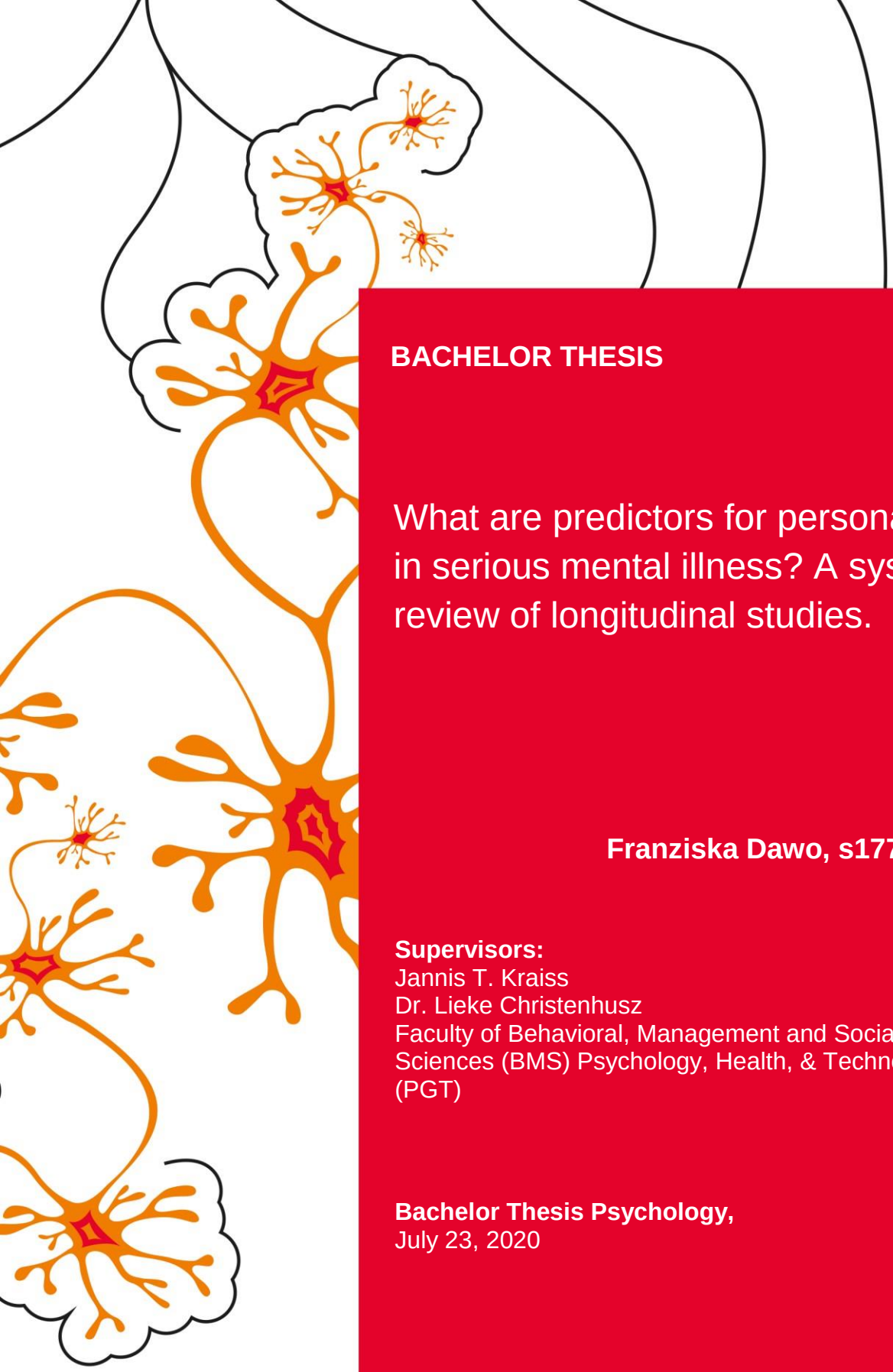

BACHELOR THESIS

What are predictors for personal recovery in serious mental illness? A systematic review of longitudinal studies.

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Abstract

Background. Serious mental illnesses (SMI) increase over time and are associated with a substantial burden for individuals. Therefore, new forms of treatment in the field of Psychology had to evolve in order to fit the population's needs and especially adjust to the concept of personal recovery. Personal recovery is a concept that was already used as a theoretical ground for research purposes and is an important outcome for people with SMI.

Objective. The aim of this systematic review was to identify determinants of personal recovery, to describe the characteristics of these studies, and examine what the evidence from longitudinal studies shows regarding determinants of personal recovery. Therefore, a systematic review was conducted aimed at analyzing the determinants of personal recovery within the studies.

Method. A quantitative narrative review was obtained with a large pool of articles that are in line with personal recovery. The databases Web of Science (WoS), PubMed, and PsycINFO were searched for this review. The time period included all suitable articles from 2010 until 2020. In order to be suitable for this review, a minimum of two measurement points and results measured through personal recovery assessment scales had to be included. All data that were predictive for personal recovery were extracted from the studies.

Results. From a large pool of studies, 8 final studies were included within this review. Characteristics of the included studies showed very different perspectives in terms of culture and country. However, methodological characteristics had similar perspectives in terms of research methods as tests as the recovery assessment scale (RAS) or the questionnaire of personal recovery (QPR). Several determinants of personal recovery were identified, such as hope, optimism, motivation to heal, or depression. The importance of therapeutic alliance, metacognition, and the information about psychosocial influences gave new insights into this topic.

Discussion. The majority of studies were about schizophrenia or schizoaffective disorder in terms of severe mental illness. Similar to prior research, metacognition and the importance of therapeutic alliance was confirmed to be important. The importance of negative symptoms and their effects on personal recovery also showed possible indications for improving future research through designing new intervention studies that cover these topics.

Conclusion. The current study gave insights into new findings as to the importance of therapeutic alliance or thought control. Those results mean for this field that there are predictors of personal recovery which need to be strengthened when aiming to improve personal recovery. In order to improve the clinical health care system and to investigate stronger relationships of personal recovery and SMIs, future research might include new psychological interventions that are studied in contrast to the usual care in order to evolve within this field.

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Introduction

(Serious) mental illness

The prevalence of mental disorders increased and mental health issues therefore achieved more attention and treatment options compared to the past. This resulted in a recent increase in psychological distress and a growing interest in mental health over time (Lépine & Briley, 2011). This growing demand asks for a different focus of treatment in order to better fit the population's needs and developing a way that adjusts to the concept of personal recovery. Regarding serious mental illness (SMI) society also experiences a solidification of mental problems and distress (Lépine & Briley, 2011). This also means that chronic mental diseases become more common (Galea, Uddin, & Koenen, 2011). Mental disorders can be defined in many ways, but most of the time it implies that an individual finds itself in a condition that is associated with great distress, disadvantages or any kind of disabilities (Spitzer, Endicott & Frachi, 2018). Delespaul (2013) defines SMI as 'a psychiatric disorder with severe functional problems, where the constraints are causal and consequential and which are not temporary, and there is a need for coordinated professional care' (Delespaul, 2013).

