depressive Sympt. (SCL-DEP) ^a	-.53**	-.44**	-.51**	.37**	.38**	.58**	.31**	.09	.15
15. Postive Sympt. (SCL-PSYCH) ^a	-.48**	-.37**	-.45**	.26**	.37**	.47**	.31**	-.05	.00
16. Recovery (RAS-41) ^{a.}	.68**	.59**	.66**	-.43**	-.38**	-.43**	-.34**	-.10	-.18
17. Work Experience SqRt (years)	.24**	.20**	.26**	-.14	-.26**	-.14	-.11	.04	-.11

Note. **Variiances** are reported on the diagonal, covariances are reported above the diagonal, and correlations are reported below the diagonal. AJHS = Assertive Job-Hunting Scale, BHS = Beck Hopelessness Scale, CDP = Career Decision Scale, CPT-IP = Continues Performance Test-Identical Pairs, CTI = Career Thoughts Inventory Total Score, ISMIS = Internalised Stigma of Mental Illness Scale, RAS = Recovery Assessment Scale, RSES = Rosenberg Self-Esteem Scale, SCL = Symptom Check List-90, SCQ = Stigma Consciousness Questionnaire, WMS = Wechsler Memory Scale. ^a For not normally distributed data Spearman correlations are reported, for all other Pearson correlations are reported.

* = $p < .05$, ** = $p < .01$ (two tailed)

Table 10 (continued)

Measure	10.	11.	12.	13. ^a	14. ^a	15. ^a	16. ^a	17.
1. CDP-Decidedness	1.80	15.44	-.52	-1.11	-1.25	-1.06	47.30	1.23
2. CDP-Comfort ^a	1.69	14.56	-.50	-1.01	-1.16	-.89	43.81	1.23
3. Career Certainty (CDP item 1-3)	2.70	20.80	-.76	-1.67	-1.88	-1.52	71.52	1.99
4. Avoid. Tendency (CDP Decisiven./-1) ^a	-2.73	-44.71	.69	1.81	1.75	1.31	-63.92	1.45
5. Dysfunct. Career Thoughts (CTI)	-9.54	-158.33	2.86	6.12	6.40	5.92	-202.06	-8.88
6. Internalised Stigma (ISMIS)	-.28	-3.54	.09	.23	.23	.19	-5.98	-.12
7. Stigma Consciousn. (SCQ)	-.41	-3.62	.12	.29	.26	.23	-8.81	-.20
8. Memory (WMS- Spatial Span)	-.29	-3.63	-.01	-.07	.20	-.15	-3.79	.24
9. Concentration (CPT-IP d')	-.16	-1.59	.01	.12	.09	.00	-3.33	-.18
10. Hope and Self- Esteem	.83	6.06	-.16	-.44	-.50	-.31	15.45	.20
11. Assertive Job Hunting (AJHS)	.40**	278.03	-1.66	-4.44	-3.96	-3.04	176.67	.98
12. Symptom Severity (SCL GSI SqRt)	-.64**	-.33**	.09	.21	.21	.18	-3.20	.02
13. Interpers. Avoidance (SCL-IS) ^a	-.60**	-.33**	.88**	.63	.53	.40	-8.51	.01
14. Depressive Symptoms (SCL-DEP) ^a	-.70**	-.29**	.90**	.84**	.63	.39	-9.04	.00
15. Positive Symptoms (SCL-PSYCH) ^a	-.44**	-.20*	.81**	.66**	.67**	.57	-6.51	.06
16. Recovery (RAS-41) ^a	.70**	.40**	-.51**	-.52**	-.53**	-.41**	544.69	2.91
17. Work Experience SqRt (years)	.13	.013	.03	-.03	-.01	.03	.08	2.88

Note. **Variiances** are reported on the diagonal, covariances are reported above the diagonal and correlations are reported below the diagonal. AJHS = Assertive Job-Hunting Scale, BHS = Beck Hopelessness Scale, CDP = Career Decision Scale, CPT-IP = Continues Performance Test-Identical Pairs, CTI = Career Thoughts Inventory Total Score, ISMIS = Internalised Stigma of Mental Illness Scale, RAS = Recovery Assessment Scale, RSES = Rosenberg Self-Esteem Scale, SCL = Symptom Check List-90, SCQ = Stigma Consciousness Questionnaire, WMS = Wechsler Memory Scale. ^aFor not normally distributed data Spearman correlations are reported, for all other Pearson correlations are reported.

* = $p < .05$, ** = $p < .01$ (two tailed)

Hypotheses

Can certain and functional career thoughts predict remission and functioning?

Multiple regression analyses were used to determine whether positive career decision thoughts (higher decision certainty scores and lesser dysfunctional career thoughts) predicted remission (symptom severity, hypothesis A-1) and functioning (concentration and memory, hypotheses A-2 and A-3). Logistic regression is used to evaluate if work status can be predicted by career thought indices (hypothesis A-4). Table 11 presents results for hypothesis A-1.

The results of the analysis regarding hypothesis A-1 show that career decision certainty significantly negatively and dysfunctional career thoughts significantly positively related to overall symptom severity. All in all 31% of the variance in general symptom severity is explained by this model ($R^2 = .31$).

The results for hypothesis A-2 are presented in Table 12. Both career decision certainty and dysfunctional career thoughts significantly negatively related to concentration (CPT-IP d'). Overall only 6% of the variance in the ability to concentrate is explained by this model ($R^2 = .06$).

Table 11

Summary of Linear Multiple Regression Analysis for Overall Symptom Severity (SCL-90 GSI)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	-.053	.012	-.40**	- 4.28
CTI-Total Score	.007	.003	.24*	2.62

Note. CDP = Career Decision Profile, CTI = Career Thoughts Inventory.

* = $p < .05$, ** = $p < .001$

Table 12

Summary of Linear Multiple Regression Analysis for Discriminative Concentration Ability (CPT-IP d')

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	-.051	.023	-.24*	-2.21
CTI-Total Score	-.010	.005	-.22*	-2.02

Note. CDP = Career Decision Profile, CTI = Career thoughts Inventory. N = 107

* = $p < .05$

Table 13 shows the results to determine whether higher career decision certainty and fewer dysfunctional career thoughts can be used as predictor variables for memory ability (hypothesis A-3). The multiple regression analysis suggests that neither degree of decision certainty nor dysfunctionality of career thoughts significantly related to memory ability.

In hypothesis A-4 logistic binary regression is used to evaluate if the predictor variables, certainty of career decision and dysfunctionality of career thoughts influence work status (employed vs. unemployed). Results show that neither of the variables was predictive of employment status in a statistically significant way (Table 14).

Table 13

Summary of the Linear Multiple Regression Analysis for Memory (WMS III Spatial Span)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	-.064	.084	-.084	-0.76
CTI-Total Score	-.027	.019	-.160	-1.45

Note. CDP = Career Decision Profile, CTI = Career Thoughts Inventory.

Table 14

Summary of the Binary Logistic Regression Analysis for Work Status (employed, unemployed)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	<i>p</i>
CDP-Certainty (items 1-3)	.09	.05	.10
CTI-Total Score	.02	.01	.16

Note. CDP = Career Decision Profile, CTI = Career thoughts Inventory.

* = $p < .05$, ** = $p < .001$

Can certain and functional career thoughts predict consumer oriented recovery?

To assess if positive career decision thoughts (higher scores regarding decision certainty and lesser dysfunctional career thoughts) are related to higher scores on different facets of consumer oriented recovery (hope, self-esteem and an overall recovery scale) three separate multiple regression analyses were conducted.

Table 15 shows the results of hypothesis B-1, if the predictor variables, a more certain career decision, and lesser dysfunctional career thoughts can be used to determine hopelessness. The results indicate that both variables are significantly related to hopelessness; decision certainty negatively, and dysfunctional career thoughts, positively. The model explains 51% of the variance in hopelessness ($R^2 = .51$).

Table 15

Summary of the Linear Multiple Regression Analysis for Hopelessness (BHS)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	-.498	.073	-.53**	- 6.15
CTI-Total Score	.059	.016	.29**	5.67

Note. CDP = Career Decision Profile, CTI = Career Thoughts Inventory.

** = $p < .001$

Table 16

Summary of the Linear Multiple Regression Analysis for Self-Esteem (RSES)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	.094	.130	.43**	4.56
CTI-Total Score	-.052	.029	-.17	-1.81

Note. CDP = Career Decision Profile, CTI = Career thoughts Inventory.

** = $p < .001$

Table 16 shows the finding of the multiple regression analysis evaluating hypothesis B-2; whether career decision certainty and dysfunctional career decision thoughts can be used as predictor variables for the self-esteem score. It indicates that career decision certainty is significantly and positively related to self-esteem; dysfunctional career thoughts, however, do not show a significant relationship. The variance explained by the model is 29% ($R^2 = .29$).

Table 17 shows the results for hypothesis B-3, if higher career decision certainty scores and lower dysfunctional career thought scores can significantly predict higher scores on the recovery scale. Career decision certainty relates significantly positively to recovery scores and dysfunctional career thoughts relate insignificantly to the recovery. The variance clarified by the model overall is 47% ($R^2 = .47$).

Table 17

Summary of the Linear Multiple Regression Analysis for a Recovery Scale (RAS Total)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	3.162	.419	.62**	7.55
CTI-Total Score	-.134	.093	-.12	-1.45

Note. CDP = Career Decision Profile, CTI = Career thoughts Inventory.

** = $p < .001$

Can certain and functional career thoughts predict job-hunting behaviour?

Hypothesis C assesses whether more certain career decisions and lesser dysfunctional career thoughts can be used to determine assertive job-hunting behaviour. The results in Table 18 suggest that career decision certainty cannot be used as a significant predictor to determine assertiveness in job-hunting behaviour. However, dysfunctional career thoughts are significantly negatively related to the assertiveness in job-hunting. The overall variance explained by this model is 22% ($R^2 = .22$).

