

Adult Attachment and Personal Recovery in Clients With a Psychotic Disorder

E. M. M. van Bussel^{*1,○}, A. I. Wierdsma², B. C. van Aken^{2,3,○}, I. E. M. G. Willems⁴, and C. L. Mulder^{2,5}

¹GGZ Oost Brabant, Institute for Mental Health, Oss, The Netherlands; ²Department of Psychiatry, ESPRI, Erasmus MC, Rotterdam, The Netherlands; ³Forensic Psychiatric Institute, Fivoor, Rotterdam, The Netherlands; ⁴GGZ Breburg, Institute for Mental Health, Tilburg, The Netherlands; ⁵Parnassia Psychiatric Institute, Rotterdam, The Netherlands

*To whom correspondence should be addressed; GGZ Oost Brabant, Gezondheidslaan 65, 5342 JW Oss, The Netherlands; tel: 0031653548319, fax: not available anymore, e-mail: emm.van.bussel@ggzooostbrabant.nl

Background: Personal recovery has become a key objective in the treatment of clients with a psychotic disorder. So far it has been established that the two attachment dimensions, ie, anxious and avoidant, are negatively associated with subjective well-being, self-esteem and hope. This study is the first to explore whether attachment styles are related to personal recovery in this population. **Aims:** To study the effects of anxious and avoidant attachment on personal recovery in a population with a psychotic disorder. **Method:** This cross-sectional study is part of the UP's multicenter cohort study on recovery from psychotic disorders, in which 265 participants are currently included. Attachment was assessed using the Psychosis Attachment Measure, including the anxious and avoidant attachment dimensions. Personal recovery was measured using the Recovering Quality of Life-10 (ReQOL-10) and the Individual Recovery Outcomes Counter (I.ROC). Regression analysis was used to investigate the effect of attachment on personal recovery. **Results:** We found negative effects of the anxious attachment style on the total scores of the ReQoL-10 ($b = -4.54$, $SE = 0.69$, $\beta = \beta 0.37$) and the I.ROC ($b = -5.21$, $SE = 0.89$, $\beta = -0.32$). Although there were also negative effects of the avoidant attachment style on the total scores of the ReQoL-10 ($b = -3.08$, $SE = 0.93$, $\beta = -0.18$) and the I.ROC ($b = -4.24$, $SE = 1.24$, $\beta = -0.19$), these were less pronounced. **Conclusion:** Results show that both forms of insecure attachment (anxious and avoidant) are related to poorer personal recovery in clients with a psychotic disorder.

Key words: subjective recovery/anxious and avoidant attachment/schizophrenia/psychosis

Introduction

Within the last decades, a growing interest in the different aspects of recovery has been seen in mental health-care, especially in clients with schizophrenia or other

psychotic disorders. Pressure from consumer-based groups contributed to a shift from a mainly objective symptomatic perspective on recovery towards one that was more personal and subjective.¹ The subjective concept of recovery from Mental Illness (SMI) was first introduced by Patricia Deegan, who defined it as a unique, non-linear journey of living with mental illness.² In the ensuing years, additional definitions were provided and discussed.³ For example, Anthony et al⁴ discussed recovery as a way of living a satisfying, hopeful and contributing life in spite of the limitations caused by the illness. More recently, Davidson and Slade et al defined recovery as learning to live a better life despite the illness.^{5,6} Leamy et al⁷ distinguished five processes relevant to personal recovery: connectedness (peer support, relationships, and being part of society); hope and optimism (motivation, positive thinking, and having aspirations); identity (a positive sense of self); meaning in life (having goals, and meaningful living); and empowerment (responsibility, being in control, and focusing on strengths). They also identified the phases between the various time-points that mark the process of recovery. These include being stuck, being aware, struggling, rebuilding, and growth. These processes and phases are brought together in a conceptual framework for personal recovery with the acronym CHIME-D.^{8,9}

Regarding the results on personal recovery in clients with a psychotic disorder, a recent prospective 20-year follow-up study of a first-episode psychosis cohort showed that personal recovery was confirmed by 53.7% of 80 participants.¹⁰ In practice however, personal recovery varies greatly in this population, in whom relapses and stagnation may be a particular source of concern. Research into predictors of personal recovery showed that outcomes were better for people who had a short duration of untreated psychosis, displayed higher pre-morbid social adjustment (between the ages of 5–11)

and were not living alone.¹⁰ Social relationships and interactions have been identified as key agents of change in recovery.^{11–13} It has been found that at least one relationship that provides hope and encouragement is a critical factor in the process of recovery.¹⁴

Following on these findings, the attachment theory might provide a promising theoretical framework to enhance understanding in how social relationships can play an important role in the process of personal recovery.¹³ John Bowlby, one of the founders of the attachment theory, argues that a secure attachment style is associated with greater emotional well-being and mental health, a better emotion regulation and greater resilience, hope, and optimism in life.^{15–17} Because these factors are related to the concept of personal recovery, or are even part of it, it is very likely that a secure attachment style promotes the process of personal recovery for clients with a psychotic disorder. On the other hand, an insecure attachment style may hinder this process, or may even arrest it.