The burden of serious mental illnesses

Suffering from serious mental illnesses signifies stress for the individual itself and also for their social and work-related environment (Lehman, 1996). Especially primary caregivers, the social environment of patients with a chronic mental disorder, experience a high level of burden as they also suffer from distress and lower well-being (Möller-Leimkühler & Wiesheu, 2012). This is reflected in the difficulties of providing effective care for the person who suffers from serious mental illnesses, as they need to be able to cope with a considerably increased

amount of stress and stressors (Aylaz & Yildiz, 2018). Furthermore, patients who suffered from SMIs died on average twenty-five years earlier when comparing them to the general population in the United States (Kilbourne et al., 2009). Also with a view on the mortality rates, it was found that (chronic) mental disorders belong to one of the most significant reasons for death worldwide (Walker, McGee & Druss, 2015). The demographic changes to an ageing of the world's population is also increasing the number of individuals with chronic (mental) disorders (Vos et al., 2015). As the research of Deligianni et al., (2012) has shown, medical illnesses can lead to an increase in depression and this effect is also found in the presence of mental diseases (Deligianni, Vikelis & Mitsikostas, 2012). This means that psychological problems often are comorbid with other problems such as depression or anxiety disorders. Therefore, the quality of life is often much lower for people with a chronic mental disorder when comparing them to people who do not suffer from those problems. The majority of people with chronic mental disorders experience job-related difficulties (Bowden, 2005). Functional and work disabilities are a burden as they lead to financial problems and can influence the quality of life in negative ways as well (Rytsälä et al., 2005).

Personal recovery

Due to the severe and often chronic course of SMIs, the concept of personal recovery is receiving increased attention in the field of mental health care. Personal recovery with regard to mental illness refers to adapting a patient's values, attitudes, feelings, goals, and skills in order to live a fulfilling life despite the disadvantages which are caused by the illness itself (Anthony, 1993). It involves 'listening to and acting on what the individuals themselves say' (Slade, 2009). In order to reach personal recovery it needs more than only diminishing complaints, as in contrast the regular treatments usually are only aiming at diminishing psychopathological symptoms (van Straten et al., 2010). Personal recovery is achieved when patients do not longer experience residual symptoms after apparently successful treatment and therefore remain free from psychopathological symptoms while psychological well-being is present (Fava & Visani, 2008; Ryff, 2014). Personal recovery is about recovering from the illness itself and all factors which contribute around it as social stigma and exclusion (Anthony, 1993). It is then to be achieved when patients experience significant improvements in their quality of life while being able to move on with their life and be able to cope and live with the mental disorder (Slade, 2009).

Personal recovery as a conceptual framework

Leamy et al. (2011) undertook at first a systematic review about personal recovery from studies that were available at that time, while then using a modified narrative synthesis to develop a conceptual framework of personal recovery. Within this framework, the concepts are interconnected with each other to explain what personal recovery means for people with

mental illness. The approach used in this study was divided into three stages of synthesis. Those three stages focused on 1. developing a synthesis, 2. exploring the relationships of the studies, and 3. assessing how robust the synthesis was (Leamy et al., 2011). The conceptual framework of recovery was built on five superordinate categories which include: values, beliefs about recovery, recovery-promoting attitudes of staff, constituent processes of recovery, and stages of recovery (Leamy et al., 2011). This conceptual framework regarding personal recovery reflects three superior clusters: traits of the recovery course, recovery process, and recovery levels (Leamy et al., 2011). In those, each cluster is associated with key elements regarding clinical psychology. According to Leamy et al. (2011), the most important key processes of recovery from mental illness can be summarized in the 'CHIME' framework which implies: connectedness, hope, optimism about the future, identity, meaning in life and empowerment. Other research on personal recovery often connects to the CHIME framework as this stands for successfully worked out theoretical framework (Shanks et al., 2013; Williams et al., 2012). Additionally, there are several characteristics of personal recovery as being described as an active process or as a 'continuing journey' which the person actively has to take (Slade, 2009)

A study by Bird et al., (2014) suggests that personal recovery can be taken into consideration when searching for a theoretical basis for clinical research purposes. This review mentions personal recovery as a 'primary orientation' in mental health services. They describe it as a conceptual framework that shows high levels of relevance and validity when comparing models with each other. Within this study, factors that played a key role were compared and lastly, personal recovery was approved as a well-functioning theoretical framework. However, further research regarding this concept would be beneficial in order to strengthen personal recovery as a justifiable theoretical ground (Bird et al., 2014).

Measuring personal recovery is important in psychology since mental health systems increasingly aimed to support recovery (Shanks et al., 2013). The most common measurements of personal recovery are the Illness Management and Recovery (IMR) scale, the Recovery Process Inventory (RPI), the Recovery Assessment Scale (RAS), the Stages of Recovery Instrument (STORI), and the Questionnaire about the Process of Recovery (QPR) (Shanks et al., 2013). Within those measurements, the RAS is most commonly used and is followed by the QPR, which remains in high popularity when it comes to measuring personal recovery. The QPR is also by now the only questionnaire which covers all dimensions of the CHIME framework, whereby this makes it a valuable tool in measuring personal recovery (Law et al., 2014). The psychometric properties of the RAS include good results about internal consistency, interrater reliability and test-retest reliability, what makes it the most commonly used measurement of personal recovery (Salzer & Brusilovskiy, 2014). Further studies also showed that recovery measurements often focus on a specific illness as for example depression, psychosis, or schizophrenia. In those cases, certain measurement methods are used to achieve personal recovery and improve SMIs as for example through

self-rating questionnaires. However, as for example regarding schizophrenia, the RAS was judged as the most beneficial because of its good psychometric properties (Cavelti et al. 2014; Schanks et al., 2013).