Table 18

Summary of the Linear Multiple Regression Analysis for Assertive Job-Hunting Behaviour (AJHS)

Predictor Variable	<i>B</i>	<i>SE(B)</i>	β	<i>t</i>
CDP-Certainty (items 1-3)	.226	.362	.06	0.63
CTI-Total Score	- .351	.080	- .43**	- 4.37

Note. CDP = Career Decision Profile, CTI = Career thoughts Inventory.
* = $p < .05$, ** = $p < .001$

Model Assessment

The Mardia coefficient was calculated in Amos 19 to assess multivariate normality. Results are presented in Table 19. The critical values indicate that departure from multivariate normality was negligible (Mardia, 1970; Rencher, 1995).

Are hope and self-esteem important for outcomes related to remission and recovery? Table 20 presents the results of the path analyses for the basic model (Model 1). Chi square (χ^2) tests a fit hypothesis in the limits of sampling error. It indicates the amount of difference between expected and observed covariance matrices. A chi-square value closer to zero means lesser difference between the expected and observed covariance matrices. The probability level must be greater than .05 (Hu & Bentler, 1999). The degrees of freedom (df) indicate the difference between observed and estimated parameters in the model. The Comparative Fit Index (CFI) compares the sample covariance matrix with an assumed null model (all latent variables are uncorrelated), a CFI above .95 is generally desirable (Hu & Bentler, 1999).

Table 19

Multivariate Normality for Assessed Models

Model	Multivariate Kurtosis	Critical Value
Base Model 1 and Base Model 2 (Hope and self-esteem or positive symptoms as predictors)	0.111	.069
Model 1a (Stigma indices as predictors)	-0.894	-.416
Model 1b (Career thought indices as predictors)	-1.060	-.493

The Adjusted Goodness of Fit Index (AGFI) refers to the proportion of the variance that the estimated population covariance accounts for. It further adjusts for loss of degrees of freedom. Values greater .90 are generally deemed acceptable (Hooper, Coughlan, & Mullen, 2008). The Expected Cross Validation Index (ECVI) estimates the discrepancy between the fitted covariance matrix in the sample and an expected covariance matrix in a similar sized sample. It is used to compare competing models. The model with the smallest ECVI indicates the highest potential for replication (Byrne & Shavelson, 1996). A 90% confidence interval for the ECVI (Byrne, 1994) is given in Amos 19. Root Mean Square Error of Approximation (RMSEA) is an estimate of how well the fitted model matches the covariance matrix per degree of freedom. A value close to .06 indicates a close fit, values up to .08 may be considered reasonable (Hu & Bentler, 1999). A confidence interval can be calculated and used as a test of close fit, which requires that the lower limit of the 90% confidence interval is less than .05 (Browne & Cudeck, 1992).

Table 20

Model Fit Indices for Basic Remission and Recovery Path Model

Measure	Fit coefficient (90% C.I.)
χ^2	6.62
<i>df</i>	3
<i>p</i>	.10
Comparative Fit Index (CFI)	.99
Adjusted Goodness of Fit Index (AGFI)	.89
Expected Cross Validation Index (ECVI)	.28 (.25 - .39)
Root Mean Square Error of Approximation (RMSEA)	.10 (.00 - .21)

Note. Fit coefficients for Model 1 (hope and self-esteem treated as exogenous variable).

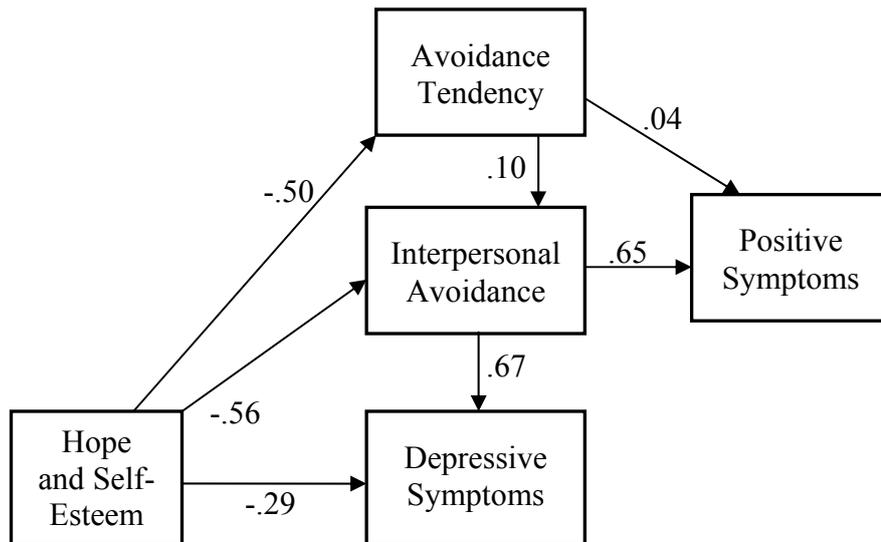


Figure 8. Basic remission and recovery path model (Model 1). Hope and self-esteem treated as exogenous variable. Error terms have been omitted for clarity.

As can be seen from Table 20 the model is acceptable as a base model for further investigations even though some model fit indices are not in the acceptable range. The Chi square p value and the overall chi square value as well as the CFI and tentatively the AGFI indicate that the model is promising. In Figure 8 the standardised regressions for Model 1 are presented. There are two not significant regression lines in the model. avoidance tendency is not significantly related to positive symptoms nor to interpersonal avoidance thus replicating the findings by Yanos et al. (2008).

Can the model using stigma as predictor of remission and recovery related outcomes be replicated? Here stigma consciousness and internalised stigma are used as exogenous variables predicting hope and self-esteem, which, according to theoretical considerations, mediate the relationship of stigma to factors related to recovery. Other associations assumed by Yanos et al. (2008) are also replicated (stigma consciousness to avoidance tendency and to depressive symptoms). Results are shown in Table 21.

Table 21

Model Fit Indices for Replicated Remission and Recovery Path Model

Measure	Fit coefficient (90% C.I.)
χ^2	24.57
<i>df</i>	9
<i>p</i>	.00
Comparative Fit Index (CFI)	.96
Adjusted Goodness of Fit Index (AGFI)	.82
Expected Cross Validation Index (ECVI)	.58 (.48 - .75)
Root Mean Square Error of Approximation (RMSEA)	.13 (.07 - .19)

Note. Fit coefficients for Model 1a (stigma indices treated as exogenous variables).

The *p* value for the Chi square measure for Model 1a suggests that there is a significant divergence of the data from the model and the AGFI and RMSEA indices indicate the inaccuracy of the model (Table 21). Overall the model proposed by Yanos et al. (2008) was not replicated with the current sample. Figure 9 shows the standardised regression coefficients and notes intercorrelations for exogenous variables. Some regressions in the models show non-significant results. In Model 1a (Figure 9) stigma consciousness is not significantly related to depressive symptoms and to avoidance tendency. As in the base model (Model 1) avoidance tendency is in turn not significantly related to interpersonal avoidance and positive symptoms. This largely replicates the insignificant findings in the Yanos et al. (2008) model except that here stigma consciousness relates significantly to hope and self-esteem.

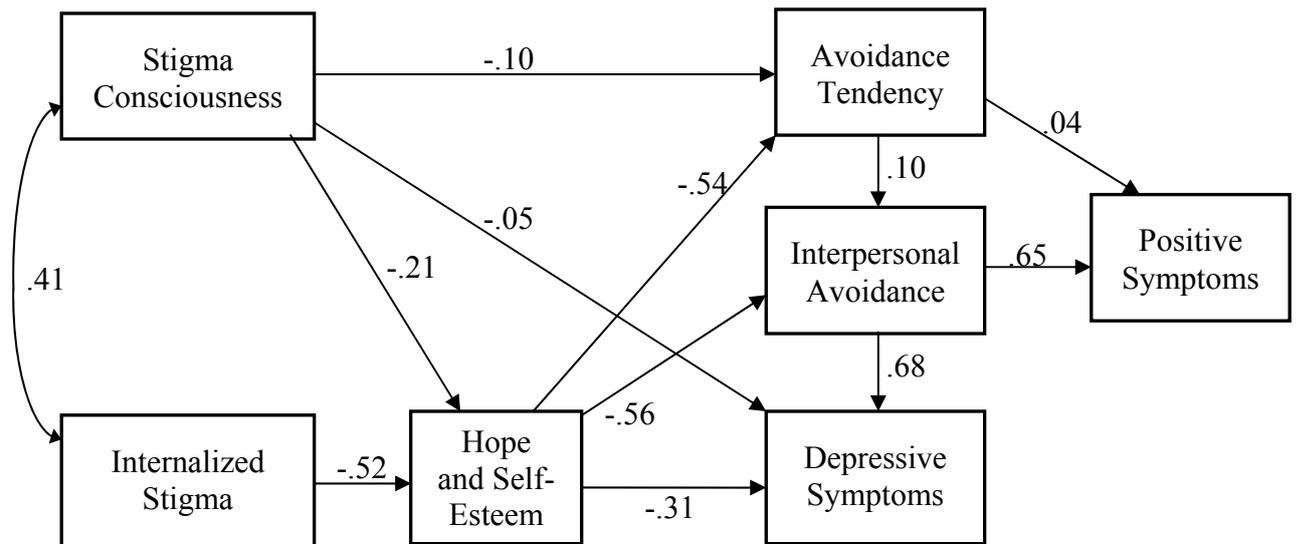


Figure 9. Replicated remission and recovery path model (Model 1a). Stigma indices treated as exogenous variables. Error terms have been omitted for clarity.

