Coping styles mediate the association between negative life events and subjective well-being in patients with non-affective psychotic disorders and their siblings

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ABSTRACT

Coping styles are associated with levels of subjective well-being. Negative life events and reduced subjective well-being are more prevalent in patients with psychotic disorders. The aims of the current study were to test a mediation model, with coping styles as potential mediators of the relation between negative life events and subjective well-being in patients with psychotic disorders ($N = 259$), and aimed to repeat the potential mediation model in patients' non-affected siblings ($N = 309$). Data pertains to a subsample of GROUP, a Dutch naturalistic cohort study. The Subjective Well-being under Neuroleptics-20 (SWN-20) scale was used to assess well-being. Coping styles were assessed with the Utrechtse Coping Lijst (UCL). Life events were assessed using an adaptation of the Interview of the Recent Life Event Scale (IRLES). Siblings, but not patients, who experienced negative life events in the previous three year period were more likely to experience a lower well-being. For both groups passive coping styles mediated the relation between negative life events and subjective well-being. Severity of positive, negative or affective symptoms did not change this relationship. Our findings point to a better recognition of copings styles as a therapeutic target to promote well-being and recovery.

1. Introduction

Patients with psychotic disorders experience poorer subjective well-being compared to their siblings (Vothknecht et al., 2013) and to the general population (Bechdolf et al., 2005; Gilleen et al., 2015; Lehman, 1988; Ritsner and Awad, 2007; Vothknecht et al., 2013). Low subjective well-being can persist for several years (Lambert et al., 2009; van Dijk et al., 2018) and is associated with lower chances of reaching symptom remission, restoring social functioning and reaching complete recovery (Lambert et al., 2009). Consequently, subjective well-being has become an important treatment outcome (Lambert et al., 2009; Naber et al., 2013). Clinical variables of influence on subjective well-being in patients with psychotic disorders are the severity of positive, depressive and negative symptoms and the dosage of antipsychotic medication (Haan and Lavalaye, 2000). In particular, subjective well-being is associated with dopamine D_2-receptor occupation by antipsychotic drugs. Subjective wellbeing was found to be associated with striatal dopamine

D_2-receptor blockade is correlated to dosage of antipsychotic drugs ($r = -0.66$) (Mizrahi et al., 2007). However, symptom severity and medication do not fully explain the variance of subjective well-being in the long term (Naber et al., 2001). The impact of individual characteristics, e.g. the personality traits and coping styles, on subjective well-being has been less extensively studied.

Assessment of subjective well-being overlaps with quality of life measurement, especially with the psychological subdomain of the WHO-quality of life questionnaire (Vothknecht et al., 2013). Studies on quality of life in patients with a psychotic disorder show that subjective evaluations are related to various psychosocial concepts, for instance the personality trait neuroticism (negative affectivity) (Boyette et al., 2014; Kentros et al., 1997; Ridgewell et al., 2016), the concept of self-efficacy (Eklund et al., 2003) and the concept of coping styles (Caron et al., 2005; Phillips et al., 2009; Ritsner et al., 2003; Yanos and Moos, 2007).

Coping styles refer to cognitive and behavioral efforts to prevent,

manage or alleviate stress (Lazarus and Folkman, 1984). The capacity to adapt to life events on a cognitive and affective level is associated with the level of subjective well-being in the general population (Diener et al., 2006). Additionally, Diener (2006) suggests that subjective well-being is related to having an internal locus of control (Rotter, 1954), meaning being able to attribute outcome to oneself instead of to external causes (Diener, 1984). Furthermore, significant interactions between locus of control and coping strategies have been reported. Parkes (1984) showed that individuals with internal attribution reported more adaptive coping strategies than those with external locus of control. In clinical research, coping is often conceptualized as a mediator between a stressor and clinical, functional or evaluative outcome. Patients with psychotic disorders face the challenge of coping with different types of stressors, including symptoms (Bak et al., 2001; Lysaker et al., 2001; Macdonald et al., 1998; Rudnick, 2001) as well as everyday life events (Horan et al., 2007; Hultman et al., 1997; Pallanti et al., 1997). In patients with psychotic disorders, coping styles have shown to act as mediators for quality of life measures; Ritsner et al. (2003) found that emotion-oriented coping styles partially mediate the relationship between the distress of psychopathology (anxiety/depression, severity of activation) and psychological distress on the one hand and subjective quality of life, on the other hand. López-Navarro found that problem focused coping styles mediate the relation between positive symptoms and the WHOQOL-psychological subdomain (López-Navarro et al., 2018).