Determinants of Personal Recovery

To understand which processes are related to personal recovery in mental disorders, there are already reviews and meta-analyses available. One review suggests that *social factors* can have a significant influence on personal recovery and that it can either be beneficial or distracting in the process of recovery (Tew et al., 2012). Social factors that are central to recovery include *control over one's own life and empowerment, rebuilding positive identities, and connectedness*. With regard to SMIs, it is relevant to pay attention to the social factors and their influence while not only focusing on the individual alone in order to achieve maximal results in personal recovery (Tew et al., 2012). Another review mentions that personal recovery can be connected to three main themes which imply: *recovery as participating in social and meaningful activities, personal recovery as an internal process, and recovery as a segment of others* (Salzmann-Erikson, 2013). All three main topics imply that determinants of personal recovery include focusing on individual needs, conveying hope, and supporting the overall recovery progress. This again underlines the already previously mentioned social factor which is important in the process of personal recovery (Tew et al., 2012; Salzmann-Erikson, 2013). An additional review that laid its focus on personal recovery from depression mentioned that group membership and higher levels of social support are positively associated with personal recovery (Richardson & Barkham, 2020).

Furthermore, a recent meta-analysis of Van Eck et al. (2018), summarized determinants which connect to personal recovery in different symptom domains regarding patients with schizophrenia. Within this study, it was mentioned that personal recovery is associated with: *positive, negative, affective symptoms, and general functioning*. The findings suggest that personal and clinical recovery are relatively distinct processes and that certain symptoms can be specifically associated with personal recovery (Van Eck et al., 2018). In addition, reviews were conducted for determinants of sub-parts of personal recovery, as for example the *concept of hope*. Schrank (2012) conducted a narrative review of studies examining determinants and predictors of hope. They found that there are many determinants connected to hope as for example positive associations with recovery, self-esteem, self-efficacy, or empowerment. This finding coincides with previously mentioned studies and includes concepts such as hope, which reflects internal mechanisms that are strengthened through social support, which also seems to be an important predictor regarding personal recovery.

The current study

In sum, previous studies summarized several concepts and determinants that are associated with personal recovery. However, there remains a research gap on this topic. Some reviews and meta-analyses mainly focused on a specific group of patients, as for example depression (Cuijpers et al., 2014) or schizophrenia (Van Eck et al., 2018). Although this is valuable information, it is relevant to find out whether there is a difference regarding determinants of personal recovery in a wider pool of patient groups and for personal recovery as a general concept instead of sub-parts of personal recovery.

This review will contribute to the field of psychology in order to offer a broader view of the concept of personal recovery and include a broader perspective on associations and determinants. This differentiates this review to the ones which were done previously and therefore implies a unique contribution to this field. Furthermore, this review focuses on longitudinal studies only which has not been done to that extent before and therefore distinguished from the recent findings. This will help to inform the clinical health care practice and the outcomes might lead to improved intervention developments. Information on personal recovery could, therefore, become a guideline to improving and developing interventions regarding SMIs. It might also inform practitioners already working with SMI patients on which determinants are associated with personal recovery and which factors are important to that.

Goal and Research Questions

This systematic review aims to identify determinants and connections which are associated with personal recovery regarding SMIs. We want to achieve a broader knowledge about what predicts personal recovery in the field of psychology in order to facilitate further research within this field and might lead to improving clinical health care systems. This review exerts systematic review techniques and a narrative review approach in order to answer two research questions that relate to personal recovery and SMIs. Those research questions include: (1) ‘What are the *characteristics* of the investigated studies regarding determinants of personal recovery?’, and (2) ‘What is the evidence from *longitudinal studies* regarding *predictors of personal recovery*?’.

Method

The current review has been conducted in accordance with the PRISMA guidelines for conducting systematic reviews and meta-analyses and has been pre-registered in PROSPERO, which is a database for the pre-registration for systematic review and meta-analyses.

Search strategy

In total there were three major databases searched for this review which comprises PubMed, PsycINFO, and Web of Science. Those databases included all relevant articles, reviews, expert papers, and research studies to gather information for this review. In addition to that, other prior reviews and meta-analyses were cross-checked to identify studies that were not found to that point before.

The overall literature search was done by the first supervisor of this thesis Jannis Kraiss (JK) in the context of a more general search on interventions and determinants of personal recovery. For this literature search, all databases were searched in March 2020 for the following terms in the abstract, title, relevant keywords and/or search terms which included for example term blocks as: mental illness/disorder; mental health; personal/subjective recovery; predictors/determinants of recovery; psychological disorders. For an overview of the complete search strategy, view the Appendix (Annex 1).

Selection of studies

Eligibility criteria:

Articles published in peer-reviewed journals were included that were available in full-text English, Dutch, or German. Regarding the study design, recent longitudinal studies were included that were published from 2010 until 2020 in order to compile the latest information regarding predictors and determinants of personal recovery. Limiting the search to studies to the recent ten years was also important for this study, as otherwise, it would not have been feasible to finish this thesis within the proposed time frame. The articles had to include a minimum of at least two measurement points in order to be included to assure it was a longitudinal study. Regarding outcomes, personal recovery must be either assessed with a self-reported measurement of the clients themselves or through other scales that focus on measuring personal recovery as for example the Recovery Assessment Scale (RAS) or the Questionnaire About the Process of Recovery (QPR) (Shanks et al., 2013). In addition, at least one determinant of personal

recovery must be included in the study (e.g. sociodemographic, clinical, psychological, social).

The sample within the articles needed to fulfill the requirements of a confirmed recent or past diagnosis of serious mental illness according to the ICD or DSM (Andrews, Slade, & Peters, 1999). These diagnoses included schizophrenia, schizoaffective disorder, psychosis, bipolar disorder, eating disorders, borderline personality disorders, and/or major depressive disorder.

Exclusion criteria:

The criteria of exclusion were: conference abstracts, dissertations, and book chapters. Studies that included one or more of those criteria were not included within this review because they either did not give enough detailed information or lacked appropriate study construction that was asked for this review. Another reason that they were excluded is that they are not peer-reviewed.

Data extraction

All titles, abstracts, and full texts were searched by JK and a list of those full-texts was then handed to the author of this thesis (FD). This list has then been screened for all studies that are relevant for the current thesis by FD. Data that was extracted in this review were distinguished into two main goals which included: (1) study characteristics *(SMI (N), age, portion of male participants*, *time horizon & number or assessments, Country, personal recovery measurements, predictors that were examined*). The first four data extractions covered standard information which could be from interest for this study. The characteristics and measurements were used to gather particular data that goes in line with answering the research question about what the characteristics of the studies are. In order to answer the question about the predictors of personal recovery, the second category is about (2) Outcomes (*main outcomes and conclusions from the studies, statistical findings (regression coefficients/P-values*)).

Results

The study selection process has been summarized in Figure 1. In total, there were n= 7,979 records identified through database searching (hits in brackets), which included Web of Science (2,164); PubMed (2,060); and PsycINFO (3,755). Additional records that were identified through other sources are n=35. Records after duplicates removed are n=5,910 and those were screened. Full-text articles assessed for eligibility are n=311.The total reasons for exclusion are n = 303 with reasons as: No PR outcome (n=108), No Clinical Sample (n=20), inappropriate design (n=133); conference abstracts of dissertations (14); Not English, Dutch or German (n=7); not available (n=8); or only focusing on one specific SMI (n=14). Studies that were included in the qualitative synthesis in total are n=8.