Can career thought indices be used as predictors in a model of outcomes related to remission and recovery? Model 1b assesses an alternative path model where career thought indices are used to predict hope and self-esteem as an important mediator for other factors related to recovery. Model fit indices are shown in Table 22.

Table 22

Model Fit Indices for an Alternative Remission and Recovery Path Model.

Measure	Fit coefficient (90% C.I.)
χ^2	14,31
<i>df</i>	9
<i>p</i>	.11
Comparative Fit Index (CFI)	.99
Adjusted Goodness of Fit Index (AGFI)	.89
Expected Cross Validation Index (ECVI)	.48 (.44 - .62)
Root Mean Square Error of Approximation (RMSEA)	.07 (.00 - .14)

Note. Fit coefficients for Model 1b. (Career thought indices treated as exogenous variables).

Only the AGFI falls, as in the base model, marginally below the desirable value. Overall this model fits the data well and can be accepted. The lower ECVI value indicates the superiority of the career thought index model (Model 1b) to the stigma related model (Model 1a). Figure 10 shows the standardised regression coefficients. In Model 1b avoidance tendency is not significantly related to interpersonal avoidance and positive symptoms. A direct relationship between career decision certainty and avoidance tendency was not supported besides a significant bivariate relationship. Any impact of career decision certainty on avoidance tendency is mediated by hope and self-esteem.

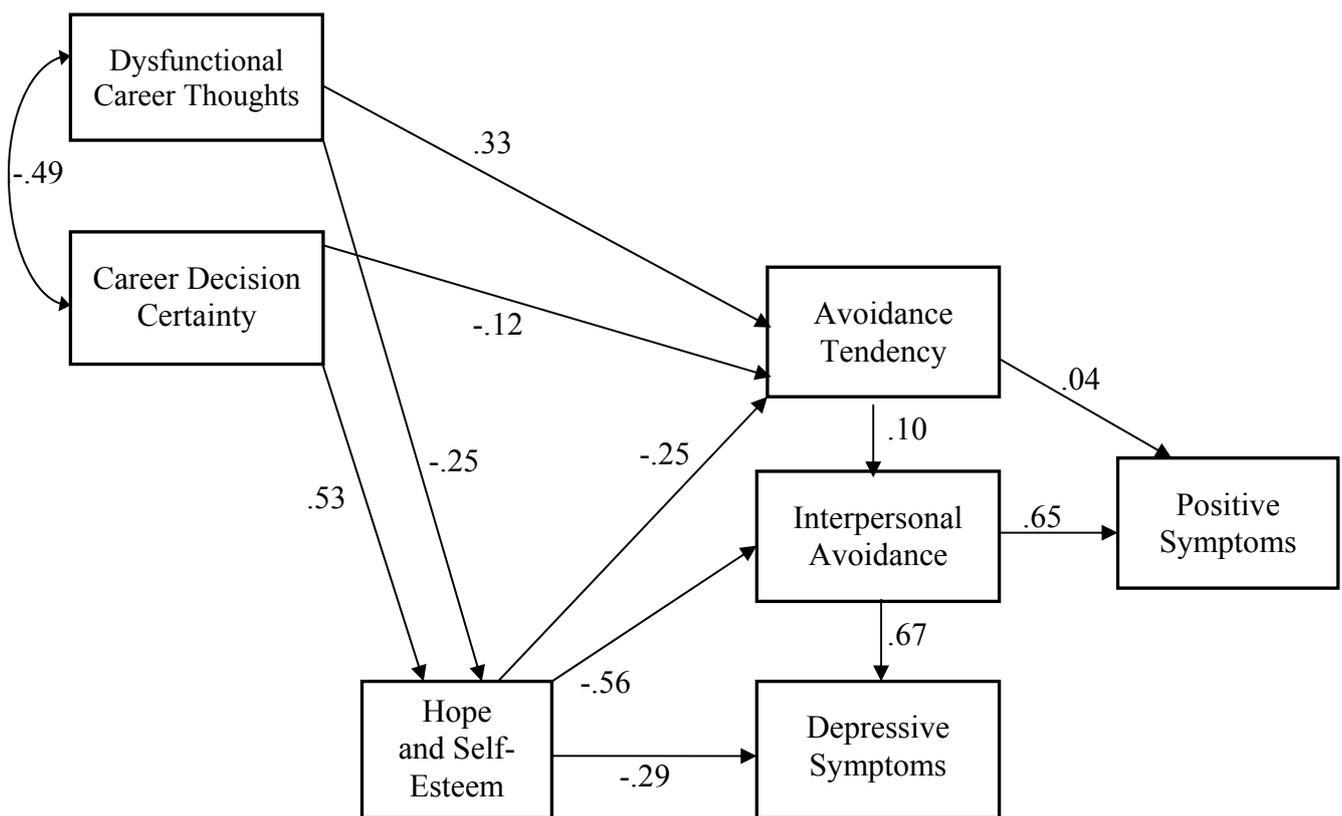


Figure 10. Alternative remission and recovery path model (Model 1b). Career thought indices treated as exogenous variables. Error terms have been omitted for clarity.

Can positive symptoms be used as predictor in a model of outcomes related to remission and recovery? Here the basic assumptions of the second model suggested by Yanos et al. (2008), referring to a finding by Fialko et al. (2006), is replicated. Model fit indices are presented in Table 23. Figure 11 presents standardised regression coefficients. Results suggest a significant divergence between the data and the model. None of the model fit indices falls in the acceptable range. The ECVI shows that this model is inferior to all other models assessed in the current study. This model needs to be rejected and further analysis using positive symptoms as exogenous variables was accordingly not conducted.

Table 23

Model Fit Indices for the Second Basic Remission and Recovery Path Model

Measure	Fit coefficients
χ^2	40.64
<i>df</i>	4
<i>p</i>	.00
Comparative Fit Index (CFI)	.87
Adjusted Goodness of Fit Index (AGFI)	.44
Expected Cross Validation Index (ECVI)	.60 (.44 - .83)
Root Mean Square Error of Approximation (RMSEA)	.34 (.25 - .44)

Note. Fit coefficients for Base Model 2. Positive symptoms treated as exogenous variables.

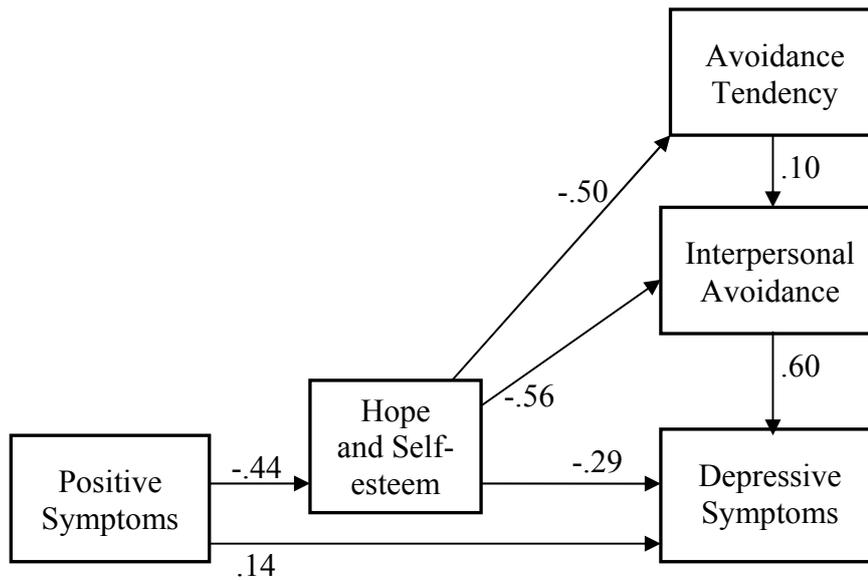


Figure 11. Second basic remission and recovery path model (Model 2). Positive Symptoms treated as exogenous variable as suggested by Yanos et al (2008). Error terms have been omitted for clarity.

Discussion

Discussion of Major Findings

This research set out to reduce the gap regarding empirical findings on concepts that have a considerable history in career counselling but have insufficient findings available in mental health research. In summary, the results of this research support the importance of career thoughts for symptom remission and recovery factors. These are, as shown in the reviewed literature, in turn known to impact employment outcomes. Career undecidedness and dysfunctional career thoughts can be further targeted by interventions, whereas work history, the most commonly found predictor of employment, can, by nature of being historic, not be influenced by interventions. Even though in this study the hypothesised direct relationship to work status has not been found, related findings tentatively suggest the possible benefit for vocational rehabilitation (relationships to work experience, symptom severity, job-hunting behaviour).

The hypothesis that high career choice certainty and low dysfunctional career beliefs can predict general symptom severity was supported. These predictor variables were not predictive of concentration ability and memory as hypothesised. The proposed assumption that high career choice certainty and low dysfunctional career beliefs can predict hope received strong support by the analyses. Self-esteem and an overall recovery scale, however, appeared to be only predicted by career choice certainty. Job-hunting assertiveness was, conversely, predicted by dysfunctional career thoughts but not by career choice certainty.

The theory-based assumptions assessed in models provided further support for the relevance of career decisions and thoughts in the context of mental health. The proposition that hope and self-esteem are important mediating factors was overall supported. However, the stigma-related model tested by Yanos et al. (2008) could not be sufficiently replicated, in spite of internalised stigma being a significant predictor for hope and self-esteem. The subsequent, and for this research central, notion that career thought indices can predict factors of remission and recovery and that the influence of career decidedness and dysfunctional career thoughts on outcomes related to recovery is partially mediated by the impact on hope and self-esteem was supported by the data. Positive symptoms did not appear promising as predictor of hope and self-esteem and remission and recovery factors. This research showed that measures of career decision certainty and dysfunctional career thoughts are significantly related to factors of 'remission and functioning' and 'consumer oriented recovery'. Interventions targeting these factors may therefore enhance symptom remission and recovery from mental illness and consequentially support employment outcomes.