Among the limited amount of studies in this field, Ritsner et al. (2003) showed that task oriented strategies and distraction from the stressor, here assessed with social diversion or a substitute task, is *positively* correlated with levels of quality of life in patients with psychotic disorders. In line with this finding, Caron et al. (2005) found that the coping strategy 'putting effort in changing the situation' is positively correlated with quality of life. Holubova et al. (2015) found positive associations between quality of life and reaction control, positive self-instruction, underestimation, diversion and compensatory satisfaction. Additionally, two studies found that resilience coping (e.g. controlling one's reaction (Beutel et al., 2017) or regulating the emotional response (Hassija et al., 2012) buffered the effects of traumatic experiences on psychiatric symptoms, levels of distress and social support (Beutel et al., 2017; Hassija et al., 2012). Identified coping styles that correlate *negatively* with quality of life are emotional oriented strategies (emotional responses, self-preoccupation, and fantasizing reactions) (Ritsner et al., 2003) and escape tendency, perseveration, resignation, and self-accusation (Holubova et al., 2015). Aforementioned studies have addressed coping styles within different conceptual frameworks. Taken together, active and problem focused strategies seem to positively influence well-being. Emotion oriented and passive strategies seem to negatively affect well-being. Of note, Lazarus and colleagues suggest that passive coping styles are among the emotion-focused styles and are thought to have a transient effect on stress (Lazarus and Folkman, 1984, in Lee et al., 2011). However, by contrast, Rudnick et al. (2001) found no association between emotion-oriented or problem–oriented coping styles and quality of life, which could be related to insufficient power due to a relatively small sample size (N = 58).

So far, the potential mediating effect of coping styles on the association between recent life events and subjective well-being in patients with a psychotic disorder has not been studied. In the current study, we will focus on a cohort of patients with psychotic disorders and their healthy siblings to investigate whether similar associations exist across subjects with different degrees of vulnerability for psychosis. Including first-degree relatives serves as a replication in subjects with a liability for psychosis, but without illness related possible confounding effects of impairment or medication.

In the current study, (I) we aim to investigate the relation between coping styles and subjective well-being in both patients with a non-affective psychotic disorder and their healthy siblings, hypothesizing that active and problem focused coping strategies are positively correlated to subjective well-being and that passive and avoidant strategies are negatively associated in both groups. We expect in siblings a higher occurrence of active and problem focused coping styles. (II) We aim to investigate the relation between recent negative life events and subjective well-being in patients and healthy siblings, hypothesizing that a negative association between negative life events and subjective well-being exists both on a clinical and subclinical level in patients and siblings. Finally, (III) we will explore whether coping styles mediate the relation between negative life events and subjective well-being in both patients and siblings.

