

The Interactive Effect of Metacognition and Self-Compassion on Predicting Meaning in Life Among Individuals With Schizophrenia

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Objective: Metacognition among people with schizophrenia is associated with desired outcomes but can also lead to the experience of psychological pain, affecting the individual's sense of meaning in life. The aim of the current study was to investigate whether the effect of metacognition on meaning in life was dependent on one's level of self-compassion. Hypotheses were that both metacognition and self-compassion would be positively associated with meaning in life, and that the association between metacognition and meaning in life would be greater among people with high self-compassion than among people with low self-compassion. **Method:** The baseline data of 33 adults with schizophrenia, who were enrolled in a metacognitive reflection insight therapy (MERIT) trial, were used. Participants filled out self-report questionnaires regarding meaning in life and self-compassion, and were interviewed for an assessment of their metacognitive abilities. Analysis included a calculation of correlations and multiple linear regression models. **Results:** Correlational analysis showed that 2 subscales of self-compassion (self-kindness and mindfulness) and 1 subscale of metacognition (mastery) were related to meaning in life. Consistent with our hypotheses, regression analysis showed a moderating effect of self-compassion. Metacognition was found to have a positive significant correlation with meaning in life among participants who reported high levels of self-compassion. This effect was insignificant among participants reporting low or moderate levels of self-compassion. **Conclusions:** Among individuals with schizophrenia, self-compassion seems to be crucial in the ability to successfully utilize metacognition for attaining meaning in life. Implications for psychotherapy with people who have schizophrenia are discussed.

Impact and Implications

Metacognition was found to have a positive significant correlation with meaning in life among participants who reported high levels of self-compassion and not among participants reporting low/moderate levels of self-compassion. These results highlight the importance of factors that enhance resilience and positive regard such as self-compassion in negotiating the paradoxical effects of awareness on outcome measures, among people with schizophrenia.

Keywords: self-compassion, metacognition, schizophrenia, meaning

An interesting observed phenomenon in the study of insight and awareness is that reflective abilities are not always connected to positive outcomes. This phenomenon among the general population was framed by Taylor and Brown (1988) as the “illusion of well-being,” illustrating the process by which individuals use

denial of painful information and experiences defensively. Among individuals with psychoses, specifically, it has been shown that while awareness of their illness label is related to positive outcomes, such as engagement with treatment (McEvoy, 1998), it is also related to poor psychological outcomes, such as reduced hope

Editor's Note. Sandra G. Resnick served as the action editor for this article.—SGR

This article was published Online First April 9, 2020.

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and quality of life (e.g., Hasson-Ohayon, Kravetz, Meir, & Rozenzweig, 2009), likely a result of the strong association between insight into the illness and internalization of the stigma (Ehrlich-Ben Or et al., 2013; Lysaker, Roe, & Yanos, 2007). With awareness, in other words, may come a recognition of loss and personal limitations (Lysaker, Buck, Salvatore, Popolo, & Dimaggio, 2009). Exploring the implications of metacognition—a broader integrative form of awareness than insight—it is evident that in addition to its being associated with positive results, metacognition is sometimes associated with undesirable outcomes such as reduced social quality of life, presumably via emotional pain related to reflecting on challenging issues (Hasson-Ohayon et al., 2014).

One way to make sense of this paradox is to propose that the effects of awareness on outcome are dependent on the way we process reflective knowledge. One promising variable worth examining is self-compassion, which might affect the relationship between awareness and outcome as it relates to the way individuals accept their painful experiences (Neff, 2003a, 2003b). According to this idea, having high self-compassion—that is, treating suffering with a kind and nonjudgmental attitude (Neff, 2003b)—can protect one from the possible negative implications of painful reflective knowledge, such as demoralization. To test this idea—that self-compassion moderates the effect of self-awareness—we chose the variable of “meaning in life” as an outcome. Meaning in life, which for the purposes of this paper shall serve as the abbreviated equivalent of “finding more meaning in life,” serves as the foundation for interpreting both challenges and personal achievements during the life course (Baumeister, 1991). Meaning in life also buffers psychological stress (Steger, 2013) and helps people endure suffering (Frankl, 1963). As for metacognition, we chose this variable as it presents a multidimensional, comprehensive approach to awareness (Lysaker & Dimaggio, 2014), to be more fully detailed later. The current study thus examined whether among individuals with high self-compassion, high metacognition would be more beneficial in enhancing sense of meaning in life than for individuals with low self-compassion.