Interpretation of Findings and Comparison to Other Studies

The observed associations between career decision certainty and dysfunctional career thoughts suggest the importance of these factors for research and interventions relating to severe mental disorders. It should be pointed out that persons who are more certain about their career decision likely feel more comfortable about this decision and that certainty and comfort with the decision relate to lesser dysfunctional career thoughts. The relatively low career decidedness, high extent of dysfunctional career thoughts and limited job-hunting assertiveness found in the current sample (see below) point towards the need to address these topics when planning treatment for mental health clients. The values observed for the CDP Decidedness and Comfort scales, for example, indicate very similar results as reported for undergraduate students (Jones, 1989), a population which is typically still in development of career paths. A study using adults that were actively looking for career-counselling, reported slightly higher decidedness and decisiveness mean values (Austin, Dahl, & Wagner, 2010) than observed in this sample. Considering the similar values observed in this study and studies that used adults actively requiring career support, indicates the need for career decision support in mental health populations. The difference between the CTI scores in this study and the validation sample (Sampson et al., 1998) is rather large. The mean in this sample is almost three times as high as the values reported for the adult normative sample and not quite twice as high as in a sample of career counselling clients. This indicates a remarkably high amount of dysfunctional career thoughts in this sample and possibly in persons with severe mental illness overall. Participants were much less assertive in job-hunting than both, the normative validation sample (Becker, 1980) which consisted of university students, and samples described by others. For example the level of assertiveness reported by Schmit et al. (1993) for minimally educated workers who had no training beyond high school or had not finished high school was notably greater than observed here. These

differences suggest that the level of job-hunting assertiveness in participants was much lower than among job hunters unaffected by mental disorder.

A large amount of literature points towards the importance of vocational cognitions in the context of remission and recovery, nevertheless, up until now quantifiable evidence have been missing. The inference of the previously conducted qualitative research (Dolberg, 2009), that vocational indecision and psychopathological symptom distress are connected, was confirmed. Findings of other studies confirm the results reported in this study.

Psychological distress is concurrent in clients looking for counselling of career related problems (Multon et al., 2001; Pace & Quinn, 2000). The strong association between career indices and symptom distress indices observed in this study (especially between career choice certainty and general symptom severity) gives further credibility to the assumption that the severity of psychopathology is, to a certain extent, dependent on vocational problems. A considerable amount (31%) of variation in general symptom severity is explained by career thought indices. A person who has a certain and functional idea of what she or he wants to be vocationally is less likely to be distressed and displays fewer severe psychopathological symptoms. This further gives support to the argument that psychologists have failed to acknowledge the potential of career counselling for mental health (Swanson, 1995). The association of vocational cognitions and job-hunting behaviour specifically with indices of depression has been suggested before for other populations (Saunders et al., 2000; Uthayakumar et al., 2010; Koivisto, 2010; Price et al., 1992).

The association of cognitive functioning factors with career thought indices (Feldman, 2003; Hollender 1971; Kanfer & Kantrowitz, 2002) is not supported by the current results. Memory ability was not significantly predicted and the relationship indicated with concentration ability was opposite to the one predicted; its limited strength indicated that this finding may additionally be clinically negligible. The aforementioned assumption, regarding

persons with mental illness made by Rogers et al. (1991), that an active vocational decision can predict work outcomes, is not directly supported. However, the assumed relationship of career decisions to work history (Rogers et al., 1991) received support.

The previously found relationship between hope and career thought indices (Horne, 2010; Larson et al., 1988) was observed here as well. A decision as to what one wants to become vocationally appears to substantially contribute to a positive hopeful outlook on one's own future. When considering hope as a major factor in consumer oriented recovery in concurrence with the vocation related possibilities of strengthening empowerment, agency and sense of identity, it appears unreasonable to omit addressing vocational thoughts and choice certainty in mental health recovery. The evidence suggests that persons engaged in an assertive search for work are less likely to perceive the future as hopeless and the self as unworthy and, vice versa, persons that perceive themselves positively may further be more likely to be assertive.

Observed associations between career thought indices and self-esteem have been addressed at intervals within the field of psychology (e.g. Creed et al., 2010, Korman, 1967) and are supported here. An active decision on a vocational field can contribute to one's own sense of identity and subsequently to a positive self-perception. It may be that in some cases dysfunctional career thoughts are not identified as dysfunctional by the individual and therefore do not influence the perception of oneself; in contrast increased career certainty can directly contribute to a conscious positive self-evaluation. This may be similarly true for the found associations of the career indices with the recovery measure. A made decision appears to support the perception and experience of being on a pathway to recovery while a possible dysfunctionality of career thoughts may not be recognised by the individual. However, the results regarding job-hunting assertiveness suggest the importance of functionality of career related thoughts. Even though the dysfunctionality of career thinking may not be directly

relevant for self-perception, it appears that it is important for behaviour, such as assertive job-hunting. That stigma indices and career development are related (Feldman, 2004; Morrow, 1997) is supported by the observations in this study. Career decisions may counter stigma internalisation by providing the possibility for an alternative social role besides the 'sick-role', thus supporting the consumer oriented recovery related transformation 'from patient to person'. The notion that it is beneficial for mental health clients to have their decision to seek employment supported (Cook & Razzano, 2000) is backed up by this study. Another study, that provided results similar to the current observations, reported that having a vocational goal can predict later assessed clinical, vocational, and social variables in persons with schizophrenia spectrum disorders (Waghorn & Chant, 2007). Further relationships between job preferences and job satisfaction (Becker et al., 1998; Mueser et al., 2001a), and between job satisfaction and mental health (Faragher, Cass, & Cooper, 2005) are generally in line with the current findings. Overall, when comparing the current results to other research, the findings of this study seem not surprising, they do, however, point towards a large potential of career thought indices in the context of mental health recovery.

An examination of the results regarding the model using hope and self-esteem as predictors reveals that two fit indices marginally exceed acceptable values, even though the model can overall be accepted. In this context it would be especially interesting whether the full theoretically proposed model (Yanos et al., 2008; 2010), which includes factors not actually assessed by Yanos et al. (2008) or here, such as suicide risk, can be empirically supported. Additionally it indicates, in line with other results of this study, that factors usually considered in the context of consumer oriented recovery (e.g. hope and self-esteem) are not dissociated from factors typically considered in a psychiatric remission and functioning context (e.g. symptom severity). A complementary understanding emphasising interactions of factors associated with the psychiatric and the consumer oriented approach

(bearing in mind that it is an individualised concept) appears to be most promising for further considerations.

Regarding the stigma related model it is noteworthy that this study found similarly significant and insignificant regression slopes to the ones reported by Yanos et al. (2008), tentatively suggesting the comparability of the findings. The strong relationship of internalised stigma to hope and self-esteem in both studies support the assumption of Yanos et al. (2008; 2010) that this factor is relevant in the context of mental health and pathogenesis. The results of the model regarding career thought indices provides confirmatory evidence, that having a certain career decision and functional career thoughts contribute to factors associated with remission and recovery, which advances the findings of the bivariate and regression analyses by considering the influence of other illness related variables.

Combining hope and self-esteem into one scale may have contributed to the significant association with dysfunctional career thoughts in the model, since self-esteem was not significantly related to dysfunctional thoughts in the regression analyses. It may be that dysfunctional career thoughts do not relate strongly to self-esteem or experienced recovery but have an impact on behaviour such as avoidance or assertiveness. However, the significant association of dysfunctional career thoughts with hope indicates that the functionality of career thoughts has an impact on future expectations.

The findings support notions such as ‘making a decision what one wants to become vocationally can contribute to a positive perception of identity and to a more positive outlook on one’s future’ or ‘vocational decision making can be seen as a first step towards a more normal (working) life and accordingly has the potential to reduce distress and experienced symptoms’.

The rejection of the model considering positive symptoms is not surprising given that it is the model with the weakest theoretical background. Even though the analyses confirmed a direct association between positive symptoms and hope and self-esteem, the notion that positive symptoms directionally predict outcomes related to recovery as identified by Yanos et al. (2008) is not supported.

Observations that are less central in this current research regard, for example, the age range. Most participants fall in the range of 30 to 50 years of age. Thus most persons in the sample are of working age which indicates the possible relevance of vocational topics for this group. Further a larger group than epidemiological data would suggest (Oakley-Browne, Wells, & Scott, 2006) had schizophrenia. This may, however, represent the type or severity of illness of persons typically attending community-mental health services (esp. the Tapestry Clubhouse of the Schizophrenia Fellowship Otago) or it may be due to the use of the term ‘severe mental disorders’ when discussing recruitment with the professionals at the approached services. Further the observed associations between different symptom severity indices and the recovery measure support the complementary understanding of ‘remission and functioning’ and ‘consumer oriented recovery’ in this research. However, cognitive functioning (concentration and memory) seemed unrelated to this measure.

Limitations

There are a number of limitations that need to be considered when interpreting the results of the current study. Generally issues of psychometric properties should be considered. Validity is a particular challenge. Stigma, for example, could be assessed in different ways than done here. The Stigma Consciousness Questionnaire assesses the degree to which a person expects to encounter stigmatising experiences and the Internalised Stigma of Mental Illness Scale measures the degree of internalisation of stigmatising beliefs. Another way to assess stigma would be the occurrence of stigmatising experiences in a certain period.