2. Methods

2.1. Procedure and sample

Data pertain to a subsample (third assessment, data release 5.0, Amsterdam, Utrecht and Groningen regions) from the Genetic Risk and Outcome of Psychosis (GROUP)-study cohort; a multicenter, longitudinal naturalistic cohort, designed to facilitate studying vulnerability and resilience factors for variation in the expression of non-affective psychosis disorders. Patients were included at baseline, from in- and outward patient caseloads of the participating academic and regional mental health care centres. First degree brothers and sisters were recruited via their diagnosed relative. We included subjects with available data on subjective well-being, coping and recent life events: 259 patients and 309 siblings completed all questionnaires. Inclusion criteria for patients and siblings were (1) age range of 16–50 years and (2) good command of the Dutch language. Patients had to meet DSM-IV-TR criteria for a non-affective psychotic disorder (American Psychiatric Association, 2000) which was assessed with the Comprehensive Assessment of Symptoms and History (CASH (Andreasen et al., 1992) or the Schedules for Clinical Assessment for Neuropsychiatry version 2.1 (SCAN (Wing et al., 1990)). An additional inclusion criterion for the sibling group was the absence of a lifetime psychotic disorder. A further detailed description of the study design, sampling and inclusion criteria can be found elsewhere (Korver et al., 2012). The study protocol was approved centrally by the Ethical Review Board of the University Medical Centre Utrecht (04/003-O) and subsequently by local review boards of each participating institute.

2.2. Instruments

We used the Subjective Well-being under Neuroleptics scale (Naber, 1995); short form (SWN-20) to measure subjective well-being. The SWN is the most widely used instrument to measure subjective well-being (De Haan et al., 2002; Vothknecht et al., 2013). Participants mark 20 statements on emotional regulation, social integration, physical functioning and mental functioning during the last week on a six-point Likert scale. The five domains load on a single factor structure (Vothknecht et al., 2013). The original extended version of the SWN has a high internal consistency: Cronbach's alpha of 0.95 for overall score and 0.63 to 0.82 for each of the five subdomains (Naber, 1995). The SWN-20 shows a correlation of 0.98 with the original SWN.

Coping styles were assessed with the Utrechtse Coping Lijst (Utrecht Coping List, UCL) (Schreurs et al., 1993). The UCL is a self-rating questionnaire measuring 7 coping strategies (Sanderman and Ormel, 1986). The 7 subscales include proactive acting, passive reacting, avoiding, palliative reacting, seeking social support, expression of emotions and calming thoughts. It has good psychometric properties including moderate to good internal consistency (Cronbach's alpha coefficients ranging from 0.64–0.82) and reasonable test–retest reliability (0.52–0.79), assessed in the healthy population; (Schreurs et al., 1993)).

Negative life events over the past 3 years were assessed with a Dutch translation of a list of events based on the Interview of the Recent Life Event Scale (IRLES, Paykel, 1997), which was first described by Jacobs

Table 1
Sample characteristics.

		Patients (n = 259)	Siblings (n = 309)	MD	χ^{-2}/ t-test	p-value
Age (M, SD)		34 (8.0)	35 (8.0)			
Gender (n, %)	Male	191 (73.7)	138 (44.6)	–	48.9	< 0.001
	Female	68 (26.3)	171 (55.4)			
Ethnicity (n)	Caucasian	209 (80.7)	270 (87.4)			
	Moroccan	8 (3.1)	5 (1.6)			
	Surinamese	10 (3.9)	5 (1.6)			
	Turkish	2 (0.1)	2 (0.06)			
	Asian	1 (0.0)	1 (0.0)			
	Other	7 (2.7)	1 (0.0)			
	Mixed	16 (6.2)	23 (7.4)			
	Unknown	6 (2.3)	2 (0.1)			
Diagnosis patients (n, %)	Schizophrenia	203 (78.4)				
	Schizoaffective disorder	27 (10.4)				
	Other psychotic disorder	29 (11.2)				
Duration of illness (years, M, SD)		10.8 (47)				
WAIS estimated total IQ[a] (M, SD)		103 (19)	113 (18)	10.5	t = 5.98	< 0.001
Current use of antipsychotic (n, %)						
	Using	167 (64.5)	–			
	Not using	14 (5.4)	–			
	Unknown	78 (30.1)	–			
PANSS						
	Positive symptoms	11 (6)				
	Negative symptoms	12 (5)				
	Emotional distress	13 (5)				
CAPE (frequency of symptoms)						
	Positive symptoms		0.08 (0.1)			
	Negative symptoms		0.48 (0.4)			
	Depressive symptoms		0.52 (0.4)			
SWN-20 (M, SD)		88.91 (13.9)	98.77 (11.6)		t = 9.22	< 0.001
UCL						
	Proactive action	2.50 (0.50)	2.74 (0.47)	0.25	t = 6.02	< 0.001
	Palliative reaction	2.27 (0.45)	2.13 (0.43)	−0.14	t = −3.92	< 0.001
	Avoidance/await	2.20 (0.41)	1.99 (0.38)	−0.21	t = - 6.40	< 0.001
	Seeking social support	2.29 (0.53)	2.36 (0.57)	−0.07	t = 1.46	0.145
	Passive reaction	1.98 (0.57)	1.58 (0.49)	−0.14	t = −9.15	< 0.001
	Expression of emotion	1.93 (0.51)	2.08 (0.51)	−0.21	t = 3.35	< 0.001
	Calming thoughts	2.40 (0.54)	2.37 (0.47)	−0.03	t = −0.73	0.463
Negative life events						
	amount	3.02 (2.77)	3.22 (3.15)	−0.20	t = −0.80	0.43