Metacognition, as recently defined, is a set of related reflective abilities that include self-reflection (i.e., the ability to think about one’s own mental states); understanding the minds of others (i.e., the ability to reflect about others’ mental states); decentration (i.e., the ability to observe oneself and others in the larger social context); and mastery (i.e., the ability to use self-knowledge when responding to challenges and problems; Lysaker & Dimaggio, 2014). Studies have shown that people with schizophrenia are more likely to experience deficits in metacognition and to exhibit a lower metacognitive ability than are healthy individuals (Popolo et al., 2017; Rabin et al., 2014). These deficits among people with schizophrenia are linked to poorer psychosocial functioning (Lysaker, Dimaggio, et al., 2010), poorer clinical outcome (Arnon-Ribinfeld, Hasson-Ohayon, Lavidor, Atzil-Slonim, & Lysaker, 2017), and less subjective recovery (Kukla, Lysaker, & Salyers, 2013). Interestingly, these metacognitive functions have been shown to be related to the ability to structure a clear and coherent narrative of self (Lysaker, Ringer, Maxwell, McGuire, & Lecomte, 2010) and to construct a consistent subjective sense of personal identity (Lysaker, Dimaggio, et al., 2010), leading to a greater sense of meaning in life (Lysaker, Ringer, et al., 2010). Particularly relevant in the context of sense of meaning in life is the

metacognitive skill of mastery: the ability to use self-knowledge for the purpose of setting and pursuing personally important goals, in different situations (Lysaker, Erickson, Buck, et al., 2011). A widely accepted definition of meaning in life focuses on the centrality of setting/pursuing personally important goals in order to attain such a sense of meaning (Battista & Almond, 1973).

More broadly defined, meaning in life can be viewed as one’s having a sense of purpose in life, or as the search for or attainment of subjective worthwhile goals, accompanied by a sense of fulfillment (Ho, Cheung, & Cheung, 2010). The construction of worthwhile goals constitutes the cognitive aspect of meaning in life, while the experience and emotion of fulfilling them constitutes the affective aspect (Brandstätter et al., 2014). Generally, there has been uniform agreement among existential theories that the search for and attainment of meaning in life is always important (Steger, Frazier, Kaler, & Oishi, 2006), but in challenging times, such as in the process of recovery from mental illness, it might be of even greater importance. Studies have shown that searching for and attaining meaning in life plays a central role in the process of recovery (Andresen, Oades, & Caputi, 2003; Deegan, 1988). Indeed the presence of meaning and purpose in life among people with schizophrenia has been found to be positively associated with quality of life, medical adherence (Stolovy, Lev-Wiesel, Doron, & Gelkopf, 2009), self-esteem, and quantity and quality of interpersonal relationships, and has been found to be negatively associated with hopelessness (Huguelet et al., 2016) and depression (Huguelet et al., 2016; Stolovy et al., 2009).

Metacognition, helpful in one’s construction of a sense of meaning in life, can be aided by self-compassion. Self-compassion refers to an individual’s ability to acknowledge his or her own suffering, and an expressed desire to treat this suffering with a mindful, kind, and nonjudgmental attitude rather than with avoidance or criticism (Neff, 2003b). Among people with schizophrenia recovering from a recent psychosis, self-compassion has been found to promote empowerment, recovery, and growth (Waite, Knight, & Lee, 2015), and interventions focusing on self-compassion have yielded reduced depression and symptomatology levels, reduced stigma and fear of recurrence and increased self-esteem (Eicher, Davis, & Lysaker, 2013; Laithwaite et al., 2009; Mayhew & Gilbert, 2008). A recent study showed that awareness of the other (i.e., one aspect of metacognition) was related to self-compassion (Hochheiser, Lundin, & Lysaker, 2020). Thus, while self-compassion seems to be related to reflective processes and to yield positive outcomes, the integrative effect of metacognition and self-compassion on meaning in life has yet to be explored.