Psychometric tests often give only limited answer possibilities that may only partially reflect the participant's attitudes and characteristics. The career certainty measure (e.g. 'Have you decided on an occupation? How certain are you?') and the dysfunctional career thought scale (e.g. absolutist thoughts such as 'I'll never find a field of study or occupation I really like') are fairly straight forward, but lack appropriate normative samples to evaluate the meaning of the observed values. It would be desirable to have comparative data as reference points, for example on persons with similar unemployment experience but no mental disorder, a demographically similar sample with physical disabilities, and possibly a sample of persons with less severe mental disorders. Stability, especially in a sample regarding severe mental illness, is another issue with these newly applied career constructs. It is possible (especially when considering delusions, depressed mood, and manic episodes) that these measures, to a certain extent, represent fluctuations in symptomology and do not clearly reflect rational or conscious career decisions. These considerations may, however, be relevant for self-esteem, hope, and all other self-reports. A major methodological limitation is the cross-sectional study design. It does not allow firm conclusions regarding causality and directionality. Alternative explanations of the found associations, specifically inversed or alternative directionalities, cannot be ruled out. These limitations need to be taken into account when regarding the results of this research.

Conclusion

The over-arching assumption that certain vocational thoughts relate to better outcomes in remission and functioning and consumer oriented recovery is, based on the current results, acceptable. This study takes its place amongst the numerous studies that show the benefits of different vocational factors for mental health.

Even though in this study no significant relationship to work status was found, related findings (relationships to work history, job-hunting behaviour, symptom severity, and the

hope and self-esteem mediated relationship to depression) tentatively suggest the possible benefit for vocational rehabilitation. Further vocational rehabilitation is not the ultimate goal but rather one part of overall remission and recovery. This research showed that the measures used here with persons suffering from severe mental disorders, relate to different factors of remission and functioning and consumer oriented recovery, and therefore offer value for research and interventions in this field. This is not surprising considering the large amount of literature pointing towards this finding, both empirically and theoretically, as well as an understandable and reasonable common-sense appeal to narrative. The finding of the previously conducted qualitative research was confirmed and has gained the support of quantitative evidence for the association of vocational indecision and psychopathological symptom distress.

Further the values for career decidedness that are comparable to students and adults in search of career counselling, indicate the need for addressing the issue of career decisions with persons who suffer from a psychiatric illness. Rather significant is the large number of dysfunctional career thoughts showing that the extent of these beliefs in this population is two to three times higher than in other populations. Findings on job-hunting behaviour indicate similarly, but less dramatic, that this population scores lower than even minimally educated workers. Bivariately, the found associations include relationships to stigma, avoidance tendencies, hope and self-esteem, a recovery measure, and different symptoms. On the basis of the these associations with indices of remission and recovery, the need to address topics such as career decision making, functionality of career thoughts, and job-hunting behaviour becomes obvious.

Support was found for the association of career thought indices with overall symptom severity explaining a good part (about a third) of variation in symptom severity. The hypothesised association with better concentration ability was overall not supported, even

though the indices showed significant associations. Decision certainty was contrary to expectations inversely related to concentration ability and the strength of the relationships was very small (6%). The predicted association with memory was not supported either.

Associations of neurocognitive functioning with vocational outcomes could accordingly not be replicated for vocational thoughts. Presumably, whether a person can get employment or not is the result of a complex process including a multitude of person related and circumstantial factors. The strong bivariate association between the career thought indices likely explains the partially insignificant result regarding self-esteem. A similar assumption can be made about the only partially significant finding for the recovery measure.

Dysfunctionality of thoughts may not influence the experience of 'being in recovery' or the self-perception since it is likely that dysfunctional thoughts, if persistent, have not been identified as dysfunctional by the individual.

This research set out to reduce the gap in research regarding findings on concepts that have an established history in career counselling but have not been researched with regard to mental health recovery. The reviewed literature showed the strong potential that these career related concepts may have for remission and recovery. The findings of this study support this notion.

An existing gap has been reduced with evidence that can be used to answer the overarching questions in this research: Do vocational decision thoughts play a role in remission and functioning, in consumer oriented recovery, or both processes? And: Does the evidence suggest that vocational decision thoughts are appropriate predictor variables for outcomes related to recovery as identified by Yanos et al. (2008)? It appears that vocational decision thoughts are important for processes relating to factors such as symptom severity, work experience, hope, and a recovery measure. Vocational thoughts can predict outcomes related to recovery, as identified by Yanos et al. (2008), underlining the potential usefulness

of these concepts in mental health and recovery. This research can provide a starting point for future research interested in the intersection between career interventions and mental health rehabilitation. Furthermore it provides a first empirical base for interventions that may target these career related factors. The presented findings suggest that such interventions can improve the benefits that suffering individuals gain through treatment. Knowledge to orientate oneself in the “real” (vocational) world has the potential to support remission and the recovery process. Integrating such concepts into community-based support programs will likely add to the quality of these services. The aim of this research, to contribute, in the long run, to the reduction of the immense strain that individuals and society suffer from mental illness has not been reached yet. It is, however, hoped that the results can be used to make another step on this long journey.

Implications

One implication of this study for further research in this field is that these career related constructs need to be assessed in a longitudinal design to ascertain the directional assumptions proposed in this research. Further tasks are relating to a sample size sufficient to establish test quality criteria and normative data for this population. Finally, since this is just a single study, any research addressing these constructs in mental health and the intersection of career and mental health interventions would be worthwhile, either solidifying or altering the findings presented here.

The most outstanding finding of this research is that the evidence supports a notion that has not been sufficiently regarded for more than two decades (c.f. Herr 1989), that supporting mental health clients with their individual career decisions can alleviate symptoms, contribute to hope and self-esteem and foster the recovery process. The findings implicate the need for interventions specifically aiming at career decisions, functional career thoughts, and job-hunting behaviour. This may not only foster recovery from mental illness but may as well

be cost-effective. For one, unemployment of mentally ill persons and associated welfare reduces societal productivity and causes considerable costs. Secondly, designing interventions that, simply speaking, evolve around the questions: ‘What do you want to do as a job?’ and ‘How can we reach that?’ do likely not require the investment of vast resources.

If only one thing is remembered about this research it should likely be that interventions aiming at improvements that are directly associated with ‘real world’ circumstances, such as employment (or housing and social integration), have a strong potential to increase the quality of the lives of those suffering from severe mental illnesses.

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Appendix A



VOCATION-RELATED THINKING AND READINESS

Information Sheet for Participants

You are invited to take part in this project. Thank you for showing an interest in it. Please read this information sheet carefully before deciding whether or not to participate. If you decide to participate we thank you. If you decide not to take part there will be no disadvantage to you of any kind and we thank you for considering our request.

What are the aims of the project?

Our aim is to find out whether thoughts and beliefs about work and career are related to the sorts of things people do to obtain employment. We also want to know if these thoughts and beliefs are related to psychological stress, and things such as self-esteem, stigma, concentration, memory, and the symptoms you experience.

What type of participants are being sought?

Our focus is on people who have been diagnosed with a major mental disorder and who are involved in mental health services (e.g., Tapestry Clubhouse, Community Mental health Teams). Participants need to be 18 years or older.

What will participants be asked to do?

If you agree to take part in this study, you will be asked to take part in an interview. During the interview, you will be asked questions about who you are (e.g., your age and ethnicity), your thoughts and choices about work, about the symptoms you experience and how you feel about yourself and the future, and about stigma. You will also be asked to complete a memory task and an concentration task. We will also ask your permission to look at psychiatric records held by the Southern District Health Board. This will take about 1 1/2 hours of your time.

People who take part in the study will be given \$30 as a reimbursement.

Can participants change their mind and withdraw from the project?

You may decide not to take part in the study without any disadvantage to yourself of any kind.

If you decide to take part now, you are allowed to change your mind later. You can stop taking part in the study at any time without any disadvantage to yourself of any kind.

What information will be collected and what use will be made of it?

We will write down your answers to the questions we ask you and collect your responses on the questionnaires and tasks. We will also find out information about your diagnosis, symptoms, and treatment from your medical records. This information will only be used for the aims of this study described above.

All of your information will be kept confidential. Your personal identifying information (e.g. your name and personal data) will be kept separate from the other information you give us. We will store your information in locked storage facilities in the Department of Psychology at the University of Otago. Only those named below will have access to this information. All identifying information will be destroyed 10 years after the completion of the study.

Findings of this study will be published in a book (Masters thesis) and in scholarly journals. The findings will also be presented to Tapestry Clubhouse and others interested in this work. These publications and presentations will not identify you or contain your personal information. If you wish, you are welcome to request a copy of the results of the study. This project is being undertaken as part of the requirements for a Master of Science degree. Please be aware that there may be a delay between the data collection and the publication of the results.

Benefits

In the long run, we hope that the knowledge gained from this study will be used to help those who have a major mental illness gain the employment they seek. Knowledge about what helps people to find employment may then be integrated in community-based support programs (e.g. Tapestry-Clubhouse) adding to the quality of these services.

What if participants have any questions?

If you have any questions about our project, either now or in the future, please feel free to contact either:

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Department of Psychology

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This study has received ethical approval from the Lower South Regional Ethics Committee.

If you have any queries or concerns about your rights as a participant in this study you may wish to contact a Health and Disability Service Consumer Advocate, Telephone: (03) 479 0265 or freephone 0800 37 77 66 or freefax 0800 2787 7678 (0800 2 SUPPORT) or email advocacy@hdc.org.nz. If there is a specific Māori issue/concern please contact Linda Grennell at 0800 377 766.



VOCATION-RELATED THINKING AND READINESS

Consent Form for Participants

I have read the Information Sheet concerning this project and understand what it is about. All my questions have been answered to my satisfaction. I understand that I am free to request further information at any stage.

- I have had the opportunity to use whānau support or a friend to help me ask questions and understand the study.
- I understand that taking part in this study is voluntary (my choice)
- I know that I may withdraw from the study at any time, and this will in no way affect my continuing and future health care.
- I have had this project explained to me by the researcher.
- I understand that my participation in this study is confidential and that no material that could identify me will be used in any reports on this study.
- I understand that the investigation, will be stopped if it should appear harmful to me.
- I have had time to consider whether to take part in the study.
- I know that the results of the project may be published and will be available at the University of Otago Library (Dunedin, New Zealand). No material that could identify me will be used in any reports on this study.
- I know that information on which the results of the project depend and personal information will be retained in secure storage for 10 years. After that, identifying information will be destroyed.
- I understand that the study procedures used are not physically harmful and do not cause any physical discomfort;

I agree to take part in this project.