Attachment theory is a lifespan theory, which assumes that, through early relationships with caregivers, children develop internal working models of the self and others.^{17,18} These working models are carried forward into adulthood, affecting the development not only of current and future stress regulation, but also of interpersonal functioning and relationships.¹⁶ Research suggests that there are two major dimensions of insecure attachment: anxiety (about separation, abandonment, or insufficient love); and avoidance (of intimacy, dependency, and emotional expressiveness).^{15,19–21} The anxious attachment style is thought to result from a caregiver whose inconsistent and or intrusive availability led an infant to exaggerate emotional expression and minimize exploration of the environment, all in an attempt to reduce its own anxiety. In adulthood this is represented by heightened emotional expression (or hyper-activation), low self-esteem, seeking approval, and fear of autonomy and separation.¹⁵ The avoidant attachment style is thought to develop from experiences of rejection or unavailability of caregivers. In adulthood this can result in downplaying or deactivating emotions, avoiding emotional connectedness, and a fear of intimacy.¹⁵ Bartholomew interprets these dimensions in terms of Bowlby's ideas about internal working models of self and others,^{17,18,22} proposing that the anxiety dimension can be conceptualized as a “model of self” (positive vs negative) and the avoidance dimension as a “model of others” (positive vs negative).²²

A recent meta-analysis reported on the association between anxious and avoidant attachment styles and subjective well-being, self-esteem and hope in a population with a psychotic disorder, showing that higher scores on anxious and avoidant attachment were related to lower scores on these three aspects.^{23–26} However, the relationship between insecure attachment and personal recovery, as defined in the CHIME model has not been investigated so far.

The aim of the present study is therefore to analyze the relationships between the anxious and avoidant attachment styles and personal recovery, using different measures to assess it. Our hypothesis concerning clients with (non-affective) psychotic disorders is that anxious and avoidant attachment styles are associated with poorer personal recovery.

Methods

This study has a cross-sectional design and is based on baseline data from the UP's study.²⁷ The UP's study is an ongoing Dutch longitudinal multicenter cohort study on recovery from psychotic disorders that aims to explore the psychological, neuropsychological and social determinants of personal recovery. Its name is derived from the ups and downs clients experience during the recovery process. The UP's study is a collaboration between the Erasmus University Medical Center and ten mental health institutions in the Southwestern Netherlands, all of which provide ambulatory teams in which clients are included, interviewed, and followed up by trained students and researchers.^{27,28} Eligible clients had to meet the following criteria: (1) age between 18 and 65 years; (2) fulfilling the DSM 5 criteria for a psychotic disorder: brief psychotic disorder, schizophreniform disorder, schizophrenia, schizo-affective disorder, delusional disorder, psychotic disorder due to substance use, or otherwise unspecified psychotic disorders; (3) an understanding of Dutch sufficient to an ability to complete the measurements; and (4) the capacity to provide informed consent.

In this longitudinal study, clients were selected through a search in the anonymized Electronic

Patient Dossiers (EPD) of the participating Mental Health Care Institutions. The database search was based on the inclusion and exclusion criteria as mentioned. Diagnoses were made by psychiatrists, based on a clinical interview.

Sociodemographic characteristics gathered during the interview included gender, age, education, residential status and duration of care. Further details of the UP's study are described in the design protocol.²⁷ The current study included 265 participants (complete sample $N = 226$).

Assessments

Attachment. Adult attachment was assessed using the Psychosis Attachment Measure (PAM), a self-report questionnaire developed by Berry et al²⁹ that contains positively worded items concerning general relationships (not specifically romantic relations). The PAM consists of 16 items that were derived from other instruments for attachment self-report that refer to thoughts, feelings and behaviors in relationships with important others. The items contain 4 answer categories (0 = not at all to 3 = very much). A factor analysis of the original English

version showed two subscales: anxiety and avoidance, with Cronbach's alpha = 0.83 for anxiety and 0.78 for avoidance³⁰; similar values were found for the Dutch version (0.70 and 0.83).³¹ To evaluate the two-factor structure of the PAM, we performed a confirmatory factor analysis. Compared to the anxious items, avoidant subscale items loaded substantially lower. Following Korver et al.,³¹ the analysis was repeated excluding items 2 and 9. A two-factor model for 14 items showed a reasonable fit with most of the indices within conventional cut-off values. The anxious subscale had good internal consistency (Cronbach's alpha = 0.83, McDonald's omega = 0.84), in contrast to the avoidant subscale (0.55 and 0.54). Attachment anxiety and attachment avoidance were weakly correlated ($r = 0.15$, $SE = 0.073$, $CI = 0.02-0.30$), indicating related but distinct aspects of adult attachment.

Personal Recovery. Personal recovery was assessed using two instruments: the Individual Recovery Outcomes Counter (I.ROC) and the Recovering Quality of Life-10 (ReQoL-10). The I.ROC was developed by a Scottish mental health facility to monitor service users' well-being and recovery.^{32,33} The I.ROC was designed to be completed as a guided self-report; after a guided exploration of the clients' recovery, it is scored like a self-report. It consists of 12 questions divided into four clusters: Home (mental health, life skills, and safety and comfort); Opportunity (physical health, exercise and activity, and purpose and direction); People (personal network, social network, and valuing myself); and Empowerment (participation and control, hope for the future, and self-management).³² Questions are answered on a six-point scale ranging from "never" to "all the time". The Dutch validation study used principal component analysis showing a one factor solution with Cronbach's alpha at 0.92.³⁴ We found two moderate loading items concerning behavior: to engage in physical exercise and group activities. Factor analysis arrived at a one factor solution that rendered the best fit indices and showed good internal consistency (Cronbach's alpha = 0.83, McDonald's Omega = 0.84). Because the I.ROC can be perceived as a formative scale, we used a sum score for all items as well as scores of the four clusters. These scores ranged from 26 to 72 for the I.ROC-total and 3 to 18 for the subscales, with high scores indicating better personal recovery.