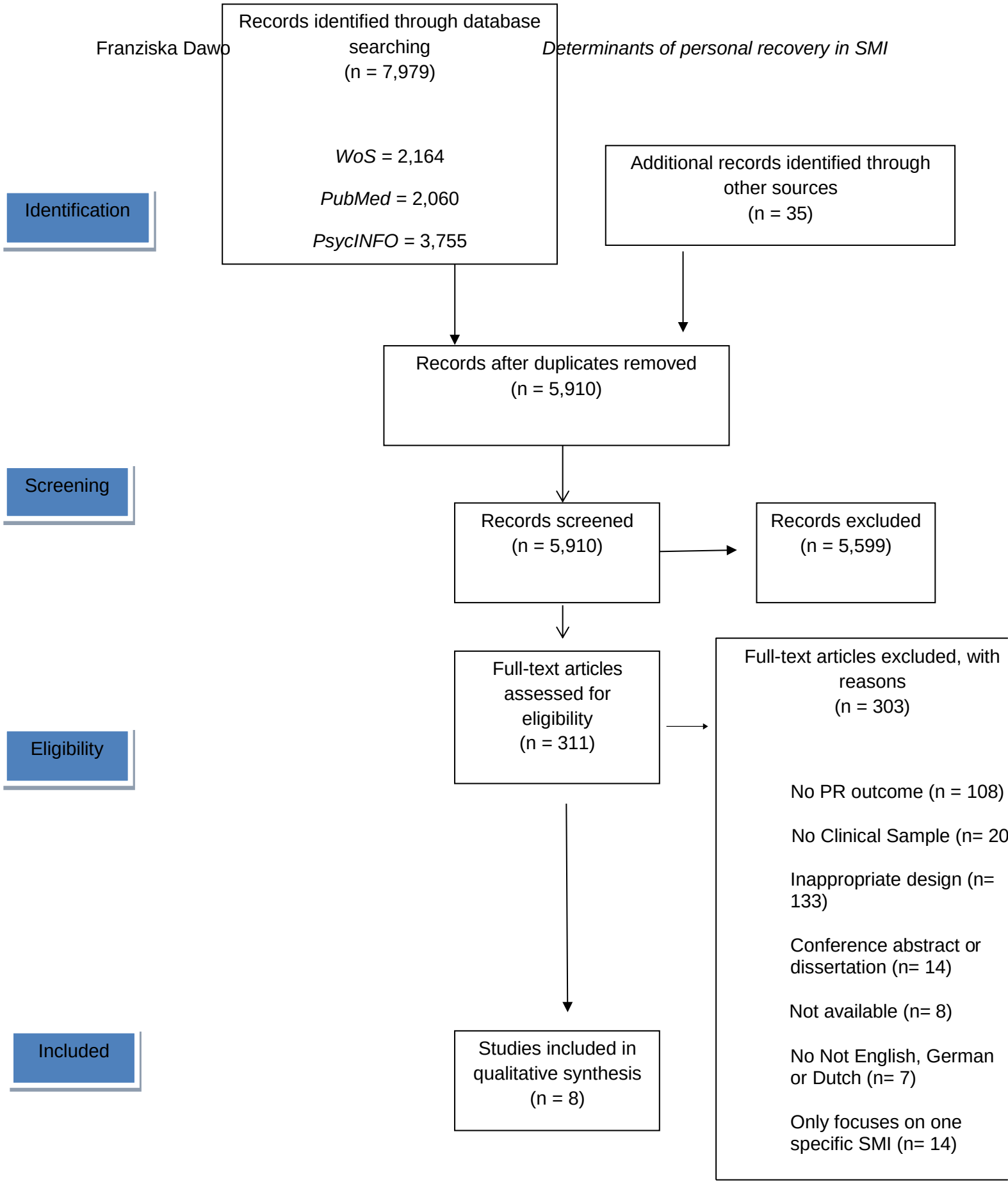

Fig. 1. Flow diagram of studies included in the systematic review.

Goal 1: Study and Sample Characteristics

An overview of the study and sample characteristics can be found in Table 1. The most frequently reported serious mental illness in terms of diagnosis is Schizophrenia or Schizoaffective disorder (n=7). The reason why this group of patients might describe the main population is because it is known to remain strongly chronic and the group of patients being most hard to handle. This makes it especially interesting for the concept of personal recovery. This is followed by persistent delusional disorder, acute psychotic disorder, depression, and/or PTSD (n=2). Age ranges from 16 to 70 years in all studies combined and most study participants with a SMI diagnosis are males. The portion of male participants is generally higher than the portion of female participants with an amount above 50% per study (n=6). Two studies had a number of participants below 50 (n=2), and three above 50 participants (n=50). Additional studies included more than 100 participants. The study with the maximal amount included 133 participants that suffer from a SMI (n=4) (Table 1).

Results about the characteristics of the studies in terms of time horizon, number of assessments, personal recovery measurements, and predictors of PR can also be viewed in Table 1. Most studies had two measurement points with either 6 months of testing after baseline or twelve months (n=4). Other studies were measured at baseline and after 10 sessions of treatment or two weeks later (2). Four studies had more than two measurement points, mostly at baseline, after a few weeks/months and again at some point after treatment (n=3). Within one study which had a duration of one year, participants were four times assessed (n=1). The most frequently used PR measurements included the RAS and QPR (n=8). Furthermore, the MHRM, IMR, and dispositional hope scale were frequently used as measurement of personal recovery (n=4). Often mentioned predictors that were examined included hope, positive and negative symptoms, recurring symptoms, goals, confidence, positive self-esteem and relying on others. Further predictors that also were examined were recovery promoting competencies, work alliances, willingness to ask for help, success orientation, social functioning, gender role, and identity. Individual studies also reported the importance of metacognitive beliefs, depressive symptoms, and evaluation of negative feelings as predictors in line with personal recovery (Table1).