[a] 4 subscales WAIS-III Digit Symbol Substitution Test, Information, Arithmetic, Block Design (Wechsler, 1997)

and colleagues (Jacobs et al., 2006). Subjects report whether or not they have experienced positive or negative life events and rate the impact of experienced events on a 5-point Likert scale varying from 1 (very unpleasant) to 5 (very pleasant). The list contains 61 life events, divided into 10 categories: work, education, finance, physical health, bereavement, migration, courtship and cohabitation, legal, family and social relationships, and marital relationships, all representing datable occurrences involving changes in the external social environment (Jacobs et al., 2006). Events with an unpleasant subjective appraisal (score 1 or 2) were counted to a score representing the amount of negative life events and a continuous exposure variable was calculated representing the number of such unpleasant events (Pos et al., 2016; Wichers et al., 2009).

The Positive and Negative Syndrome Scale (PANSS) was used to evaluate symptom domains at all assessments (Kay et al., 1987). The PANSS is identified to have a good validity and reliability (Kay et al., 1988). We used the positive and negative symptoms from the 5-factor model (positive symptoms, negative symptoms, disorganization, excitement and emotional distress) as developed by Van der Gaag et al (2006). This is a commonly used model with a good face validity and a satisfactory goodness-of-fit (Comparative Fit Index = 0.905; Root Mean Square Error of Approximation = 0.052). It consists of five factors. We used the PANSS emotional distress subscale as a measure of severity of affective symptoms.

For the siblings, we used the Community Assessment of Psychic Experiences (CAPE; www.cape42.homestead.com) to administer self-reports psychotic experiences in the past three years. The questionnaire consists of 42 items in total, 20 questions on positive symptoms (e.g. *'Do*

you ever feel as if things in magazines or on TV were written especially for you?'), 14 on negative symptoms (e.g. *'Do you ever feel that you are lacking in motivation to do things?'*) and 8 on depressive symptoms (e.g. *'Do you ever feel sad'*). The symptoms are measured using a 4-point Likert scale, assessing the frequency varying from 0 (never) to 3 (nearly always). With a validated three-factor structure of positive, negative and depressive dimensions, the CAPE is a reliable measure to register subclinical psychotic dimensions in the healthy population (Hanssen et al., 2003; Verdoux et al., 1996).

2.3. Data analysis

Differences in baseline characteristics between the patients and siblings were assessed with t-tests and χ^2-tests. We compared the gender distribution, IQ-estimates, the baseline subjective well-being, the occurrence of coping styles and the amount of experienced life events between patients and siblings. Antipsychotic medication (y/n) use was an additional covariate for patients.

Pearson's correlation was used for zero order associations between the negative life events, coping and subjective well-being. Spearman's rho was used for non-normally distributed outcomes.