The development of the Recovering Quality of Life-10 (ReQoL-10) questionnaire, was undertaken by the ReQoL Scientific Group at the University of Sheffield.³⁵ During its development, seven themes based partly on the CHIME conceptual framework were identified as being important to recovering quality of life in mental healthcare: activity, belonging and relationships, choice, control and autonomy, hope, self-perception, well-being and physical health. These seven themes provided the basis for generating items.³⁶ The ReQoL-10 measures

quality of life over the previous week, scoring all items on a five-level scale ranging from "none of the time" to "most of the time". Scores range from 0 to 40 expressing low to high quality of life. In the Dutch translation of the ReQoL the factor structure was not analyzed, but inter item correlations ($r = 0.40$, range = -0.03 to 0.67) and good internal consistency (Cronbach's alpha = 0.87) suggested an unidimensional model.³⁵ Our factor analysis resulted in a one factor solution which showed good internal consistency estimates (Cronbach's alpha = 0.86, McDonald's Omega = 0.86).

Symptom Severity. Participants varied in their baseline state of clinical recovery and duration of mental healthcare. Therefore we used demographic characteristics (gender and age) and clinical variables (symptom severity and duration of care) as covariates in all analyses. Severity of symptoms was measured using the PANSS-8,³⁷ a scale comprising eight items measuring positive symptoms (delusions, hallucinatory behavior, and conceptual disorganization); negative symptoms (blunted affect, social withdrawal, lack of spontaneity and lack of flow of conversation); and general symptoms (mannerism and posturing, and unusual thought content). The severity of symptoms is scored with a minimum of 1 (absent) and a maximum of 7 (extreme). The PANSS-8 is used to map the severity of mental health in people with psychosis and scores <14 on positive and negative symptoms define cross-sectional remission of schizophrenia.^{38,39}

Data Analyses

Data editing and statistical analyses were performed using SPSS version 26.0 (SPSS Inc., Chicago, IL). Structural validity and internal consistency of measures were evaluated by confirmatory factor analysis using the lavaan package⁴⁰ in R version 4.2.2.⁴¹ Descriptive statistics were used to summarize client and service-user characteristics. Next, using the GenL in module in SPSS, multiple linear models were estimated to analyze the effect of insecure attachment on personal recovery. Corresponding models were constructed to investigate the effect of attachment on different scales and subscales capturing aspects of personal recovery, however we waived correction for multiple testing focusing instead on the differences in standardized effect sizes. We checked regression assumptions and model fit using graphic methods (QQ and residuals versus fitted plots).

Results

Demographic and Clinical Characteristics of the Sample

Table 1 shows the demographic and clinical characteristics of the UP's sample ($N = 265$). At baseline, the mean age of participants was 41 years, 32.5% were female,

Table 1. Demographic and Clinical Characteristics of the UP's Sample

Variables	Participants (<i>N</i> = 265)	Valid
Gender (<i>N</i> %)		
Male	174 (65.7)	265
Female	91 (34.3)	
Age in years (mean, SD)	40.9 (12.13)	265
Education completed (<i>N</i> %)		
No education	22 (9.1)	242
Elementary school	37 (15.3)	
High school	72 (29.8)	
Community college	87 (35.9)	
Higher professional education/University	24 (9.9)	
Residential status (<i>N</i> %)		
Single without children	151 (55.7)	264
Single with children	31 (11.4)	
With partner	53 (19.5)	
With family or otherwise	29 (10.7)	
First diagnoses (<i>N</i> %)		
Schizophrenia	116 (43.8)	265
Psychosis NOS	74 (27.9)	
Brief psychotic disorder	29 (10.9)	
Schizo-affective disorder	24 (9.1)	
Other (including not registered)	22 (8.3)	
Duration of care in years (mean, SD)	14.04 (10.12)	252
PANSS-8		
Total (mean, SD)	15.95 (6.18)	245
In remission (<i>N</i> %)	150 (55.4)	

Note: PANSS-8, positive and negative symptom scale-8.

Table 2. Means (SD) on the PAM, I.ROC-Total and Subscales, and ReQOL-10.