Signature of participant

Date

I would like to receive a copy of the results. There will be a delay between data collection and publication of the results.

YES

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VOCATION-RELATED THINKING AND READINESS
Consent to Access Psychiatric Records
Version 28 October 2012

I hereby agree to allow Dr. Richard Linscott (Senior Lecturer) and Tobias Dolberg (Masters Research Student) to look at my psychiatric records for the purpose of this study.

Family name:

Given name(s):

Date of birth:

Address:

Telephone:

Signature:

Date:

This study has received ethical approval from the Lower South Regional Ethics Committee.

If you have any queries or concerns about your rights as a participant in this study you may wish to contact a Health and Disability Service Consumer Advocate, Telephone: (03) 479 0265 or freephone 0800 37 77 66 or freefax 0800 2787 7678 (0800 2 SUPPORT) or email advocacy@hdc.org.nz. If there is a specific Māori issue/concern please contact Linda Grennell at 0800 377 766.

Appendix B

Assessment Protocol

Address of welcome:

Thank you for coming and for being willing to help me with my study.
Please have a seat

Explanation of Reason for research

This study tries to find out whether thoughts and beliefs about work are related to the sorts of things people do to get a job.

We also want to know if the decision about a job is related to psychological symptom stress, and things such as self-esteem, stigma, concentration, memory, and the symptoms you experience.

Basically the results will be used to support people make decisions on how to get a job and then live a better life.

Info Sheet

This is for you to read and then to take home. However, I will give a brief explanation of these points.

- a) We aim to support people like yourself in how to make a better decision in getting a job and live a better life.
- b) We are looking for people from the Tapestry Clubhouse where this study takes place.
- c) I have a few questionnaires and some interviews for you to take part in. There are also two fun activities that look at memory and attention.
This will take about an hour and a half and at the end you get \$30 for your time.
- d) You can withdraw at any time. So if you feel uncomfortable, feel free to say so and you can leave.
- e) All information is private and will not be for anyone else's eyes. I will use the information you give me for my thesis but we will only present group data. So your individual data will not be seen at all.
- f) This is for people like yourself. We hope that in doing this study, this can be used to support people like you to have a better life by helping them making a decision on a job.
- g) If you have any questions please ask, or later you can as well contact me.

Take your time to have a read yourself and let me know when you are ready.

Consent Form

This is a consent form to make sure for you that we cannot misuse your trust or information.

It says:

- That I explained the study to you, that you have time to decide if you want to take part and that you have opportunity to ask questions and that you can as well ask someone else. As well that taking part is voluntary and that you can withdraw at any time and that we stop if you feel harmed in any way. There is no physical discomfort involved. Finally that your personal information is confidential and that only the group results will be used in my thesis so no one can identify you. And that your information will be stored in a secure way

Have a read again and if you feel comfortable please sign and date. You can indicate to receive a copy of the results

Consent II

This form here is important for us. It asks if you allow us to access your psychiatric records at the Southern District Health Board. This is important because without it we do not know what kind of people need what kind of support. Basically it helps us to see who can be helped by this research. Emphasize confidentiality (privacy)

Any questions about this?

If you feel alright with it please fill out the form.

→Questions: ---

Starting Evaluation:

Demographical Data – self report

These are some general questions about you, like age and gender and ethnicity and your education and work background.

CDP Interview:

Guideline Briefing:

This is an interview which is designed to help you think about your career choice. I will read each statement from this inventory one by one.

- Here is a copy for you so that you can follow along as I read.

You will be asked:

- a. How decided you are,
- b. How comfortable you are with your decision, and about
- c. Your career decision needs.

There are no right or wrong answers. Just give the answer that best fits you. You do not need to spend too much time on answering any one statement.

After I read each statement I want you to tell me how strongly you agree or disagree on *this* scale from one to eight.

1 2 3 4 5 6 7 8
 STROGLY DISAGREE STRONGLY AGREE

- First let me ask you: Have you decided on an occupation? How certain are you? Now think about it for a moment [...]. Say the appropriate number from 1-8 how much you agree with the following statement.
- →Read first statement

Decidedness

I have an occupational field in mind that I want to work in (for example medicine, agriculture, management, or the performing arts).

- Now, on a scale from one to eight how much do you agree or disagree with this statement? (Stop asking about the degree of agreement, when the participant understands the instructions.)

Questions: - Answer to whatever YOU understand, - No right and wrong

- If you are unsure decide on the basis of what number mostly describes your agreement or disagreement.

→ If...:

The participant starts to answer questions ahead of the examiner reading them, let him proceed if s/he seems reflected, alert and knowledgeable.

Use tact to encourage the participant to reflect sufficiently. //→ It is important that you think shortly about any question and answer openly... // Do not over- nor under emphasize

Traps

Do not explain items!!!

Do not spend too much time on any one statement.

RAS (Self-Report):

Just as a reminder all information is confidential

This is a list of statements that describe how people sometimes feel about themselves and their lives. Please read each one carefully and *circle* the number to the right that best describes the extent to which you agree or disagree with the statement. *Circle* only one number for each statement *and please do not skip any items*.

STRONGLY DISAGREE

1	2	3	4	5
---	---	---	---	---

 STRONGLY AGREE

- So please circle ONE number on a scale from one to five to show how much do you agree or disagree with each statement.

Traps

Not hurried, not explaining

Questions:

Just say that they should answer to whatever THEY understand,

There is no right and wrong

If you are unsure decide on the basis of what number mostly describes your agreement or disagreement (first impulse).

Use tact to encourage the participant to reflect sufficiently.

→ It is important that you think shortly about any question and answer openly...

CTI (Interview) :

This Interview is an Inventory that has been developed to help people learn more about the way they think about career choices.

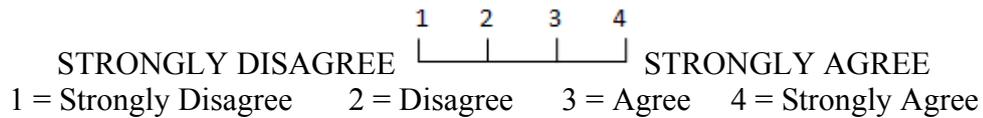
- Here is a copy for you so that you can follow along as I read.

It is a list of statements describing thoughts that some people have when considering career choices.

Please answer each statement openly and honestly as it describes you.

As with the other interview I will read a list of statements to you. Listen to each statement carefully and indicate the degree to which you agree or disagree with each statement. Please answer every question.

After I read each statement I want you to tell me how strongly you agree or disagree on *this* scale from one to four.



➔ Read: 1. No field of study or occupation interests me.

Now, on a scale from one to four how much do you agree or disagree with this statement.

(Stop asking about the degree of agreement, when the participant understands the instructions.)

If the participant starts to answer questions ahead of the examiner reading them, let him proceed if s/he seems reflected, alert and knowledgeable. - Use tact to encourage the participant to reflect sufficiently

Questions:

Just say that they should answer to whatever THEY understand

There is no right and wrong

If you are unsure decide on the basis of what number mostly describes your agreement or disagreement (first impulse).

Traps: Do not explain items

AJHS (Self-Report)

- This inventory is designed to provide information about the way in which you look for a job. Please picture yourself in each of this job-hunting situations and say how likely it is you would act in the described way.
- If you never job-hunted before, try to answer according to how you would try to find a job.
- Please respond to these statements by telling me the number on the sheet (which reflects how likely it is you would do the things described) provided. Please do not skip any statements. Use the key at the top of the document for your responses:

If you are unsure decide on the basis of what number mostly describes your agreement or disagreement.

1. Means very unlikely
2. Somewhat unlikely
3. Slightly unlikely
4. Slightly likely
5. Somewhat Likely
6. Means Very likely

Questions: Just say that they should answer to whatever THEY understand, // There is no right and wrong // If you are unsure decide on the basis of what number mostly describes your agreement or disagreement.

Use tact to encourage the participant to reflect sufficiently.

➔ It is important that you think shortly about any question and answer openly...

Traps / No Go's: No explaining, Just say that they should answer to whatever THEY understand, there is no right and wrong...

10 min Break?**RSES – Self report**

This is a list of statements dealing with your general feelings about yourself. If you strongly agree, circle **1**. If you agree with the statement, circle **2**. If you disagree, circle **3**. If you strongly disagree, circle **4**.

Please circle only one number for each statement and do not skip any items. If you change your mind erase your first mark carefully.

→ Again: If you are unsure decide on the basis of what number mostly describes your agreement or disagreement.

*Traps / No Go's: No explaining, Just say that they should answer to whatever **THEY** understand*

WAIS – III Spatial Span

Place the Spatial-Span Board on the table with the cube-numbers facing me and the board centered at the participants midline so that s/he can easily reach the cubes.

- Write down while they tip the blocks (see afterwards if it was right).

Guideline Briefing:**Forward**

→ Say: Now I want you to do exactly what I do. Touch the blocks I touch, in the same order.

Tap out the sequence for Trial 1 of Spatial Span Forward Item 1 (see sheet) at a rate of one cube per second.

Continue administering the items for Spatial Span Forward, using the sequences below. Record the responses.

If the criterion for discontinuing (score of 0 on both trials of any item, administer both trials of each item even if trial one is passed) is met, or if all forward items have been administered, proceed with Spatial Span backwards

Backward

→ Say: Now I am going to touch some more blocks. This time when I stop, I want you to touch the blocks backward, in the reverse order of mine. For example if I touch this block (block3), then this one (block5), what would you do?