We tested a mediation model, by directly testing significance of the indirect effect (*ab*) of negative life events on subjective well-being through the coping styles as parallel multiple mediators in a regression model (Hayes, 2012; Preacher and Hayes, 2004). The negative life events-coping style path is noted *a*, the coping-subjective well-being path is noted *b*. Following the suggestions of Hayes and colleagues the mediators with a significant zero order correlation to subjective well-

being in either the patient or the sibling sample were entered simultaneously so that we could assess the indirect effects of all coping styles while controlling for the negative life events. For the indirect effects, a bootstrapping approach was used, taking the mean of 5000 estimates of *ab* and the 95% confidence interval. The presented path coefficients are unstandardized. Significance levels of 0.05 were accepted.

Finally, to account for the possible confounding effect of symptom severity and gender, covariates were added to the model. All analyses were performed with SPSS version 24.

3. Results

See Table 1 for sociodemographic characteristics and the comparison between patients and siblings. The sibling sample contains significantly more females and siblings had a higher mean IQ. Patients reported a lower mean subjective wellbeing than siblings. The incidence of life events was not significantly different.

Coping styles occurred differently across the two samples. Patients reported a significantly higher incidence of palliative reaction, avoidance/await, passive reaction and using calming thoughts. Siblings more often employed proactive action and the expression of emotions. Seeking social support was applied equally often in both groups.

3.1. Association between coping styles and subjective well-being

Scores for subjective well-being and coping styles were normally distributed among both samples. In patients, the coping styles proactive acting, seeking social support and using calming thoughts were positively associated with subjective well-being. Passive reacting, avoiding and palliative reacting were negatively associated with subjective well-being. Expression of emotion was not significantly related to the SWN total score. For more detailed information, see Table 2.

Siblings showed a positive association between subjective well-being and the coping styles proactive acting and seeking social support. Expression of emotions, passive reacting, avoiding and palliative reacting were significantly negatively associated with the subjective well-being. Using calming thoughts was not significantly related to subjective well-being in siblings.

3.2. Association between the severity of negative life events and subjective well-being

Life events were not normally distributed. In patients, the amount of negative life events was not correlated with subjective well-being (Spearman's rho . −0.065, two-tailed $p = 0.299$).

In siblings, negative life events were negatively associated with subjective well-being (Spearman's rho −0.12, two tailed $p = 0.04$).

Table 2
First-order correlations (*r*) of the coping styles and subjective well-being.

Pearson's correlation	SWN-20	
	Patients *N* = 259	Siblings *N* = 309
UCL		
proactive action	0.47***	0.36***
palliative reaction	−0.083	−0.19**
avoidance/await	−0.30***	−0.38***
seeking social support	0.20**	0.25***
passive reaction	−0.64***	−0.65***
expression of emotion	−0.002	−0.14**
calming thoughts	0.22**	0.083

*** $p < 0.001$
** $p < 0.01$

3.3. Mediating effects of coping styles between negative life events and subjective well-being

Fig. 1 shows the mediation model with the coping styles entered simultaneously. Table 3 shows the direct and indirect effects of negative life events on subjective well-being in patients and siblings, referred to as *c'* . The indirect effects are presented as the product of the association between negative life events and the coping styles (*a*) and the effect of coping styles on subjective well-being (*b*). Bootstrapped confidence intervals (95% CI) are displayed for both the direct and the indirect effects. When both upper and lower estimates of the 95%CI are smaller or larger than 0, significance of the effect is indicated.

Mediation occurred through passive reacting in both patients and siblings. In addition, in patients, proactive action taking mediated the association between life events and SWN on a trend level (indirect effect = 1.3, CI 0.25 – 2.7). The overall model fit for patients was R² 0.57, $p < 0.001$ and for siblings: R² 0.53, $p < 0.001$. Correction for potential confounding effects of gender, antipsychotic drug use and symptom severity, showed that only positive, negative and depressive symptoms contributed significantly to the model, but that all indirect effects remained significant (unstandardized coefficients respectively, positive: 0.35, $p = 0.019$, negative: −0.32 $p = 0.011$, depressive symptoms: −0.61, $p = 0.001$). In the sibling sample, subclinical negative and depressive symptoms significantly contributed to the model (unstandardized coefficients respectively, negative −5.03 $p = 0.009$, depressive symptoms = −3.85, $p = 0.048$) but the indirect effect of passive reacting remained significant.