Table 1

Study Characteristics of the Included Studies

Study	**Diagnosis** (N)	**Age** (mean, SD)	**Proportion of male participants** (%)	**Time Horizon** (Number of Assessments)	**Country**	**Personal Recovery Outcomes***	**Predictors** (measurements*)
Cavelti, Homan, & Vauth (2016)	Schizophrenia. Schizoaffective disorder (133)	18-65 *(44.48, 11.88)*	64.66 %	12 months (2)	Switzerland	RAS	Attachment style, insight, functioning, pos. & neg. symptoms (PANNS), special interests, metacognition, therapeutic alliance (STAR-P)
Hicks, Deane, & Crowe (2012)	Schizophrenia, Psychosis, Psychotic disorder (61)	26-63 *(45.65, 10.09)*	62.2 %	6 months (2)	Australia	RAS-Short, Dispositional Hope Scale	Work alliance (WAI-S), hope (DHS), time of procedure, social functioning, recurring symptoms
Jas & Wieling, (2018)	SMI residing in a high-secure psychiatric hospital (127)	21-69 *(42.2, 10.01)*	80.31 %	6 months (4)	Netherlands	QPR; RPRS	Recovery promoting competencies (QPR and RPRS)
Jørgensen et al., (2015)	Schizophrenia (101)	18-70 *(27.7, 8.4)*	46.53 %	12 months (2)	Denmark	RAS	Confidence, hope (DHS), pos. & neg. symptoms (PANNS), goal, success orientation, reliance on others, willingness to ask for help, no domination by symptoms
Law, Shryane, Bentall, & Morrison (2016)	Psychosis, Schizophrenia (110)	16-65 *(37.3, 11.62)*	69.09 %	6 months (2)	England	QPR; MHRM	Neg. emotions, pos. self-esteem (SERS), hopelessness (BHS), symptoms of functioning, gender role, identity

Lee, Bullock, & Hoy (2016)	PTSD (54)	21-68 *(45.9, 12.0)*	53.70 %	10 sessions (2)	United States	MHRM; IMR	Higher symptoms (PCL) a lower ability to care for themselves
Study	**SMI** (N)	**Age** (mean, SD)	**Proportion of male participants** (%)	**Time Horizon** (Number of Assessments)	**Country**	**Personal Recovery Outcomes***	**Predictors** (measurements*)
Lim et al., (2019)	Schizophrenia, Schizoaffective disorder (66)	21-65	45.45 %	2 weeks (2)	Singapore	QPR-15	Depressive symptoms (CDSS), affective symptoms, negative feeling evaluation, mood, hope (HHI)
Young et al., (2019)	SMI (50% Schizophrenia) (37)	15-29 *(22.44, 2.35)*	59.46 %	3 months ,after treatment ended (3)	United States	MHRM	Social factors (MSPSS), Hope (ASHS), optimism, goal setting

*__Note:__ Recovery Assessment Scale (RAS), Scale to Access the Therapeutic Relationship-Patient Version (STAR-P), Recovery Assessment Scale-Short (RAS-Short), Dispositional Hope Scale (DHS), The Working Alliance Inventory - Short Form (WAI-S), Questionnaire about the Process of Recovery (QPR), Recovery Promoting Relationship Scale (RPRS), Positive and Negative Symptom Scale (PANNS), Mental Health Recovery Measurement (MHRM), Beck Hopelessness Scale (BHS), Illness Management and Recovery (IMR), Symptoms of PTSD (PCL), Depressive Symptom Scale in Schizophrenia (CDSS), Herth Hope Index (HHI), Moral Competence Test (MCT), Multidimensional Scale of Perceived Social Support (MSPSS), Adult State Hope Scale (ASHS)

Goal 2: Evidence regarding predictors of personal recovery (Outcomes)

The main outcomes and conclusions which were derived from the studies can be viewed in Table 2. The study by Cavelti, Homan, & Vauth (2016) found that the self- rating of the patients about personal recovery at baseline was significantly positively associated with the willingness to ask for help in their further recovery process. They concluded that considering thought disorders in patients with schizophrenia and schizoaffective disorder during treatment increases PR. In this scenario, the therapeutic alliance is presented as a significant mediator between thought disorder and personal recovery. This is shown through clinical ratings (ISOS) (beta= 0.33, t= 4.21, p= .001) and patients recovery rating (RAS) (beta= 0.46, t= 5.71, p= .001). Another study by Hicks, Deane, & Crowe (2012) also found that hope (beta= 0.34, t= 3.01, p= .004) and alliance (beta= 0.19, t=2.76, p= .008) predict personal recovery. They conclude that there is a significant positive influence of therapeutic alliance and personal recovery, however, there is no definite conclusion to be drawn about their causality. The study by Jas & Wieling (2018) indicated that recovery promoting competencies are significantly associated with personal recovery (beta = 0.45, t = 8.4, $p< .001$). They also found that metacognition is a major predictor of PR. Furthermore, the study by Jørgensen et al., (2015) found that the total symptom score was related to lower scores of personal recovery (self-recovery). Within this study, the RAS had significant contributions with emotional discomfort (partial $r^2 = 0.18$, $p< .001$), excitement components which involve hostility, excitability and impulse control (partial $r^2 = 0.07$, $p< .001$), and with negative components (partial $r^2 = 0.11$, $p< .0001$). They describe recovery conclusively as a complex process which, however, is influenced by changes in subjective and objective domains as emotional discomfort, excitement components, and negative components. Another study by Law et al., (2016) indicated that subjective recovery scores are predicted by negative emotion (beta = -0.27, $p< .006$). They concluded that negative emotions and further psychosocial factors can be described as the strongest longitudinal predictors for personal recovery. Another study by Lee, Bullock, & Hoy (2016) found in patients who suffer from PTSD, that their PTSD symptomatology was correlated to their scores in well-being which were measured through the MHRM (r = 0.30, $p< .05$, and r = 0.31, $p< .05$ respectively). The study by Lim et al., (2019) found that the strongest predictors of personal recovery are depression (beta= -0.40, t= -3.29, $p= .002$) and negative symptoms (beta= -0.29, t= -2.64, $p= .011$). They also mentioned that the QPR-15 measurement was related to the CHIME personality recovery framework ($r^2 = 0.63$, $p< .001$) and that hopelessness and positive self-esteem are predictors of personal recovery. They also concluded that clinical recovery and PR are complementary. Lastly, the study by Young et al., (2019) found that self-esteem measurements are the strongest predictor for RAS scores (beta= 0.66, p< .05) which highlights self-esteem as an important determinant of PR. Furthermore, they also concluded

that self-stigma subscales, demographic variables, and self-worth also predict personal recovery.

There were some general commonalities between the studies about the importance of therapeutic alliance for patients with Schizophrenia when it comes to promoting personal recovery (n=2). Lower therapeutic alliance rating scores are negatively associated with personal recovery and therapeutic alliances were described as a mediator between thought disorder and PR. Recovery is a complex process, however, findings from included studies suggest that PR promoting competencies have a positive effect on personal recovery (n=2). Two studies also investigated the importance of metacognition and metacognitive beliefs as major predictors of personal recovery (n=2). Furthermore, the total symptom scores and subjective recovery scores influence determinants such as hopelessness, negative emotions, and self-esteem, what in return is associated with the process of personal recovery (n=3). Negative emotions and psychosocial factors are described as two of the main predictors of PR in multiple of the included studies (n=3).