Measure	Response sample <i>N</i> = 265			Complete sample <i>N</i> = 226	
	Mean	SD	Valid <i>N</i>	Mean	SD
PAM					
Anxious	0.88	0.62	248	0.88	0.62
Avoidant	1.47	0.46	248	1.45	0.45
I.ROC					
Total	50.00	9.85	260	49.90	9.99
Home	13.43	2.69	261	13.39	2.68
Opportunity	12.34	3.16	260	12.32	3.28
People	11.89	2.94	259	11.85	2.91
Empowerment	12.38	3.40	259	12.37	3.33
ReQoL-10	25.22	7.57	262	25.05	7.64

Note: PAM, Psychosis Attachment Measure; I.ROC, Individual Recovery Outcomes Counter; ReQoL-10, Recovering Quality of Life-10.

and 8.3% had not completed any education. The initial diagnoses were mostly schizophrenia (43.8%) or psychosis not otherwise specified (27.9%). Over half of the sample lived alone without children (55.7%). The mean duration of care was 14 years (SD 10.12) and based on the PANSS-score, 55% were in clinical remission.

Table 2 shows no differences in means and SDs for PAM, I.ROC-total and subscales, and ReQOL-10 in the response sample and for all cases in the final analyses (complete sample).

The mean score on PAM avoidant was slightly higher than the mean score on PAM anxious. The means on the personal recovery scales were 60–70% of maximum scores.

Insecure Attachment and Personal Recovery

Table 3 shows the regression coefficients for the effect of anxious and avoidant attachment styles on personal recovery, taking account of the following covariates: PANNS-8, age, gender, and duration of care. Including

Table 3. Effects of Insecure Attachment on Personal Recovery

	ReQoL-10	I.ROC-Total	Home	Opportunity	People	Empowerment
PAM anxious						
<i>b</i>	-4.536	-5.207	-1.438	-1.261	-0.854	-1.756
SE	0.685	0.893	0.250	0.334	0.286	0.315
β	-0.368	-0.323	-0.331	-0.239	-0.182	-0.326
PAM avoidant						
<i>b</i>	-3.076	-4.239	-0.606	-0.467	-2.068	-1.133
SE	0.931	1.214	0.340	0.458	0.389	0.426
β	-0.181	-0.191	-0.101	-0.064	-0.320	-0.154

Note: All results have been calculated, taking account of the following covariates: PANNS-8, age, gender, and duration of care. *b*, unstandardized regression coefficient; SE, standard error; beta, standardized regression coefficient; PAM, Psychosis Attachment Measure; I.ROC, Individual Recovery Outcome Counter; ReQOL-10, Recovering quality of life-10.

an interaction effect of anxious and avoidant attachment did not improve model fit. We found negative effects of the anxious attachment style on total scores of the ReQoL-10 ($b = -4.54$, $SE = 0.69$, $\beta = -0.37$) and the I.ROC ($b = -5.21$, $SE = 0.89$, $\beta = -0.32$). Although there were also negative effects of the avoidant attachment style on the total scores of the ReQoL-10 ($b = -3.08$, $SE = 0.93$, $\beta = -0.18$) and the I.ROC ($b = -4.24$, $SE = 1.24$, $\beta = -0.19$), these were less pronounced. In the I.ROC subscales, two results stand out: (1) in the I.ROC “people” subscale, including the items personal and social network and valuing myself, the effect of avoidant attachment was stronger than anxious attachment; and (2) the effects of the two attachment styles on the I.ROC “opportunity” subscale were weaker compared to the other subscales.

Discussion

In this study we explored the effects of the anxious and avoidant attachment styles on personal recovery in a sample of clients with a psychotic disorder. We found negative effects of the anxious and avoidant attachment styles on personal recovery. The results on both personal recovery scales (I.ROC and ReQOL-10) were comparable. This suggests that both insecure forms of attachment (anxious and avoidant) are related to poorer personal recovery.

Demographic and clinical characteristics of participants indicate a representative sample of the current ambulatory psychosis population in the Dutch Mental Health Care.²⁸ Comparison of the UP’s study with other psychosis studies shows that scores on attachment, personal recovery and clinical symptoms are comparable with those of other studies in this population. In our study, the mean scores for the anxious and avoidant attachment styles were a fraction higher than those in the GROUP study, and represent slightly less secure attachment.⁴² Although our mean ReQOL-10 score was slightly lower than that in a first-episode psychosis population,⁴³ it was equal to that in the original UK validation research study done within other clinical groups.³⁶ The mean score

on the I.ROC is equal to that in the schizophrenia subgroup in the Dutch validation study.³⁴ And although mean scores on the PANSS-8 were low, they were consistent with those in other cohort psychosis studies.⁴⁴

This study established negative effects of the anxious and avoidant attachment styles on personal recovery. These findings are in line with the literature, which describes secure attachment as being associated with greater emotional well-being, resilience, hope and optimism in life—all aspects that are important when it comes to personal recovery.¹⁵ Our results are also in line with a recent meta-analysis that found higher scores on anxious and avoidant attachment to be related to lower scores on hope, self-esteem and well-being.²⁴ A study where insecure attachment is associated with less empowerment in a population with SMI (Severe Mental Illness), supports these outcomes as well.¹³

It seems that, in general, effects are stronger for anxious attachment than for avoidant attachment, a distinction that was also reflected in the meta-analysis on this theme.²⁴ Part of the explanation may lie in the nature of the two attachment styles. Where anxious attachment is accompanied by hyper-activation of emotions, avoidant attachment style is associated with deactivation of emotions.¹⁵ Anxiously attached people tend to amplify their negative reactions to threats; when they encounter threats, they have trouble remaining mentally organized and are ambivalent about seeking support. Avoidant individuals, in contrast, downplay threats and vulnerabilities, deny negative emotions and suppress negative memories.¹⁵ The cost of maintaining psychological distance may be high, both for them and for their relationship partners.¹⁵ Since personal recovery is all about the subjective experience of recovery, it is possible that hyper-activation of emotions amplifies the effects on perceived personal recovery and deactivation suppresses it.