Previous studies have shown that self-compassion plays a role in one’s having a sense of meaning in life. In a study conducted in the field of aging, high self-compassion predicted a high sense of meaning in life (Phillips & Ferguson, 2013). In addition, according to Neff and Dahm (2015), being mindful of one’s own suffering and responding to it with kindness helps the individual cope with his or her struggles and create a balanced state of mind that reduces suffering and elevates a sense of meaning in life (Neff & Dahm, 2015). Self-compassion also fosters a positive self-attitude (Neff, 2003b), likely necessary for the establishment of Battista’s and Almond’s definition of a meaningful life, termed “positive life regard,” or the belief that one is fulfilling his or her valued life-goals (Battista & Almond, 1973).

Based on the literature reviewed above, it was hypothesized that both metacognition and self-compassion would be positively related to meaning in life among individuals diagnosed with schizophrenia. Accordingly, being more reflective and having more compassion toward oneself would be associated with people ascribing more meaning to their lives. In addition, self-compassion was expected to moderate the relation between metacognition and meaning in life, with a stronger association among people with high self-compassion.

Method

Participants

Participants in this study were 33 adults who enrolled in the metacognitive reflection insight therapy (MERIT) trial at the Psychology Community Clinic at Bar-Ilan University in Israel (trial number: NCT03427580). Participants approached the clinic voluntarily, seeking therapy due to psychological problems and having been diagnosed with schizophrenia spectrum disorders. The current study was based on the baseline, pretherapy, data of these participants. Exclusion criteria were hospitalization in a psychiatric institution in the previous 6 months; having a diagnosed neurological disorder, substance use problem, or acute psychosis; and being at risk for suicidal behavior. Participants' sociodemographic and illness characteristics are presented in Table 1.

Table 1
Sociodemographic and Illness Characteristics of Participants

Categorical	<i>N</i>	%
Gender		
Male	24	72.7
Female	9	27.3
Employment		
Full-time	6	18.2
Part-time	16	48.5
% supportive employment	9	41.0
Unemployed	11	33.3
Marital status		
Single	24	72.7
Married	4	12.1
Divorced	4	12.1
Widowed	0	0
In a steady relationship	1	3
Residence		
Alone	7	21.2
With parents	12	36.4
Roommate(s)	5	15.2
Spouse	2	6.1
With children	1	3
Spouse and children	3	9.1
Other	3	9.1
Previous treatment		
Yes	29	87.9
No	4	12.1
Continuous	Mean	<i>SD</i>
Age	38.8	9.432
Education	12.56	1.966
Years since diagnosis	16	9.855
Hospital admissions	2.84	2.665

Measures

Meaning in life. Meaning in life was assessed via the Hebrew version of the Life Regard Index (LRI; Battista & Almond, 1973). The index consists of two subscales: (a) framework (FR), a personal perspective from which important life goals can be derived; and (b) fulfillment (FU), a feeling of fulfillment regarding these goals or the movement toward them. The LRI consists of 28 items rated on a Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). Test–retest reliability of the LRI was found to be excellent ($r = .94$; Battista & Almond, 1973). The LRI has also demonstrated strong internal consistency in a consistent manner (Zika & Chamberlain, 1992). Internal consistency of the Hebrew version was also found to be strong (Cronbach's $\alpha = .90$; Ehrlich-Ben Or et al., 2013). In the current study we found excellent internal consistency of the total score (Cronbach's $\alpha = .91$), and good internal consistency of the FR and FU subscales (Cronbach's $\alpha = .82, .87$, respectively).