4. Discussion

The current study investigated the relation between negative life events, coping styles and subjective well-being in patients with a non-affective psychotic disorder. Healthy siblings were studied to explore whether associations are also present on a subclinical level in subjects who share the vulnerability for a psychotic disorder but do not experience illness related confounding effects. When comparing the two groups, siblings employed a higher rate of proactive coping, whereas patients more often reported passive reacting, palliative reacting and avoidant strategies. Both patients and siblings who employ proactive action taking and seeking social support generally report a higher subjective well-being. Additionally, passive coping was associated with a lower subjective well-being in both patients and siblings. These findings confirm our first hypotheses: proactive coping styles and seeking social support are positively related to subjective wellbeing across subjects with a dimensional liability for psychotic disorders and are more often applied by healthy siblings.

Furthermore, we found that the patients who use palliative and passive coping reactions were more likely to report having experienced negative life events in the past three years. In siblings, additionally the use of calming thoughts and avoidant strategies were associated with more negative life events. In siblings, but not in patients, experiencing negative life events in the past three years was negatively associated with current subjective well-being. The absence of a statistically significant direct relationship between negative life events and subjective well-being in the patient sample was unexpected. Patients did not experience fewer negative life events than siblings in the past 3 years.

In both groups we found that passive coping mediated the association between negative life events and subjective well-being. In patients, we found proactive action taking as a positive mediator between life events and subjective well-being. Gender and comorbid (sub)clinical positive, negative or depressive symptoms did not substantially change theses associations. Our findings regarding the relationships between coping styles and subjective well-being are generally in line with the findings of studies that investigated coping in relation to similar concepts of subjective experiences (Holubova et al., 2015; Ritsner et al., 2003; Schmid et al., 2006).