Table 2

Outcomes and Conclusions of the Extracted Data

Study	**Main Outcomes** (statistical parameters)	**Conclusions**
Cavelti, Homan, & Vauth (2016)	Therapeutic alliance as mediator between thought disorder and recovery style, therapeutic alliance predictive for personal recovery through clinical rating (ISOS) (beta= 0.33, t= 4.21, p= .001), willingness to ask for help through patients rating (RAS) predictive for personal recovery (beta= 0.46, t= 5.71, p= .001)	A better therapeutic alliance at baseline was positively associated with a higher willingness to ask for help. Therapeutic alliance as mediator between thought disorder and PR can be approved.
Hicks, Deane, & Crowe (2012)	Hope (beta= 0.34, t= 3.01, p= .004) and alliance (beta= 0.19, t= 2.76, p= .008) predict personal recovery, but they also influence each other mutually, improvement of alliance positively influence gains in recovery	Hope and therapeutic alliance are the main determinants regarding personal recovery, however, no definite conclusions about causality of alliance and personal recovery
Jas & Wieling (2018)	Recovery promoting competencies significantly associated with PR (beta = 0.45, t = 8.4, p< .001), metacognition as major predictor of PR	Recovery promoting competencies are positively associated with PR
Jørgensen et al., (2015)	The RAS had significant contributions with emotional discomfort (partial r^2 = 0.18, p< .0001), excitement components (excitability, hostility, impulse control) (partial r^2 = 0.07, p< .001), and negative emotions (partial r^2 = .11, p< .0001)	Recovery is a complex process. Changes in subjective and objective elements of recovery influence each other, severity of symptoms was negatively correlated with personal recovery so as satisfaction with life, hope, knowledge and empowerment
Law et al., (2016)	Subjective recovery scores are predicted by negative emotion (beta = -0.27, p = .006)	Negative emotions and psychosocial factors as strongest longitudinal predictors of PR, rather than psychological symptoms and severity of symptoms
Lee, Bullock, & Hoy (2016)	PTSD symptomatology is significantly correlated with scores of PR and wellbeing through *MHRM (r = 0.30, p< .05 and r = 0.31, p< .05 respectively)	Trauma specific training is beneficial in reduction of trauma symptoms, however, further research is warranted

Study	**Main Outcomes** (statistical parameters)	**Conclusions**
Lim et al., (2019)	QPR-15 showed convergent validity with CHIME personality recovery framework (r^2 = 0.63, p< .001), hopelessness and positive self-esteem as important predictors of PR, strongest predictors for PR are depression (beta= -0.40, t= -3.29, p= .002) and negative symptoms (beta= -0.29, t= -2.64, p= .011)	The strongest predictors among the clinical factors are depressive symptoms and negative symptoms. Clinical factors are positively associated with personal recovery. Clinical recovery plays a role in personal recovery and therefore is a predictor of PR.
Young et al., (2019)	The self-esteem scale as the strongest predictor for RAS scores (beta= 0.66, p< .05)	Self-stigma subscales as significant predictor for personal recovery, self-worth is described as the strongest predictor for personal recovery, also important predictors include demographic variables and self-esteem

*Note: Recovery Assessment Scale (RAS), Mental Health Recovery Measure (MHRM), Questionnaire about the Process of Recovery (QPR-15), Moral Competence Test (MCT)

Discussion

In this narrative review, the literature was searched for longitudinal studies in order to examine the determinants of personal recovery in serious mental illnesses. Because the majority of articles were about Schizophrenia or Schizoaffective disorders, one might say that determinants were examined for this specific area of disorders. The overall goal was to find out which determinants are predictive for personal recovery in order to improve and facilitate further research in this specific field of psychology, identify knowledge gaps and inform clinical practice. With this review, it was aimed to achieve greater knowledge about predictors of personal recovery in SMIs, in which only recent articles from the last ten years have been investigated.

Summary of Findings

Because serious mental illnesses are associated with many obstacles regarding personal recovery, the burden to live a meaningful life despite the limitations caused by the illness is relatively large (Aylaz & Yildiz, 2018). As the study by Deligainny et al. (2012) already has revealed that chronic psychological problems often entangle and spread into further comorbid conditions as depression or anxiety, SMIs were defined as highly complex and unique in many ways. However, the results of the current study have indicated that one of the most common psychological disorders that come in line with it is suffering from schizophrenia, schizoaffective disorder, and/or psychosis. It is especially common that those psychological disorders can be defined as severe mental illnesses that remain chronically because it is not only defined by behavioral or psychological factors, there is also a lot of change in chemicals within the brain that remains the person to be caught within psychological distress that constantly evolves without special care (Benes & Beretta, 2001). With the exception of only one study of all the investigated ones, schizophrenia was the most noticeable psychological disorder. Only the study by Lee, Bullock, & Hoy (2016) investigated post-traumatic stress disorder (PTSD) regarding personal recovery, which also shows a very complex kind of disorder in which brain processes are highly affected as well (Yehouda & LeDoux, 2007).

Serious mental illnesses increased over time and arose in many different forms, which makes sufferers feel unable to heal without specific treatment (Lépine & Briley, 2011). As by reference to Delespaul (2013), it was already established that the factors are causal and consequential in which there is a high need for professional health care when wanting to

improve their mental health. This expectation can only be confirmed regarding the results of this review since determinants of personal recovery are often in line with causal factors that have an impact on it. This was shown in the study of Cavelti, Homan, & Vauth (2016), which implied that therapeutic alliances and changes within a relationship are predictive for increasing personal recovery. Similar outcomes were also shown in the study of Hicks, Deane, & Crowe (2012), which revealed the fact that changes in alliance are indeed predictive for personal recovery, but however, they also influence each other mutually. They found that hope and alliance are major predictors when it comes to personal recovery. Those outcomes underline the importance of how complex SMIs in general are and that there is a professional need in order to improve personal recovery. Therapeutic alliance and the client-therapist relationship in clinical settings are important to focus on since their impact as a determinant of personal recovery in SMIs is of major importance. Those findings are also relatable to further studies that found that personal recovery and insights are positively associated with therapeutic alliance and social factors in clinical settings (Kvrgic et al., 2013). Therapeutic alliance is a field that was already widely researched in the past until now, which revealed that therapeutic alliance predicts personal recovery, and a change in recovery also positively influences the alliance (Hicks, Deane, & Crowe, 2012). Furthermore, it was shown that alliances generally have a positive impact on the outcome of psychotherapies in clinical settings for severe mental illnesses (Moran et al., 2014). The results of this review underline the importance of a therapeutic alliance with regard to improving personal recovery in patients with SMIs. Therapeutic alliance leads to overall improved satisfaction in clinical settings, professional relationships between therapists and their clients, and personal growth (Osborn & Stein, 2016).