If correct: That's right. Here's the next one. Remember to touch them in the reverse order.

If incorrect:

No, I touched this one (3), then this one (5), so, to do it in reverse, you touch this one (5), then this one (3).

Now let's try another one. If I touch this one (block9) , then this one (block1), what would you do?

Whether the participant succeeds or fails on the second example, proceed to item 1.

SCL-90-R (self report):

Informed positive manner addressing relevance of the assessment, redundancy

→ This is a list of problems people sometimes have. Please read each one carefully, and blacken the circle that describes how much that problem has distressed you during the past 7 days including today.

Blacken the circle for only one number for each problem and do not skip any items. If you change your mind erase your first mark carefully.

Do you have any questions?

0	-	Not at all
1	-	A little bit
2	-	Moderately
3	-	Quite a Bit
4	-	Extremely

- Do not over- nor under emphasise. Questions: Just say that they should circle whatever THEY understand, there is no right and wrong...

Traps / No Go's:

Not hurried, not doubting validity

BHS interview :

→ This is an interview.

- Here is a copy for you so that you can follow along as I read.

→ Say: On the questionnaire there are statements. I will read each statement one by one. After I read the statement, I want you to tell me if it is TRUE or FALSE for you. Answer the statements in terms of how you have felt during the past week, including today. That includes right now.

Please consider each item carefully before answering it. If you are unsure decide on the basis of whether or not the statement mostly describes you.

→ Read: 1. I look forward with hope and enthusiasm.

Now, is this statement TRUE or FALSE for you?

Stop asking if it is TRUE or FALSE, when the participant understands the instructions.

- Do not explain items (No right or wrong, just what they understand)

If the participant starts to answer questions ahead of the examiner reading them, let proceed if s/he seems reflected, alert and knowledgeable. Use tact to encourage the participant to reflect sufficiently.

ISMIS Self report

The next questionnaire is about assumptions some people have about mental illness. For each question, please mark whether you strongly disagree (1), disagree (2), agree (3), or strongly agree (4). Again please do not skip any items and just circle one number.

Questions and traps as above

SCQ self-report

This (last questionnaire) is a test about discrimination. You will be asked how much you would agree or disagree with each of the following statements.

It says IF I HAD A MENTAL ILLNESS... but just answer how YOU would answer the questions.

Do not explain Items (No right or wrong, just what they understand)

CPT-IP (Computerised):

Have PC prepaired.

Guidline Briefing:

This task is a computer based task. It is about attention and reaction. You will be asked to react when identical pairs of numbers appear in a row.

Ask participant to sit in front of screen

Start-up – Enter Name D.o.B. and ID number

First screen: For the next 10 minutes...

- ➔ Read the directions aloud to the participant. (all screens) (proceed: any key except Enter)
- ➔ Ask if participant understood the instructions. If not repeat the directions in a simple manner.
If understood
- ➔ Hand participant the mouse (Participant approx. 60 cm from screen away). Any key (except Enter to start)
- ➔ Start four digit number test, any key (except Enter to start)
- ➔ Thank you screen. Press Esc to complete test administration. Data will be encrypted and saved.

Assure respondent of confidentiality and thank for the effort.

Remaining Questions?: Do you have any remaining questions?

Gratitude, reimbursement and leave taking:

Thank you for participating in this. And I **thank you for helping me with this study.**

Give reimbursement.

7. Do you have a post-secondary (tertiary) school qualification? (e.g. university or polytech)

no
 yes

→ _____
 (Please state your highest qualification)

8. Did you complete a vocational training or an apprenticeship?

no
 yes

→ If yes please state what kind of vocational education you have.

 (Tick the circle which applies to you.)

9. Are you currently employed

no
 yes

→ If you are in employment, which one of these are you?
 (Tick the circle which applies to you.)

voluntary worker
 a paid employee
 working with a support program (e.g. work ordered day)
 self-employed
 other (please state) → _____

And for how long have you been working in your current job?

		years

		months

10. Do you receive unemployment benefits or other financial support (e.g. health and disability related benefits)?

no
 yes

→ If you receive benefits, which one of these do you receive?

Unemployment Benefit
 Invalid's Benefit
 Disability Benefit
 Sickness Benefit
 Emergency Benefit

(Tick the circle which applies to you.)

11. Do you have former work experience

no
 yes

→ If yes, which one of these were you?
 (Tick the circle which applies to you.)

voluntary worker
 a paid employee
 working with a support program (e.g. work ordered day)
 self-employed
 other (please state) → _____

And how many years of work experience do you have?

		years

		months

**Vocational Thoughts and Readiness – Medical Records Health Information
Data Collection Sheet**

Diagnosis

DSM-IV-TR: _____

Subtype: _____

Other Criteria (Diagnosis) Met By This Participant: _____

Symptoms Present: _____

Course

First Diagnosed: _____

First Hospital Admission: _____

Duration: _____

Treatment

Psychopharmacological Treatment:

Current Regimen:

Drug Name	Dose	Route/Medium?	Date Started

Former Psychopharmacological Treatment (If Changed in Last 2 Months):

Drug Name	Dose	Route/Medium?	Date Started

Psychosocial treatment within the last 6 months:

Start Date: _____ Duration: _____

Received Vocation Related Psychosocial Interventions in the last 6 months:
True / False

Start Date: _____ Duration: _____

Start Date: _____ Duration: _____

Presence of:

Intellectual Disability: YES / NO

Traumatic Brain Injury: YES / NO

Additional Information: _____

Stigma Consciousness Questionnaire for Mental Illness

Imagine you have mental health problems. How much you think you would agree or disagree with each of the following statements. **Circle the number** that indicates how much you agree or disagree.

		1	2	3	4	5	6	7	
	Strongly disagree								Strongly agree
IF I HAD A MENTALL ILLNESS, . . .									
1. . . . stereotypes about mental illness would not affect me personally.		1	2	3	4	5	6	7	
2. . . . I would never worry that my behaviours will be viewed as stereotypical of my mental illness		1	2	3	4	5	6	7	
3. . . . I would feel like healthy people interpret all my behaviors in terms of the fact that I have a mental illness.		1	2	3	4	5	6	7	
4. . . . most healthy people do not judge people with a mental illness on the basis of this illness.		1	2	3	4	5	6	7	
5. . . . my having a mental illness would not influence how healthy people interact with me.		1	2	3	4	5	6	7	
6. . . . I would almost never think about my mental illness when I interact with people.		1	2	3	4	5	6	7	
7. . . . my having a mental illness would not influence how others act with me.		1	2	3	4	5	6	7	
8. Most healthy people have a lot more negative thoughts about mental illness than they actually express.		1	2	3	4	5	6	7	
9. I often think that healthy people are often unfairly accused of discriminating against those with a mental illness.		1	2	3	4	5	6	7	
10. Most healthy People have a problem viewing those with a mental illness as equals.		1	2	3	4	5	6	7	
	Strongly disagree								Strongly agree

Appendix D

Model Directionality

Besides the evidence and theoretical assumption based directional considerations, there is a more overarching line of argument that backs up the assumed direction. To provide a broader basis and enroot the approach in humanity-specific theories, an excursion to a more phylogenic way of reasoning is imposed.

Ever since individual learning has crystallized as selectively advantageous over instinct-determined behaviour in humans, it provides exponentially increased adaptability to environmental states and developments but requires social context and security in childhood years. Individuals are predisposed to adapt to environmental stimuli rather than being mainly genetically determined. In other words, in the context of ‘survival of the fittest’ the ability to individually adapt to environmental challenges generates a “multi-fit” organism and increases selective advantages. The ability to individually learn and the accompanying independence of genetic mutation and change in instinct behaviour require a secure environment for first learning experiences which are provided through social structures. The ability to individually learn and reduce dependence of instinct behaviour suggests that behaviour is adaptive to the environment. It therefore is, in the context of directionality, more reasonable to assume that external, environmental factors (including developmental environment) influence internal attributes and mechanisms rather than the other way round. For this research it means that the environmental factor is the vocational structure in the surroundings, which, perceived by the individual, influences attitudes and person-related characteristics such as self-esteem, hope and experienced symptom distress in a directional manner. These person-related characteristics are, in accordance with former research (Yanos et al., 2008; Yanos et al., 2010b) associated with recovery. Therefore, the direction inverted to the one proposed (the perception of vocational environment and related career thoughts influence factors related to recovery) that self-esteem, hope and distress causally predetermine the perception of

vocational environment and subsequent cognitions appears unlikely. At first glance it may seem reasonable to argue that hope and self-esteem influence the outlook on the vocational environment, however, when considering an actual causal relationship in scientific scrutiny, the question for the cause of self-esteem, hope and distress will be difficult to answer without considering environmental causes. The attempt to do so would most likely result in a scientifically insufficient 'skyhook' (not supported by afferent causes) argument. Conversely, the cause for the vocational environment (and its related experiences) is provided by historically developed structures in society. It is, however, important to stress that this causal directionality is likely a simplification of a multi-causal, probably reciprocal dynamic. This simplification is currently (regarding the presently available scientific methods of researching thought content) necessary to assess the overall concept of vocational cognitions in the context of recovery in a quantitative, evidence based manner.

Finally, relating to the selective advantages that individual learning has in humans over instinct behaviour, humans are foremost social beings living in an industrialized society: to work means to participate in the public life and is the established paradigm for contributing to society. Individuals, who are prohibited or in no position to do so, are more likely to experience distress, low self-esteem and hopelessness. The appraisal that work constitutes to a large extent how individuals relate to society allocates the direction of the perception of the work environment as more likely to be causal of individual, internal attributes than vice versa.

In summary, the arguments provided and the aforementioned empirical evidence and theoretical assumptions suggest that the likely direction of the assessed associations goes from the environment towards personal attributes, affect and distress.