Regarding the effects of both attachment styles on the I.ROC subscales, there are two aspects that stand out. First, the effects on the I.ROC subscale “opportunity” are weaker overall, compared to the other subscales. This difference may be related to the items of the I.ROC subscale “opportunity”. In particular the items physical

health and “exercise and activity” may relate less strongly to attachment. Second, the effect of the avoidant attachment style on the I.ROC subscale “people” was stronger, where the effect of the anxious attachment was weaker compared to other outcomes on the subscales. The I.ROC subscale “people” contains the items personal and social network and self-esteem. Where the anxious attached person appeals ambivalent on his personal and social network, the avoidant attached person relies mainly on him/herself. Especially the difference in subjective experience of the personal and social connectedness, may explain the stronger negative relationship with the I.ROC subscale “people” of the avoidant attachment style on the one hand and the weaker negative relationship of the anxious attachment style on the other hand.

Limitations

The current findings have to be interpreted in light of the following limitations.

First, our findings are based on cross-sectional data. Given promising attempts to modify attachment during treatment,^{13,45–48} we would recommend that future studies use longitudinal data to explore whether attachment patterns could indeed be a working mechanism for bringing about changes in personal recovery.

A second limitation of our study is the overlap in items between the concepts of attachment and personal recovery. This is most evident for questions in the I.ROC and ReQoL-10 related to self-esteem and personal and social network. These overlaps may explain some of the relationships we found.

A third limitation concerns the question whether psychotic symptoms may have influenced the degree of insecure attachment in this population. The severity of insecure anxious and avoidant attachment is possibly not only the result of traumatic life events in childhood but in adulthood as well,⁴⁹ which means that past psychoses may have affected the degree of insecure attachment in this population.^{50,51} In line with this, Berry et al⁵¹ argue that not only insecure attachment can lead to paranoia but that paranoia may lead to insecure attachment as well. Evidence from studies conducted over more than one time period can help to resolve this question about causality.⁵¹ Although most literature treats attachment styles as trait-like, it is known that they can change in the long term⁵² and it seems likely that, even though a particular style may predominate within each individual, attachment attitudes and behaviors might fluctuate to the challenges of life.⁵¹

Fourth, the avoidant attachment style could be associated with specific negative symptom subtypes such as a loss of ability to experience pleasure (anhedonia) or social and emotional withdrawal,^{29,53,54} which may have influenced the results.

A fifth limitation may lie in the latent structure of the PAM, as one study yielded no evidence for a coherent

two-dimensional structure and was also unable to support the existence of a well-defined avoidance factor.⁵⁵ Although we found a two-factor structure for the PAM, internal consistency of the avoidant subscale was low. This may have affected the results. A revision of the PAM is being developed by Pollard et al,⁵⁶ and captures the concept of disorganized attachment as well, a dimension which is likely to be relevant in a sample of psychotic clients. A confirmatory psychometric evaluation of the revised PAM is required, within a separate psychosis sample, to confirm its factor structure.⁵⁶

Sixth, we mention that the sample in this study is shown to be heterogeneous. Only 44% of the sample is shown to have the diagnosis schizophrenia and up to 28% are diagnosed with psychosis NOS. Although this does reflect the psychosis population in Dutch mental health care, the heterogeneity might make the results difficult to generalize.

Finally, some groups of clients were less willing or able to participate, like care-avoiding clients and those with severe psychotic symptoms or those leaving the mental health care team.²⁸ For this reason, our cohort may not provide a complete picture of personal recovery in a population of clients with psychoses.

Clinical Implications

It is now more widely recognized that personal recovery is important for people with a severe mental illness, and especially for those with a psychotic disorder. Although approximately half eventually may achieve personal recovery,¹⁰ there are large individual differences in practice. Our results suggest that establishing secure relationships could be an essential part of promoting personal recovery. This has several theoretical and clinical implications.

Reflecting on factors that may facilitate secure attachment, there is evidence that internal working models in general can be positively revised during adulthood through positive corrective interpersonal emotional experience.^{15,57} There is also evidence that psychotherapy can increase attachment security by transforming the working models.¹⁵ It is important to mention that insecure attachment is linked to mentalizing difficulties in particular.⁵⁸ Mentalization is a form of social cognition which enables individuals to accurately interpret and process interpersonal relationships and the social world in general, by understanding behavior of self and others in terms of intentional mental states (eg, needs, desires, feelings, beliefs, goals, purpose, and reasons).^{59,60} Development of functional mentalization skills emerges in a secure attachment environment and can be disrupted by negative interpersonal experiences, including difficulties in early attachment relationships.^{59,61} Clinicians should therefore include routine questions in treatment about early attachment relationships that may have had a negative impact on mentalization abilities and the development of adult attachment style.⁶⁰ If care workers can reframe problematic

interpersonal behaviors as attachment behaviors which were functional and understandable in the context of early relationships, this might help reduce staff criticism and hostility.⁶⁰ In addition, the psychosocial support and psychotherapeutic interventions that are given may contribute to the development of improved mentalizing capacity.⁵⁹ Mentalization based treatment in particular may contribute to recovery of clients with a psychotic disorder as it targets the social cognitive processes underlying social interaction.⁶²

Further, rather than working with individual members, an attachment framework would emphasize the importance of increasing personal recovery through a focus on relationships within social systems. Treatment and care would focus on shifting the mutual relationships within a social system towards greater security.^{13,63} Both individual treatments⁶⁴ as well as family attachment interventions that target the family attachment system,⁴⁶ describe different ways towards transforming impaired and distorted representations of self and others in order to create security within social systems.