Metacognition. Metacognition was assessed via the Metacognition Assessment Scale-Abbreviated (MAS-A; Lysaker et al., 2005), on the basis of interviews conducted in accordance with the Indiana Psychiatric Illness Interview (IPII; Lysaker, Clements, Plascak-Hallberg, Knipscheer, & Wright, 2002). The IPII is a semistructured interview that assesses a person's narrative of dealing with mental illness. The interview is conducted by a trained psychologist and lasts from 30–60 min. The interview consists of five parts: (a) establishing rapport and encouraging in-depth descriptions of the interviewee's life story, (b) inquiring into the interviewee's perception of the diagnosed mental illness, (c) inquiring into the interviewee's perceptions of what caused changes to occur in his or her interpersonal and psychological life activities, (d) inquiring into the interviewee's perceived ability to control his or her condition and whether he or she feels that it was affected by others or, conversely, whether others were affected by his or her condition. Lastly, (e) interviewees are asked about their perceptions of the possibility of change in domains of interpersonal and psychological functioning in the future. Responses are later transcribed and analyzed by a research assistant according to the MAS-A. The MAS-A consists of four domains that reflect one's ability to understand different mental phenomena and use this understanding in order to cope with other psychological challenges: (a) self-reflectivity (ability to comprehend one's own mental states); (b) understanding the mind of the other (ability to comprehend others' mental states); (c) decentration (the ability to comprehend that the world exists with others having independent motives and desires); and (d) mastery (the ability to use psychological self-knowledge when responding to social and psychological challenges). Each of these four subscales is rated on a different matching scale: Self-reflectivity and mastery are on a 0–9 scale; understanding of others is on a 0–7 scale; and decentration is on a 0–4 scale. Higher scores indicate a higher complexity of functions and ideas in each domain. The interrater reliability of the MAS-A was found to be high, from 0.61 for decentration up to 0.93 for the total score (Lysaker et al., 2008). The test–retest reliability of the MAS-A was found to be high, with Cronbach's α of 0.68 for decentration, 0.7 for understanding the mind of the other, 0.73 for mastery, 0.88 for self-reflectivity, and 0.85 for the total score (Lysaker, Hillis, Leonhardt, Kukla, & Buck, 2014). In the current

study, interrater reliability of the MAS-A was found to be high (.88).

Self-compassion. Self-compassion was assessed via the Self-Compassion Scale (SCS; Neff, 2003a). The SCS is a 26-item scale that assesses six aspects of self-compassion, three of which are considered positive: (a) self-kindness, (b) common humanity, and (c) mindfulness. Three are considered negative: (d) self-judgment, (e) isolation, and (f) overidentification. The negative items are reversely coded. Responses are given on a 5-point Likert scale, ranging from 1 (*almost never*) to 5 (*almost always*). Subscale scores are calculated as the mean score of items on each subscale. The total score is calculated by reversing the scores on the negative subscales and then summing all subscale scores. Support has been provided recently for the use of both total score and the six subscales (Cleare, Gumley, Cleare, & O'Connor, 2018). Higher scores indicate higher levels of self-compassion. In a study by Galili-Weinstock et al. (2018), the internal reliability of the SCS in its Hebrew version was found to be high (Cronbach's alpha = .91). The scale also demonstrated predictive, convergent, and discriminant validity (Neff, 2003a). The current study found good internal consistency of the total score (Cronbach's alpha = .86). Internal consistency of the subscales was found to be good for isolation (Cronbach's alpha = .83); acceptable for overidentification, common humanity, and self-kindness (Cronbach's alpha = .71, .78, .79, respectively); and moderate for self-judgment and mindfulness (Cronbach's alpha = .68, .60, respectively).

Procedure

The study was conducted at Bar-Ilan University's Psychology Community Clinic, based on materials gathered from clients in the MERIT trial. Approval for the study was obtained from the ethics committee of the Department of Psychology at Bar-Ilan University. At the time of this study, 33 clients were recruited to the MERIT trial via social media and advertisements in different mental health centers in Israel. During intake sessions of the MERIT trial, participants signed consent forms for participating in a series of studies conducted by the Rehabilitation Psychology Research Lab at Bar-Ilan University. Later, participants filled out

a battery of questionnaires including the SCS and LRI that were administered digitally on a computer screen using the Qualtrics program. The IPII was then administered by a trained psychologist, and responses were digitally recorded. Recordings were later transcribed and coded into the MAS-A scales by a research assistant who received training in the use of the MAS-A coding system.

Analytic Strategy

First, Pearson correlation coefficients between the study variables and the background sociodemographic variables were calculated in order to identify possible confounders to be included in further analyses. Next, Pearson correlation coefficients were calculated between the study variables in order to identify relations between meaning in life, metacognition, and self-compassion. Process Macro (Hayes, 2017) was used to examine self-compassion as a moderator of the association between metacognition and meaning in life.