In terms of measurements of personal recovery, past research has already shown that the Personal Recovery Assessment Scale (RAS) and the Questionnaire about the Process of Recovery (QPR) are two of the most used measurements (Shanks et al., 2013). The results indicate that this can indeed be confirmed and that many researchers made use of those measurements. This also indicated that personal recovery is a sufficient theoretical ground regarding SMIs. This relates positively to the conceptual CHIME framework by Leamy et al (2011), in which the most beneficial factors of personal recovery are being brought together. These factors include connectedness, hope, optimism about the future, identity, meaning in life, and empowerment (Leamy et al., 2011). Regarding the results about what predicts personal recovery, there are many determinants that interact with the main points of the CHIME conceptual framework. Hope was often mentioned, which is seen in many different aspects but especially in being positive and hopeful about the future to come (Young et al., 2019; Hicks, Deane, & Crowe 2012). So is having meaning in life and being attached to secure people in their close environment. Generally speaking, being able to rely on other

people, and having healthy boundaries are determinants that positively affect personal recovery (Cavelti, Homan, & Vauth 2016; Hicks, Deane, & Crowe 2012). Also, determinants of hope, optimism, and being able to set goals that are in line with the future are important (Young et al., 2019). This finding is in line with other studies that also concluded that hope is important and the results of this review can confirm those findings. The study by Shanks et al., (2013) concluded that hope is one of the central aspects when it comes to personal recovery and therefore highly important. Another study also revealed that hope can be allocated into three categories, which all have an impact on personal recovery (Hobbs & Baker, 2012). Those include 'personal hope', 'influence of others on hope', and 'recovering', which showed that not only the impact of personal hope is significant regarding personal recovery, but also receiving hope from someone else, as in form of therapeutic relationships or social support. This helps clients to heal and start to believe in themselves to go towards personal recovery (Hobbs & Baker, 2012).

Nevertheless, there are more determinants that were prominent in this study. Positive or negative symptoms were noticeable predictors. Furthermore important are comorbid symptoms as depression and anxiety, and being able to evaluate feelings. Those are all determinants that encourage the information investigated by Leamy et al. (2011), that personal recovery is a rather active process which commands the patients' attention and energy. The study by Morrison et al. (2014) also stressed the fact that metacognitive beliefs are important, in which the patients become aware and conscious about their thoughts in order to actively work on them when necessary. This can also be related to further research that revealed the fact that especially patients who suffer from schizophrenia or psychosis face difficulties regarding metacognitive abilities (Lysaker et al., 2013). Therefore, treatment approaches and psychotherapy in those fields should focus on improving metacognitive abilities in order to work on and improve personal recovery. Furthermore, it was found that research on metacognition and metacognitive reflection or insight therapy does specifically promote personal recovery from severe mental illness (Lysaker, 2018). Metacognition is therefore a topic that was also widely researched before, however, it still needs to be more implemented within therapies and therapeutic care in order to help clients with SMI work on and evolve in these fields. This would also lead to an improvement in their personal recovery style.

The study by Cavelti, Homan & Vauth (2016), already researched into the direction of personal recovery in schizophrenia. They considered thought disorder in the treatment of schizophrenia/schizoaffective disorder as increasing personal recovery. They came to the conclusion that a therapeutic alliance can be used as a mediator between thought disorder and personal recovery. So this also underlines the importance of achieving and helping the

patients through special techniques to become more aware and self-conscious in order to recover. Self-awareness and positive thoughts about the future are therefore important determinants of personal recovery, it is just not yet that easy to improve these processes. So the studies by Hicks, Deane, & Crowe (2012) and Jas & Wieling (2018) both had in common that changes in alliance or recovery promoting competencies are positively associated with PR and therefore predictors of personal recovery. They already tested clinical tools on patients and showed that some techniques are already beneficial when looking longitudinally. The study by Law et al. (2016) underlined the importance of negative emotions and psychosocial factors as the most important determinants of personal recovery in the long run. Those results are also in line with what the study of Young et al. (2019) and Jas & Wieling (2018) mentioned how important the social environment and psychosocial influence is. Furthermore, as the study by Jørgensen et al. (2015) indicated that recovery is in itself a very complex topic in which subjective and objective elements of personal recovery influence each other. This implies that the severity of symptoms was negatively correlated with PR so as satisfaction with life, hope, knowledge, and empowerment. This also relates to the importance of psychosocial factors and the power of becoming conscious and aware of their own thoughts in order to improve recovery.

In sum, there are several processes that predict personal recovery in the long run. Many also confirmed the sections of the CHIME framework by Leamy et al. (2011), which is used as a theoretical ground for personal recovery which was already known for a longer period of time. However, information about the importance of thoughts and becoming aware of oneself, the importance of actively working on wanting to recover brought in some new perspectives about personal recovery. As in serious mental illnesses as Schizophrenia or PTSD, which remain complex disorders that include changes in brain chemistry and behavioral problems, it makes it quite difficult to change the patients' beliefs. This makes it especially important for these patient groups to aim at more than only complaints and this study gave insights on ideas how to make this possible. Nevertheless, the importance of further research and experiments within this field is of major importance since there is still room for improvement. Based on these findings, future research could include work on improving metacognition and insightful thinking for patients with a severe mental illness. One could take some steps further and research into directions that have not had enough attention to this point yet as for example implementing psychotherapeutic techniques that have not been used in the past that often before. In order to evolve in this field within the clinical setting, future research and therapeutic techniques need to be adjusted to the patients' needs and might also imply to become creative and try out new techniques. Of course, future research in this field is highly warranted, but based on these findings there are steps that can be taken to improve personal recovery in SMIs.

Strengths and Limitations

The review is strong in terms of finding connections between the different studies and drawing conclusions that are in line with each other. There were also positive outcomes about what was selected in the introduction that was in line with the results and answering the research questions. The overall way of selecting the articles is also a strength since there was a large pool of studies that included the most beneficial and informational sources that could be narrowed down to a selection of eight suitable articles.