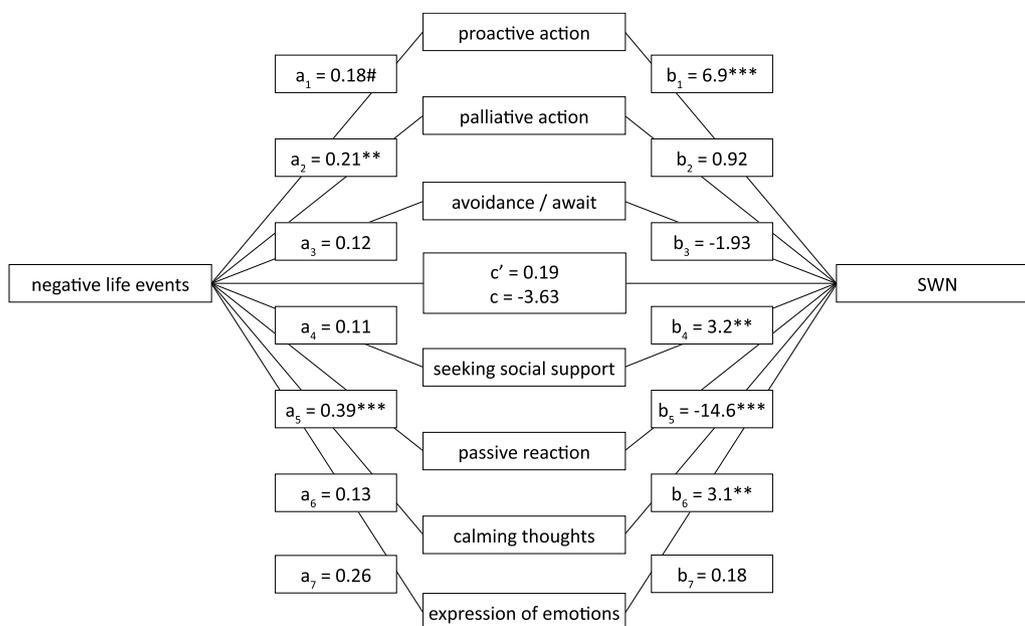
Fig. 1. Mediation model for patients depicting the direct and total effects of negative life events on subjective well-being.].
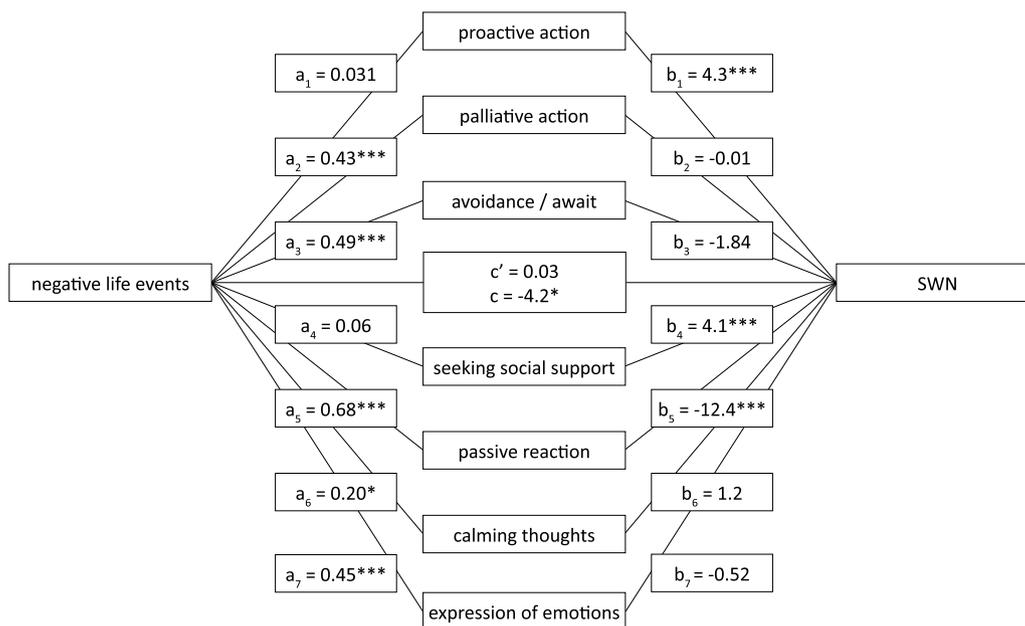

Fig. 2. Mediation model for siblings depicting the direct and total effects of negative life events on subjective well-being.].

Regarding possible underlying mechanisms, the mediating effects of passive coping fit within the locus of control theory (Rotter, 1954), hypothesizing that the less one experiences an internal locus of control, the more dysfunctional coping styles are used. Dysfunctional coping patterns have shown to be related to fatalistic external biases in patients with a first episode of psychosis (Schmidt et al., 2014). Also, having an internal locus of control is associated with better recovery rates in patients with schizophrenia (Harrow et al., 2009). However, since no studies so far have evaluated the locus of control theory in relation to subjective experiences in patients with a psychotic disorder, this needs further exploration in future research. Studies have shown that patients with schizophrenia more often report a less internal and a more external locus of control (Harrow et al., 2009; Kaney and Bentall, 1989).

Similar results in both patients and siblings regarding passive reaction suggests that these dysfunctional coping strategies are not solely related to the experience of a distinct psychotic disorder, for example as

a consequence of negative symptoms. Instead these coping strategies might rather be related to negative affectivity in stressful situations connected to reacting with inactivity and rumination (demonstrated by items such as 'letting things go' and 'ruminating about the past'). Of note, the mediational role of proactive coping styles on subjective well-being in patients has been found earlier by López-Navarro et al. (2018). Yet, the cross-sectional, observational nature of our study precludes causal interpretations.