Results

Intercorrelations Between the Study's Variables

Pearson correlations between demographic variables and the study's variables revealed a significant correlation between the SCS's common humanity subscale and participant's age, $r = .371$, $p = .036$. Thus, we conservatively included age as a potential confounding variable (covariate) in the moderation model. Intercorrelations between the study's variables and subscales are presented in Table 2. Meaning in life was found to be positively associated with the self-compassion total score and with two self-compassion subscales (self-kindness and mindfulness), and it was negatively associated with the isolation subscale. Meaning in life was also found to be positively associated with the metacognitive skill of mastery, but not with other measures of metacognition, including the total score. Correlations of the two meaning-in-life subscales, FR and FU, showed a similar trend, except for (a) the negative association between the FU subscale and self-compassion's self-judgment subscale, (b) the lack of significant

Table 2
Correlations Between Study's Variables

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. LRI total	1.00														
2. LRI framework	.947**	1.00													
3. LRI fulfillment	.953**	.806**	1.00												
4. MAS-A total	.148	.195	.092	1.00											
5. MAS-A S	.193	.207	.163	.859**	1.00										
6. MAS-A O	-.062	-.057	-.059	.690**	.523**	1.00									
7. MAS-A D	-.215	-.193	-.213	.678**	.461**	.294	1.00								
8. MAS-A M	.360*	.448**	.244	.839**	.597**	.386*	.480**	1.00							
9. SCS total	.452**	.412*	.447**	-.135	-.094	-.179	-.221	.000	1.00						
10. SCS self-judgment	-.312	-.141	-.443**	.179	.018	.163	.095	.262	-.620**	1.00					
11. SCS isolation	-.360*	-.313	-.371*	.052	.082	.205	.053	.052	-.758**	.650**	1.00				
12. SCS over-identification	-.051	-.031	.066	.091	.076	.153	.002	-.166	-.740**	.604**	.728**	1.00			
13. SCS self-kindness	.407*	.369*	.403*	-.147	-.076	-.106	-.269	-.067	.776**	.335	-.259	-.315	1.00		
14. SCS common humanity	.277	.324	.207	-.189	-.243	-.132	-.262	-.005	.498**	-.180	-.049	-.028	.636**	1.00	
15. SCS mindfulness	.479**	.548**	.368*	.147	.180	.072	-.247	.298	.708**	.130	-.370*	-.327	.682**	.484**	1.00

Note. LRI = Life Regard Index; MAS-A = Metacognition Assessment Scale-Abbreviated; SCS = Self-Compassion Scale.

* $p < .05$. ** $p < .01$.

association between the FU subscale and mastery, and (c) the lack of significant association between the FR subscale and self-compassion's isolation subscale.

Moderation Effect of Self-Compassion

In order to test our hypothesis concerning the moderating role of self-compassion in the relation between metacognition and meaning in life, we conducted two regression analyses via the SPSS's Process module. The first regression included the meaning-in-life total score as the dependent variable, the metacognition total score as the predictor, and the self-compassion total score as the moderator. The second regression was based on significant findings in the correlational analysis and included the subscales that were found to have strong significant correlations with each other. Results of the first regression model, which examined the total scores, are presented in Table 3. The regression model included total scores of self-compassion and metacognition, and the interaction between self-compassion and metacognition, as predictors of meaning in life. The regression model was found to be significant, $F(4, 28) = 4.516, p = .006, R^2 = .39$. It revealed a significant negative main effect of metacognition on meaning in life, and a significant effect of the Metacognition $\times$ Self-Compassion interaction. The interaction was probed by using the Johnson-Neyman technique that derives the value of the moderator (self-compassion) at the exact point of significance of the conditional effect (metacognition as predicting meaning in life). The Johnson-Neyman technique revealed a significant positive conditional effect (relation between metacognition and meaning of life) at values of self-compassion above 18.82. At values of self-compassion under 14.97, the effect of metacognition upon meaning in life was increasingly negative but not significant.

Figure 1 presents the interaction effect at three levels of self-compassion: the mean, one standard deviation below the mean, and one standard deviation above the mean (see Figure 1). Metacognition was positively associated with meaning in life only when self-compassion was at the mean or one standard deviation above the mean.