There are some limitations that need to be mentioned and should be considered when interpreting the findings of this study. At first, the literature search (title/abstract and full-text screening) was only carried out by one person alone. In order to check the interrater reliability, there need to be at least two researchers that work on the literature search. Furthermore, only studies from 2010 until now were included, which might lead to missing information from past research. As with all narrative reviews, the nature of the method part has always a subjective influence within itself. This includes the topics of how it was decided which type of research was searched and which data was extracted. This also includes all conclusions that have been derived from. Furthermore, there is always the possibility that conclusions are drawn in a misleading way, that comes naturally to unspecified inclusion criteria and or selection bias. Maybe a different approach to the methods would have changed research outcomes and results. It might be the case that the opinion of a secondary researcher has led to different outcomes in terms of conclusion about determinants of personal recovery, or at least a different perspective. Another important limitation is about the specificity of the target group, since the majority of articles are about Schizophrenia or Schizoaffective disorder. This does not assure that the results can be generalized and therefore does not really cover the topic of general SMIs.

Implications

With regard to the future, it would be beneficial to have more long term studies and experiments about SMIs and personal recovery that also come up with new ideas about improving the patient's thoughts. This could include any creative idea such as fostering the patient’s imagination in the form of stimulating their minds or by thought transformations in the form of new interventions. Although there is already information that focuses on personal recovery, there is still a large research gap. This might be the case because the overall approach of focusing on personal recovery is rather new. The clinical health care system is however in need of further implications, which means that there need to be more rigorous

studies investigating predictors of PR and which interventions can be used to improve personal recovery. However, there were also some interesting findings within this review that could already help to inform practitioners and science. As for example, the client-therapist relationships, therapeutic alliance or metacognition are highly important. So is specifically working on the patients' self-worth and negative emotions. There are already interventions that focus on improving therapeutic relationships or specifically work on the patients' metacognition which showed positive outcomes regarding personal recovery (Morrison et al., 2014). However, additional research within this field would be warranted to endorse the importance of it and might lead to new findings. There are many determinants that have a huge influence on PR. This knowledge could be useful in the future when developing and implementing interventions for personal recovery. This would already fill a research gap and would lead to improvements in the clinical healthcare system. A good example of what is happening at the moment within this field is a study that aims at improving personal recovery in bipolar disorder (Kraiss et al., 2018). Studies like this aim to study whether positive psychological interventions have a more positive effect on personal recovery than regular care and bring expanded knowledge about how to understand and influence personal recovery in SMIs. Future research in this field might be promising in terms of healing and personally recovering from severe mental illnesses.

Conclusion

The aim of this narrative review was to gain insights and a broader perspective on the determinants of personal recovery regarding SMIs. Already known information could be confirmed and it was interesting to see that also new insights could be gained as the importance of psychosocial factors, active willingness to change, and the importance of thought control and metacognition. There is still a substantial research gap about which determinants of personal recovery are predictive in serious mental illnesses and especially about how to improve helping the patients in a clinical setting. Nevertheless, this review gave some more insights into what contributes to personal recovery. Future studies on SMIs should continue focusing on more than only diminishing complaints and including personal recovery as a theoretical ground. It is time to shift the attention from regular psychological treatment options to focusing on personal recovery, with the aim to create a future that is adjusted to what the current population of SMIs truly needs.

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Appendix

Pubmed

(((recover*[Title/Abstract]) AND (personal[Title/Abstract] OR subjective[Title/Abstract])) OR ((“recovery-oriented”[Title/Abstract] OR “recovery-focused”[Title/Abstract])) OR ((("Psychiatric Rehabilitation" OR "Mental Health Rehabilitation" OR "Psychosocial Rehabilitation"[MeSH Terms])))

AND

(("severe mental illness"[Title/Abstract] OR "severe mental disorder"[Title/Abstract] OR "serious mental illness"[Title/Abstract] OR "serious mental disorder"[Title/Abstract] OR "bipolar disorder"[Title/Abstract] OR "delusional disorder"[Title/Abstract] OR "major depressive disorder"[Title/Abstract] OR “depressive disorder” [Title/Abstract] OR depression [Title/Abstract] OR schizophrenia[Title/Abstract] OR manic[Title/Abstract] OR manic-depressive[Title/Abstract] OR "paranoid disorder"[Title/Abstract] OR "paranoid disorder"[Title/Abstract] OR psychoses[Title/Abstract] OR psychosis[Title/Abstract] OR "psychotic disorder*"[Title/Abstract] OR "schizoaffective disorder"[Title/Abstract] OR schizophreniform[Title/Abstract] OR “eating disorder”[Title/Abstract] OR “binge-eating disorder”[Title/Abstract] OR “anorexia nervosa”[Title/Abstract] OR “personality disorder”[Title/Abstract])))

AND

((correlat*[Title/Abstract] OR associat*[Title/Abstract] OR relat*[Title/Abstract] OR predict*[Title/Abstract] OR determinant[Title/Abstract] OR impact[Title/Abstract] OR evaluat*[Title/Abstract] OR efficacy[Title/Abstract] OR effect*[Title/Abstract] OR intervention[Title/Abstract] OR therap*[Title/Abstract] OR program[Title/Abstract] OR exercise[Title/Abstract]))

Hits: 1,581

PsycINFO

((recover* AND (personal OR subjective)) OR (recovery-oriented OR recovery-focused))

OR

SU “Psychosocial rehabilitation”

AND

("severe mental illness" OR "severe mental disorder" OR "serious mental illness" OR "serious mental disorder" OR "bipolar disorder" OR "delusional disorder" OR "major depressive disorder" OR “depressive disorder” OR depression OR schizophrenia OR manic OR manic-depressive OR "paranoid disorder" OR "paranoid disorder" OR psychoses OR psychosis OR "psychotic disorder*" OR "schizoaffective disorder" OR schizophreniform OR “eating disorder” or “binge-eating disorder” OR “anorexia nervosa” OR “personality disorder”)

AND

(correlat* OR associat* OR relat* OR predict* OR determinant OR impact OR evaluat* OR efficacy OR effect* OR intervention OR therap* OR program OR exercise)

Hits: 1,832

Web of science (core collection)

TS=((recover* AND (personal OR subjective)) OR (recovery-oriented OR recovery-focused))

AND

TS=("severe mental illness" OR "severe mental disorder" OR "serious mental illness" OR "serious mental disorder" OR "bipolar disorder" OR "delusional disorder" OR "major depressive disorder" OR “depressive disorder” OR depression OR schizophrenia OR manic OR manic-depressive OR "paranoid disorder" OR "paranoid disorder" OR psychoses OR psychosis OR "psychotic disorder*" OR "schizoaffective disorder" OR schizophreniform OR “eating disorder” or “binge-eating disorder” OR “anorexia nervosa” OR “personality disorder”)

AND

TS=(correlat* OR associat* OR relat* OR predict* OR determinant OR impact OR evaluat* OR efficacy OR effect* OR intervention OR therap* OR program OR exercise)