Appendix E

Table 24

Dosage Distribution Medical Treatment

Fraction Of Maximum Recomended Dose:	SSRI	Tricyclic Antidep.	Atypical Antipsy.	Typical Antipsy.	Anxiolytic Med.	Lithium	Anti- convulsant Med.	MAOI
0,001to0,199	1	1	23	3	8	1	3	0
0,200to0,399	11	2	12	4	7	2	8	2
0,400to0,599	7	3	16	5	3	1	4	1
0,6to0,799	4	2	9	3	3	0	5	1
0,8.to0,999	4	0	1	0	1	1	0	0
*1,0to1,199	2	1	9	2	3	1	0	0
*1,2to1,399	5	0	4	2	0	0	0	0
*1,4to1,599	0	1	3	0	0	0	0	0
*2,0	0	0	1	0	2	0	0	0

Note. *M* fraction of maximum dose overall= 0.53, *SD*=0.40, Antidep. = Antidepressant, Antipsy. = Antipsychotic, MAOI = Monoamine Oxidase Inhibitor, Med. = Medication, SSRI = Selective Serotonin Reuptake Inhibitor.

*Numbers higher than one indicate dosages exceeding recommended maximum dose (MIMS, 2009). This may occur when two different medications of the same type are prescribed for one participant. In some cases however the recommended maximum dose was exceeded.

Table 25

Inter-Correlations of Career Thought Indices Subscales

	CDP Certainty (Itm1-3)	CDP Decided- ness (Decid)	CDP Comfort (Com)	CDP Self-Clarity (SC)	CDP Knowledge of Occupations (KoO)	CDP Decisive -ness (Decis)	CDP Choice Importance (CI)	CTI Total	CTI Decision Making Confusion (DMC)	CTI Commitment Anxiety (CA)	CTI External Conflict (EC)
CDP-Decid	.96**										
CDP-Com	.78**	.67**									
CDP-SC	.23*	.25**	.14								
CDP-KoO	.02	.04	-.02	.36**							
CDP-Decis	.44**	.42**	.37**	.35**	.16						
CDP-CI	.25**	.28**	.03	.24*	.22*	.13					
CTI-Total	-.45**	-.487**	-.32**	-.46**	-.37**	-.52**	-.35**				
CTI-DMC	-.59**	-.60**	-.38**	-.41**	-.35**	-.46**	-.48**	.87**			
CTI-CA	-.29**	-.31**	-.25*	-.44**	-.26**	-.39**	-.04	.77**	.54**		
CTI-EC	-.10	-.15	-.09	-.20*	-.22*	-.23*	.00	.53**	.31**	.42**	
AJHS-Total	.20*	.25**	.23*	.26**	.04	.40**	.13	-	-.33**	-.41**	-.23*

Note.. * = $p < .05$, ** = $p < .001$, Spearman Correlations. AJHS = Assertive Job-Hunting Scale, CDP = Career Decision Profile. CTI = Career Thoughts Inventory.

Table 26

Bivariate Correlations of Career Thought Indices Subscales

	SCL GSI	SCL SOM	SCL OC	SCL IS	SCL DEP	SCL ANX	SCL HOS	SCL PHO	SCL PAR	SCL PSYCH	WMS Total	WMS Forw.	WMS Backw.	CPT-IP d'	CPT-IP β
CDP - Certainty (Itm123)	-.53**	-.29**	-.49**	-.47**	-.51**	-.49**	-.28**	-.40**	-.32**	-.45**	-.02	.08	-.08	-.12	.06
CDP-Decidedness	-.54**	-.32**	-.48**	-.46**	-.53**	-.49**	-.33**	-.43**	-.37**	-.48**	.03	.10	-.03	-.08	.08
CDP-Comfort	-.49**	-.31**	-.43**	-.39**	-.44**	-.51**	-.35**	-.34**	-.32**	-.37**	-.19*	-.13	-.20*	-.24*	.08
CDP-Self-Clarity	-.16	-.15	-.21*	-.06	-.13	-.12	-.20*	-.19	.00	-.16	.08	.04	.09	.12	.05
CDP – Knowledge Occupations	-.08	-.06	-.10	-.08	-.05	-.07	-.01	-.25**	-.06	-.05	.15	.11	.14	.18	.01
CDP-Decisiveness	-.36**	-.26**	-.42**	-.38**	-.37**	-.30**	-.13	-.16	-.18	-.26**	-.04	.03	-.06	-.04	-.01
CDP-Choice Importance	.00	.10	-.08	.00	.00	.077	.01	-.07	-.01	-.06	.17	.14	.15	.19*	-.28**
CTI-Total	.42**	.31**	.46**	.37**	.38**	.36**	.22*	.41**	.27**	.37**	-.08	-.06	-.08	-.09	-.03
CTI-Decision Making Confusion	.37**	.21*	.41**	.35**	.36**	.32**	.17	.35**	.24*	.34**	-.09	-.08	-.08	-.13	.01
CTI-Commitment Anxiety	.34**	.26**	.41**	.27**	.30**	.31**	.21*	.41**	.14	.23*	.01	.02	.00	.02	-.16
CTI-External Conflict	.28**	.34**	.30**	.16	.12	.30**	.24*	.29**	.27**	.22*	-.21*	-.16	-.23*	-.23*	-.13
AJHS Total	-.31**	-.20*	-.27**	-.33**	-.29**	-.22*	-.28**	-.18	-.22*	-.20*	-.08	-.11	-.03	-.15	-.07

Note. * = $p < .05$, ** = $p < .001$, Spearman Correlations. AJHS = Assertive Job-Hunting Scale, ANX = Anxiety, CDP = Career Decision Profile, CPT = Continues Performance Tests- Identical Pairs, CTI = Career Thoughts Inventory, DEP = Depression, GSI = Global Severity Index, HOS = Hostility, IS = Interpersonal Sensitivity, OC = Obsessive Compulsive, PAR = Paranoid Ideation, PHO = Phobic Anxiety, PSYCH = Psychoticism, SCL = Symptom Check List 90, SOM = Somatisation, WMS = Wechsler Memory Scale Spatial Span.

Table 26 (continued)

	ISMI Total	ISMI AL	ISMI SE	ISMI DE	ISMI SW	ISMI SR	SCQ- Total	BHS Total	RSES Total	RAS Total	RAS- GSO	RAS- PCH	RAS- RoO	RAS- NDS	RAS- WAH	Age	Work Expe- rience	Time in Formal Education
CDP - Certainty (Itm123)	-.39**	-.33**	-.26**	-.21*	-.43**	.30**	-.32**	-.66**	.48**	.66**	.54**	.62**	.48**	.45**	.34**	.22*	.25*	-.04
CDP-Decidedn.	-.44**	-.35**	-.31**	-.24*	-.47**	.33**	-.34**	-.69**	.47**	.66**	.52**	.58**	.48**	.50**	.35**	.17	.24*	-.05
CDP-Comfort	-.31**	-.27**	-.20*	-.11	-.41**	.24*	-.27**	-.55**	.46**	.59**	.45**	.58**	.41**	.35**	.33**	.31**	.20*	-.08
CDP-Self-Clar.	-.16	-.21*	-.25**	-.01	-.14	.03	.00	-.21*	.14	.22*	.25**	.23*	.08	.25**	.22*	.15	.10	.10
CDP – Knowl. o. Occupations	-.25**	-.10	-.32**	-.11	-.27**	.04	-.01	-.06	.04	-.04	.03	-.06	.13	-.01	.07	-.02	.18	.21*
CDP-Decisiven.	-.39**	-.38**	-.33**	-.16	-.42**	.24*	-.11	-.47**	.43**	.43**	.41**	.50**	.16	.28**	.31**	.13	.14	-.02
CDP-Choice Importance	-.10	-.01	-.15	-.02	-.11	.13	.08	-.18	.07	.13	.27**	.08	.26**	.07	.14	.28**	.06	.29**
CTI-Total	.58**	.46**	.55**	.41**	.52**	-.23*	.21*	.53**	-.36**	-.38**	-.42**	-.37**	-.27**	-.31**	-.21*	-.10	-.26**	-.10
CTI-Decision Making Conf.	.47**	.35**	.49**	.29**	.41**	-.23*	.21*	.62**	-.38**	-.45**	-.52**	-.43**	-.34**	-.32**	-.21*	-.06	-.27**	-.21*
CTI-Commitm. Anxiety	.40**	.38**	.36**	.29**	.35**	-.13	.31**	.33**	-.27**	-.27**	-.26**	-.29**	-.09	-.29**	-.13	-.16	-.16	.07
CTI-External Conflict	.37**	.23*	.41**	.30**	.38**	-.12	.11	.17	-.17	-.12	-.03	-.05	-.15	-.15	-.09	-.05	-.04	.02
AJHS Total	-.41**	-.38**	-.21*	-.27**	-.42**	.17	-.16	-.42**	.26**	.40**	.38**	.38**	.32**	.29**	.33**	.03	.05	-.06

Note. * = $p < .05$, ** = $p < .001$, Spearman Correlations, AJHS = Assertive Job-Hunting Scale, AL = Alienation, BHS = Beck Hopelessness Scale, CDP = Career Decision Profile. CTI = Career Thoughts Inventory. DE = Discrimination Experience, GSO = Goal and Success Orientation, ISMI = Internalises Stigma of Mental Illness, NDS = Not Dominated by Symptoms, PCH = Personal Confidence and Hope, RAS = Recovery Assessment Scale, RoO = Reliance on Others, RSES = Rosenberg Self-Esteem Scale, SCQ = Stigma Consciousness Questionnaire, SE = Stereotype Endorsement, SR = Stigma Resistance, SW = Social Withdrawal, WAH = Willingness to Ask for Help.