The second regression model included the meaning-in-life FR subscale as the dependent variable, metacognitive mastery as the predictor, and the self-compassion mindfulness subscale as a mod-

erator. Results of this regression model are presented in Table 3. The regression model was found to be significant, $F(3, 29) = 11.277, p = .000, R^2 = .54$, and revealed a negative main effect of mastery on the meaning-in-life framework subscale, as well as a significant Mastery $\times$ Mindfulness interaction. The interaction was probed by using the Johnson-Neyman technique that revealed a significant positive conditional effect (relation between mastery and meaning-in-life framework) at values of mindfulness above 3.41. At values of mindfulness under 2.8, the effect of mastery upon meaning-in-life framework was increasingly negative but not significant.

Figure 2 presents the interaction effect at three levels of mindfulness: the mean, one standard deviation below the mean, and one standard deviation above the mean (see Figure 2). Metacognition was positively associated with the meaning-in-life framework at different levels of mindfulness (the mean, one standard deviation below the mean, or one standard deviation above the mean).

Discussion

The current study aimed to extend the existing research regarding factors that contribute to meaning in life among people with schizophrenia, and to further illuminate the putative paradoxically negative impact of the capacity for self-reflection on this outcome measure (i.e., meaning in life). On the basic correlational level, we found a positive association between self-compassion and meaning in life on the two meaning-in-life subscales, and a positive association between metacognitive mastery (but not of the total metacognition score or of the other metacognition submeasures) and the meaning-in-life total score and the meaning-in-life FR subscale. However, when using regression analyses to examine main effects and interaction effects, a richer and more complex pattern of results emerged. According to these findings, and inconsistent with our hypotheses, we were unable to detect a main effect of self-compassion on meaning in life. In addition, contrary to our hypotheses, we found a negative main effect of metacognition on meaning in life. However, the hypothesized interaction effect was confirmed: The effect of metacognition on meaning in life was found to be dependent on the level of self-compassion. A further investigation into the nature of the interaction revealed that for individuals with high self-compassion, a positive association be-

Table 3
Regression Analysis—Total Self-Compassion and Mindfulness as Moderating the Relationship Between Metacognition, Mastery, and Meaning in Life or Life Framework

Variable	R^2	B	$SE\ B$	β
Model 1				
Model	.392**			
Self-compassion (SCS)		-.188	.118	-.968
Metacognition (MAS-A)		-.326	.156	-1.48*
Self-Compassion $\times$ Metacognition		.021	.009	2.11*
Age		-.007	.011	-.093
Model 2				
Model	.538***			
Mindfulness (SCS)		-.653	.383	-.660
Mastery (MAS-A)		-.837	.338	-1.49*
Mindfulness $\times$ Mastery		.290	.095	2.42**

Note. SCS = Self-Compassion Scale; MAS-A = Metacognition Assessment Scale-Abbreviated.

* $p < .05$. ** $p < .01$. *** $p < .001$.

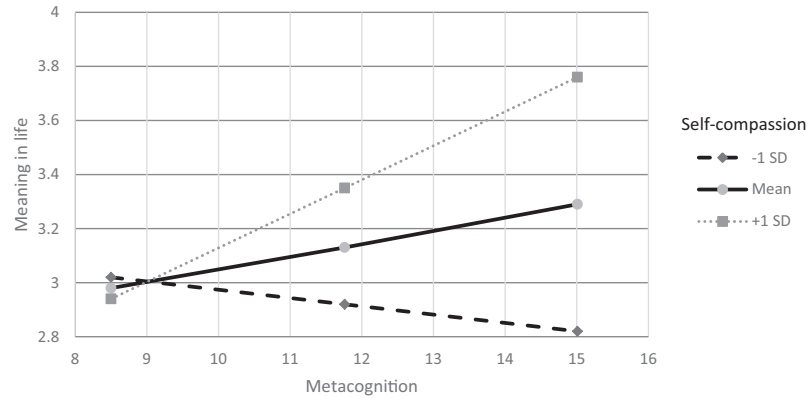


Figure 1. Effects of metacognition on meaning of life at different levels (-1 SD, mean, $+1$ SD) of self-compassion.

tween metacognition and meaning in life existed, while for persons with low or moderate self-compassion it did not. A similar interaction effect was found when looking at the metacognitive ability of mastery, the self-compassion dimension of mindful observation, and the FR aspect of meaning in life, with the exception of a significant positive association in the moderate levels of mindful self-observation (and not only at the higher level, as in the regression with the total scores).