In addition, the notion of epistemic trust might be important in the development of a secure base in order to facilitate personal recovery.¹³ Epistemic trust describes the willingness to accept new information from another person as trustworthy, generalizable, and relevant and it allows individuals to benefit and learn from their (social) environment.⁶⁵⁻⁶⁷ The notion of epistemic trust constitutes a shift towards a socially oriented perspective and to interventions that target both malignant and beneficial aspects of the environment,⁶⁶ and it also emphasizes the importance of a good therapeutic relation. That is, the feeling of being understood, supported, and valued within the therapeutic relation is seen as an essential starting point which makes life outside treatment and care a setting in which new information about oneself and the other can be acquired and internalized.^{13,65,67}

Taken together, we argue that the facilitation of the process of personal recovery should be considered in the context of attachment, including the interpersonal and social world. The relations with significant others, such as family, friends, and professionals are all important to establish a social environment that is characterized by safe attachment bonds in order to facilitate personal recovery.

Acknowledgments

We would like to thank the following mental health care institutes for their funding and participation in this study: Parnassia Psychiatric Institute (comprising Antes Delta Psychiatric Centre and Parnassia Psychosis Research); and Emergis; and Dijk & Duin; and Fivoor; and GGz Breburg; and GGz Delfand; and GGz Oost-Brabant; and Stichting Pameijer. As well as thanking the governing body of the City of Rotterdam for their funding and cooperation. We would like to thank the panel of

peer experts for ensuring that the interests of their clients are always considered and protected. The Authors have declared that there are no conflicts of interest in relation to the subject of this study.

References

1. Jacobson N, Greenley D. What is recovery? A conceptual model and explication. *Psychiatr Serv.* 2001;52(4):482–485.
2. Deegan PE. Recovery: the lived experience of rehabilitation. *Psychosoc Rehabil J.* 1988;11(4):11–19.
3. van Weeghel J, van Zelst C, Boertien D, Hasson-Ohayon I. Conceptualizations, assessments, and implications of personal recovery in mental illness: a scoping review of systematic reviews and meta-analyses. *Psychiatr Rehabil J.* 2019;42(2):169–181.
4. Anthony WA. Recovery from mental illness: the guiding vision of the mental health service system in the 1990s. *Psychosoc Rehabil J.* 1993;16(4):11–23.
5. Davidson L, Guy K. Peer support among persons with severe mental illnesses: a review of evidence and experience. *World Psychiatry.* 2012;11(2):123–128.
6. Slade M, Williams J, Bird V, Leamy M, Le Boutillier C. Recovery grows up. *J Ment Health.* 2012;21(2):99–103.
7. Leamy M, Bird V, Le Boutillier C, Williams J, Slade M. Conceptual framework for personal recovery in mental health: systematic review and narrative synthesis. *Br J Psychiatry.* 2011;199(6):445–452.
8. Pan D. *A Latent Profile Analysis of Personal Recovery in People with Serious Mental Illness: An Application of the Connectedness, Hope, Identity, Meaning, Empowerment, and Difficulties (CHIME-D) Framework.* The University of Iowa; 2021.
9. Bird V, Leamy M, Tew J, Le Boutillier C, Williams J, Slade M. Fit for purpose? Validation of a conceptual framework for personal recovery with current mental health consumers. *Aust N Z J.* 2014;48(7):644–653.
10. O’Keeffe D, Hannigan A, Doyle R, *et al.* The iHOPE-20 study: relationships between and prospective predictors of remission, clinical recovery, personal recovery and resilience 20 years on from a first episode psychosis. *Aust N Z J.* 2019;53(11):1080–1092.
11. Corrigan PW, Phelan SM. Social support and recovery in people with serious mental illnesses. *Community Ment Health J.* 2004;40(6):513–523.
12. Priebe S, Burns T, Craig TK. The future of academic psychiatry may be social. *Br J Psychiatry.* 2013;202(5):319–320.
13. Tjaden CD, Mulder CL, Delespaul PA, Arntz AR, Kroon H. Attachment as a framework to facilitate empowerment for people with severe mental illness. *Psychother Theor Res Pract Train.* 2021;94(3):407–425.
14. Spaniol L, Wewiorski NJ, Gagne C, Anthony WA. The process of recovery from schizophrenia. *Int Rev Psychiatry.* 2002;14(4):327–336.
15. Mikulincer M, Shaver PR. *Attachment in Adulthood: Structure, Dynamics, and Change.* New York, NY: Guilford Press; 2007.
16. Bowlby EJM. *Attachment: Volume One of the Attachment and Loss Trilogy.* London: Random House; 2008.
17. Bowlby J. Attachment and loss v. 3 (Vol. 1). In: Furman W, Buhrmester D, eds. *Methods and Measures: The ...; 1969.* London: Random House; 2009.