Some limitations of the current study should be mentioned. First, due to the cross-sectional design causality cannot be inferred. It has been suggested that coping styles develop over time (Phillips et al., 2009), for example as an automated response to a prolonged period of mood disturbance (Pavlickova et al., 2013). Hence, reciprocal causation is possible. Second, we did not find a significant c'-path (direct effect of negative life events on SWB) in the mediation analysis in the patient sample. Nevertheless, according to Hayes and colleagues, the method

Table 3
Summary of the mediator analysis in patients ($n = 259$) and siblings ($n = 309$).

	X		M	Y	Indirect effect ab (95% CI)	Total effect c
Patients			UCL			
	Negative life events		proactive action	SWN-20	1.3 (0.25 – 2.7)[†]	−3.63
			palliative reaction		0.19 (−0.29 – 0.95)	
			avoidance/await		−0.27 (−1.03 – 0.06)	
			seeking social support		0.39 (−0.73 – 1.14)	
			passive reaction		−5.6 (−7.9 – −3.4)[†]	
			expression of emotion		0.05 (−0.37 - 0.62)	
			calming thoughts		0.48 (−0.02 – 1.4)	
Siblings						
	Negative life events		proactive action	SWN-20	−0.13 (−0.97 – 0.54)	−4.2*
			palliative reaction		−0.43 (−1.7 – 0.50)	
			avoidance/await		−0.49 (−1.4 – 0.14)	
			seeking social support		0.23 (−0.46 – 1.14)	
			passive reaction		−8.42 (−11.3 – −6.2)[†]	
			expression of emotion		−0.23 (−1.11 – 0.49)	
			calming thoughts		0.24 (−0.07 – 0.88)	

* $p < 0.001$
[†] significant after bootstrapping

we used is able to provide an approach for understanding a mechanism. They advocate for directly testing the significance of the indirect effects using a regression model and a bootstrapping approach. However, a replication study would be of importance. Third, we used the emotional distress subscale of the PANSS for affective symptoms in patients, which is an unspecific scale to assess severity of depressive symptoms. Therefore, we might have missed components of the severity of depressive symptoms. The Calgary Depression Scale for Schizophrenia would have been a better alternative, but was unfortunately not administered at the third assessment in GROUP. We were not able to use the CAPE depression subscale for this purpose since the CAPE depression subscale was not complete for the patient sample. Fourth, gender distribution is different across the samples, yet we did not find a confounding effect of gender on the mediation model. Fifth, our finding that the use of antipsychotic medication did not moderate the relationships between life events, the coping styles and subjective well-being in the mediation model, should be interpreted with the possibility in mind that more detailed information on dose and compliance alter this conclusion. Since the differential effects of antipsychotic medication use on subjective well-being are well established (Haan and Lavalaye, 2000), future research should include registration of dose and compliance. When assessing passive coping styles in clinical practice, clinicians will have to consider whether a dampened salience or sedating effects associated with antipsychotic medication could be a cause. Sixth, we used a specific structure of coping styles while the debate concerning the best way to arrange coping styles in an adequate hierarchic or functional structure is still ongoing (see Lazarus, 1993; Lysaker et al., 2004; Martins and Rudnick, 2007). The items of the UCL do not follow the hierarchy of coping styles as proposed by Connor-Smith and colleagues (Connor-Smith and Flachsbart, 2007). Due to missing information on antipsychotic use, the use of self-reported instruments in assessing coping strategies and restricted availability of specific measures of depressive symptoms, we cannot rule out the effect of unmeasured factors.

In conclusion, passive coping to negative life events is associated with worse subjective well-being in both patients with psychotic disorders and their non-affected siblings. Our study underlines the importance of individual characteristics in subjective well-being of patients with a psychotic disorder. Further studies are needed to evaluate whether improving active coping strategies may enhance subjective well-being in patients suffering from schizophrenia or related disorders.

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