The negative effect of metacognition on meaning in life is consistent with previous research highlighting the possibility that metacognition and other measures representing awareness, such as insight into the disorder, might have undesirable outcomes, such as reduced social quality of life. This reduced social quality of life may be a result of emotional distress that arises during the process of reflecting on challenging issues, as in the case of metacognition (Hasson-Ohayon et al., 2015); increased levels of depression (Belvederi Murri et al., 2016), lower sense of quality of life (Hasson-Ohayon et al., 2009; Lysaker et al., 2007), hopelessness, and lowered self-esteem (Lysaker et al., 2007), as in the case of insight into the illness; and an increase in depression resulting from a tendency for self-rumination, as in the case of self-reflection in

depression (Takano & Tanno, 2009). Our results suggest that self-compassion affects the outcome of the reflective process, as self-compassion relates to the acceptance of painful experiences and one's vulnerabilities; that is, it seems to provide the positive self-attitude (Neff, 2003b) needed to help "steer" the effects of metacognition on meaning in life. In other words, self-compassion might protect an individual from the possible negative effects of metacognition on meaning in life and enhance the usefulness of one's reflective knowledge in the process. This idea may also be related to self-compassion providing the freedom to explore both painful and fulfilling aspects of life in a balanced way, as in secure attachment (Gumley & Macbeth, 2014). If metacognition is a double-edged sword, according to this conceptualization, then self-compassion might be seen not only as buffering the negative effects, but also as influencing the nature of the relations between the two (i.e., metacognition and meaning in life), helping the individual use metacognitive abilities to his or her advantage.

This idea, of self-compassion facilitating the use of reflective knowledge, was also found in the specific case of the mastery subscale of metacognition. Metacognitive mastery, as depicted in the existing literature, is expected to assist individuals in the

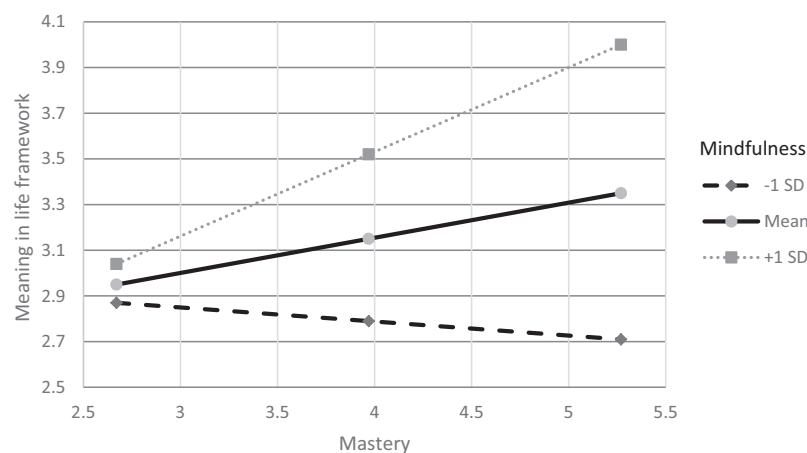


Figure 2. Effects of mastery on meaning-in-life framework at different levels (-1 SD, mean, $+1$ SD) of mindfulness.

setting of personally important goals (Lysaker, Erickson, Buck, et al., 2011). This ability, at least theoretically, should promote the creation of a framework of goals, which constitutes the cognitive aspect of meaning in life (Brandstätter et al., 2014). According to the current study, this putative positive effect is dependent on one's mindful self-observation. Together, mastery and mindful observation seem to produce a positive effect, suggesting that mastery's impact might be negotiated through the capacity for mindful self-awareness, which includes facing existing emotions and thoughts without criticism, avoidance, or repression (Neff & Dahm, 2015). By doing so, the individual might allow him/herself access to a more comprehensive self-knowledge and, as a result, might be able to construct a more detailed framework of personally important goals for the attainment of meaning in life.