18. Bowlby J. Attachment and loss: retrospect and prospect. *Am J Orthopsychiatry*. 1982;52(4):664–678.
19. Ainsworth MDS, Blehar MC, Waters E, Wall SN. *Patterns of Attachment: A Psychological Study of the Strange Situation*. New York, NY: Psychology Press; 2015.
20. Main M, Solomon J. *Discovery of an Insecure-Disorganized/Disoriented Attachment Pattern*; 1986.
21. Main M, Solomon J. Procedures for identifying infants as disorganized/disoriented during the Ainsworth Strange Situation. In: *Attachment in the Preschool Years: Theory, Research, and Intervention*. Vol 1; 1990:121–160.
22. Bartholomew K, Horowitz LM. Attachment styles among young adults: a test of a four-category model. *J Pers Soc Psychol*. 1991;61(2):226–244.
23. Restek-Petrović B, Bogović A, Grah M, Filipčić I, Ivezic E. Personality characteristics of psychotic patients as possible motivating factors for participating in group psychotherapy. *Psychiatr Danub*. 2015;1:364–370.
24. van Bussel E, Nguyen N, Wierdsma A, van Aken B, Willems I, Mulder C. Adult attachment and personal, social, and symptomatic recovery from psychosis: systematic review and meta-analysis. *Front Psychiatry*. 2021;12:144.
25. Wickham S, Sitko K, Bentall R. Insecure attachment is associated with paranoia but not hallucinations in psychotic patients: the mediating role of negative self-esteem. *Psychol Med*. 2015;45(7):1495.
26. Berry K, Roberts N, Danquah A, Davies L. An exploratory study of associations between adult attachment, health service utilisation and health service costs. *Psychosis*. 2014;6(4):355–358.
27. van Aken BC, Bakia A, Wierdsma AI, et al. UP'S: a cohort study on recovery in psychotic disorder patients: Design protocol. *Front Psychiatry*. 2021;11:1487.
28. van Aken B, Wierdsma A, Voskes Y, Pijnenborg G, van Weeghel J, Mulder C. The association between executive functioning and personal recovery in people with psychotic disorders. *Schizophr Bull*. 2022;3(1):sgac023.
29. Berry K, Wearden A, Barrowclough C, Liversidge T. Attachment styles, interpersonal relationships and psychotic phenomena in a non-clinical student sample. *Pers Individ Differ*. 2006;41(4):707–718.
30. Berry K, Barrowclough C, Wearden A. Adult attachment, perceived earlier experiences of care giving and trauma in people with psychosis. *J Ment Health*. 2009;18(4):280–287.
31. Korver-Nieberg N, Meijer CJ, Koeter MW, de Haan L. 5Adult attachment in samples of psychotic patients. *Attachment Psychos*. 2014;89:90–101.
32. Ion R, Monger B, Hardie S, Henderson N, Cumming J. A tool to measure progress and outcome in recovery. *Br J Nurs*. 2013;2(4):211–215.
33. Monger B, Hardie SM, Ion R, Cumming J, Henderson N. The individual recovery outcomes counter: preliminary validation of a personal recovery measure. *Psychiatrist*. 2013;37(7):221–227.
34. Beckers T, Koekkoek B, Hutschemaekers G, Rudd B, Tiemens B. Measuring personal recovery in a low-intensity community mental healthcare setting: validation of the Dutch version of the individual recovery outcomes counter (I. ROC). *BMC Psychiatry*. 2022;22(1):1–10.
35. van Aken B, de Beurs E, Mulder C, van der Feltz-Cornelis C. The Dutch Recovering Quality of Life questionnaire (ReQoL) and its psychometric qualities. *Eur J Psychiatry*. 2020;34(2):99–107.
36. Keetharuth A, Brazier J, Connell J, et al. Development and validation of the Recovering Quality of Life (ReQoL) outcome measures. EEPUR Technical Research Report 050 Policy Research Unit in Economic Evaluation of Health and Care Interventions. University of Sheffield and York; 2017.
37. Kay SR, Fiszbein A, Opler LA. The positive and negative syndrome scale (PANSS) for schizophrenia. *Schizophr Bull*. 1987;13(2):261–276.
38. Van Os J, Kahn R. Remission criteria in schizophrenia. *Tijdschr Psychiatr*. 2007;49(1):21–26.
39. Lin CH, Lin HS, Lin SC, Kuo CC, Wang FC, Huang YH. Early improvement in PANSS-30, PANSS-8, and PANSS-6 scores predicts ultimate response and remission during acute treatment of schizophrenia. *Acta Psychiatr Scand*. 2018;137(2):98–108.
40. Rosseel Y. An R package for structural equation modeling. *J Stat softw*. 2012;48:1–36.
41. Team RC. R: A language and environment for statistical computing. R Foundation for Statistical Computing, Vienna, Austria. <https://www.r-project.org/>. Accessed 3 June 3, 2017; 2013.
42. Korver-Nieberg N, Meijer C, Koeter M, de Haan L. Adult attachment in samples of psychotic patients and siblings at high risk for psychosis: validation of the “Psychosis Attachment Measure”. *J Soc Pers Relat*. 2014.;:–
43. Chua YC, Wong HH, Abidin E, et al. The recovering quality of life 10-item (ReQoL-10) scale in a first-episode psychosis population: validation and implications for patient-reported outcome measures (PROMs). *Early Interv Psychiatry*. 2021;15(5):1127–1135.
44. Pos K, Bartels-Velthuis AA, Simons CJ, et al. Theory of Mind and attachment styles in people with psychotic disorders, their siblings, and controls. *Aust N Z J*. 2015;49(2):171–180.
45. Gillath O, Karantzas G. Attachment security priming: a systematic review. *Curr Opin Psychol*. 2019;25:86–95.
46. Liddle HA, Schwartz SJ. Attachment and family therapy: clinical utility of adolescent-family attachment research. *Fam Process*. 2002;41(3):455–476.
47. Stavrianopoulos K, Faller G, Furrow JL. Emotionally focused family therapy: facilitating change within a family system. *J Couple Relatsh Ther*. 2014;13(1):25–43.
48. Travis LA, Bliwise NG, Binder JL, Horne-Moyer HL. Changes in clients' attachment styles over the course of time-limited dynamic psychotherapy. *Psychol Psychother*. 2001;38(2):149.
49. Mikulincer M, Shaver, P.R. *Attachment in Adulthood. Structure, Dynamics, and Change*. New York, NY: The Guilford Press; 2007.
50. Berry K, Barrowclough C, Wearden A. Attachment theory: a framework for understanding symptoms and interpersonal relationships in psychosis. *Behav Res Ther*. 2008;46(12):1275–1282. doi:10.1016/j.brat.2008.08.009.
51. Berry K, Bucci S, Danquah AN. *Attachment Theory and Psychosis: Current Perspectives and Future Directions*. 2019.
52. Pinquart M, Feußner C, Ahnert L. Meta-analytic evidence for stability in attachments from infancy to early adulthood. *Attach Hum Dev*. 2013;15(2):189–218.
53. Korver-Nieberg N, Berry K, Meijer C, de Haan L, Ponizovsky AM. Associations between attachment and psychopathology dimensions in a large sample of patients with psychosis. *Psychiatry Res*. 2015;228(1):83–88.
54. Berry K, Barrowclough C, Wearden A. A review of the role of adult attachment style in psychosis: unexplored