The current study's results regarding self-compassion's contribution to meaning in life is consistent with previous research conducted in the field of aging (Phillips & Ferguson, 2013). They provide further support for Neff and Dahm's assumption about the importance of self-compassion in promoting a sense of meaning in life (Neff & Dahm, 2015) and, as such, help extend these understandings to the field of schizophrenia. Fostering self-compassion among people with schizophrenia seems critical, given that both self-compassion and meaning in life have previously been found to be associated with recovery from mental illness (Andresen et al., 2003; Waite et al., 2015). In addition, our results align with previous research regarding the positive contribution of self-compassion to different measures among people with schizophrenia, such as empowerment, recovery, and growth (Waite et al., 2015).

Our results regarding metacognition are also consistent with previous research highlighting the positive potential of addressing metacognitive abilities among people with schizophrenia. Metacognitive abilities have been found to predict and foster the ability to construct a more clear and coherent narrative of oneself (Lysaker, Ringer, et al., 2010) and to structure a more consistent sense of personal identity (Lysaker, Dimaggio, et al., 2010), leading to a greater sense of meaning in life as a result (Lysaker, Ringer, et al., 2010). Studies have also shown that mastery is an important element in one's ability to set goals derived from self-knowledge (Lysaker, Erickson, Ringer, et al., 2011), and goal-setting has been found to be integral in the attainment of a sense of meaning in life, as well as being crucial during psychiatric rehabilitation (Slade, 2010). In the course of recovery, achieving personally set goals has previously been shown to enhance self-confidence, hope, a greater sense of identity, and purpose in life (Clarke, Oades, Crowe, Caputi, & Deane, 2009), emphasizing the importance of setting and meeting goals that are based on self-knowledge.

The results of the current study stress the importance of enhancing metacognition in a compassionate environment. Psychotherapy can provide just such an intersubjective space, where the client can engage in a nonjudgmental dialogue, internalize a noncritical attitude, and as a result observe him or herself in a compassionate way. Metacognitive knowledge, applied in this way, will likely be most beneficial. Such dialogical intersubjective approaches have previously been suggested (Hasson-Ohayon, Kravetz, & Lysaker, 2017), and evidence of the effectiveness of metacognitive insight and reflection therapy (Lysaker & Klion, 2017) is accumulating (e.g., de Jong et al., 2019; Vohs et al., 2018).

The current study had a few limitations. First, the sample comprised a relatively small number of participants. Second, this study was cross-sectional; as such, causality cannot be inferred. Third, the distribution of different schizophrenia spectrum disorders in our sample is unknown. Fourth, relative to the fairly small sample, a large number of correlations were calculated, potentially contributing to alpha inflation and biased results. In addition, the internal consistency of the mindfulness subscale that was used to test our second model was found to be moderate, making it more difficult to draw clear conclusions from the results regarding this model. Fifth, meaning in life in this paper was investigated using the self-report LRI questionnaire which consists of items on a Likert scale. This kind of inquiry does not provide qualitative information on the experience of meaning in life nor on the mechanisms and strategies people use in order to find meaning. Future research should inquire into these aspects, as well as replicate the findings of the current study. Finally, additional moderators in the association between metacognition and meaning in life that were not assessed in the current study might also play an important role and should be addressed in future studies. For example, the current study focused on an individual resource (i.e., self-compassion); however, it could be that interpersonal resources such as social support or being in therapy might also moderate the effects of metacognition, as these resources provide an opportunity to negotiate meaning in a supportive context.

Despite these limitations, the current study highlights the idea that metacognitive knowledge should be enhanced in psychotherapy alongside the fostering of self-compassion. As clients become more cognizant of painful aspects of life and of themselves, therapists must also be careful to provide a supportive context in which to address these aspects. Psychological pain is expected in life, and during therapy (Frankl, 1962), and can be an important part of the recovery process (van Weeghel, van Zelst, Boertien, & Hasson-Ohayon, 2019), preferably while ascribing meaning to experiences. In order for one to grow and overcome such pain, however, it seems crucial that self-compassion be integrated with metacognition.

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Received September 9, 2019

Revision received February 17, 2020

Accepted February 18, 2020 ■