- issues and questions for further research. *Clin Psychol Rev.* 2007;27(4):458–475.
55. Olbert CM, Penn DL, Reise SP, *et al.* Assessment of attachment in psychosis: a psychometric cause for concern. *Psychiatry Res.* 2016;246:77–83.
 56. Pollard C, Bucci S, MacBeth A, Berry K. The revised psychosis attachment measure: measuring disorganized attachment. *Br J Clin Psychol.* 2020;59(3):335–353.
 57. Mallinckrodt B. Attachment, social competencies, social support, and interpersonal process in psychotherapy. *Psychother Res.* 2000;10(3):239–266.
 58. Santoro G, Midolo LR, Costanzo A, Schimmenti A. The vulnerability of insecure minds: the mediating role of mentalization in the relationship between attachment styles and psychopathology. *Bull Menn Clin.* 2021;85(4):358–384.
 59. Bateman AW, Fonagy PE. *Handbook of Mentalizing in Mental Health Practice.* Washington, DC: American Psychiatric Publishing, Inc.; 2012.
 60. Korver-Nieberg N, Berry K, Meijer CJ, De Haan L. Adult attachment and psychotic phenomenology in clinical and non-clinical samples: a systematic review. *Psychol Psychother.* 2014;87(2):127–154.
 61. Weijers J, Fonagy P, Eurelings-Bontekoe E, Termorshuizen F, Viechtbauer W, Selten J. Mentalizing impairment as a mediator between reported childhood abuse and outcome in nonaffective psychotic disorder. *Psychiatry Res.* 2018;259:463–469.
 62. Weijers J, Ten Kate C, Debbané M, *et al.* Mentalization and psychosis: a rationale for the use of mentalization theory to understand and treat non-affective psychotic disorder. *J Contemp Psychother.* 2020;50:223–232.
 63. Byng-Hall J. The significance of children fulfilling parental roles: implications for family therapy. *J Fam Ther.* 2008;30(2):147–162.
 64. Levy KN, Meehan KB, Kelly KM, *et al.* Change in attachment patterns and reflective function in a randomized control trial of transference-focused psychotherapy for borderline personality disorder. *J Consult Clin Psychol.* 2006;74(6):1027–1040.
 65. Fonagy P, Allison E. The role of mentalizing and epistemic trust in the therapeutic relationship. *Psychotherapy.* 2014;51(3):372.
 66. Fonagy P, Luyten P, Allison E. Epistemic petrification and the restoration of epistemic trust: a new conceptualization of borderline personality disorder and its psychosocial treatment. *J Pers Disord.* 2015;29(5):575–609.
 67. Fonagy P, Campbell C, Bateman A. Mentalizing, attachment, and epistemic trust in group therapy. *Int J Group Psychother.* 2017;67(2):176–201.