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# Self-stigma and coping in youth with schizophrenia and bipolar disorder: a comparative study

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## Abstract

**Background** Self-stigma develops when people with mental disorders start to accept and apply the stigma that the wider public has towards these disorders. People suffering from mental disorders are one of the most groups prone to stigmatization others, making them more likely to experience internalized stigma. Studies done in Europe found that people with schizophrenia had greater internalized stigma than those with mood disorders. Self-stigma has been linked negatively to the individual's self-esteem, coping, and other outcomes. The aim of this research was to compare young patients with bipolar disorder to those with schizophrenia as regards self-stigma and various coping mechanisms. Additionally, this study sought to evaluate the association between coping mechanisms and self-stigma in young people with schizophrenia and those with bipolar disorder. The ISMI scale and the BRIEF-COPE inventory were used to assess self-stigma and coping strategies respectively.

**Results** The mean ISMI total score was significantly higher in the schizophrenia group than in the bipolar disorder group ( $p < 0.001$ ). The latter group showed a statistically significant higher mean total adaptive score than the schizophrenia group ( $p = 0.03$ ). A significant positive correlation was found between the total maladaptive score of the BRIEF-COPE inventory and the ISMI scale total score ( $p < 0.001$ ) in both groups.

**Conclusions** Youth with schizophrenia experience more self-stigma than those with bipolar disorder, with the former using more maladaptive coping styles. Self-stigma is strongly linked to maladaptive coping in both schizophrenia and bipolar disorder.

**Keywords** Self-stigma, Coping, Schizophrenia, Bipolar disorder

## Background

Previous research that studied psychiatric disorders stigma targeted mainly public stigma and discrimination towards individuals suffering from mental illness by the general population but most recently it targeted individuals with serious mental illness. Stigma includes labeling, viewing in a stereotypical way and discriminating

attitudes. The impact of stigma on persons may include perception of stigma, experiencing or anticipating it and even self-stigma. A person's perceived stigma is their belief that others view people with severe mental illnesses negatively [1]. On the contrary, experienced stigma implicates how patients with mental illness experience discrimination or prejudice from others. However, anticipated stigma occurs when a person expects being discriminated against from others due to his mental illness even though it might have never occurred [2]. A person's social identity slowly changes as a result of self-stigma or internalized stigma (e.g., brother, sister, spouse) to a devalued identity of him/herself only related to his/her mental illness called illness identity [3]. It occurs when

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individuals suffering from mental illness start to accept and internalize the stigma that exists in the community regarding mental illness [1]. Patients with mental disorders are considered one of the most groups subjected to stigma. Schizophrenia is well known to be a serious mental illness that is greatly stigmatized with often unfavorable outcomes regarding personal and social functioning with a poor impact on their quality of life. Upon assessing stigma in mental disorders, most previous studies targeted mainly patients with schizophrenia with less studies including patients with bipolar disorder and very few that assessed stigma in youth with mental disorders [4]. Evidence on the effect of self-stigma on patients with serious mental illness is starting to increase [2]. Based on Livingston and Boyd's [5] meta-analysis of 127 studies, most of the included studies were conducted in Europe or North America (77.5%), with schizophrenia the most prevalent diagnosis (54.3%). Internalized stigma or in other words self-stigma is frequent in Europe and was found to be greater in patients with schizophrenia (41.7%) than in those suffering mood disorders (21.7%). In North America, 36.1% of patients with serious mental disorders were experiencing self-stigma. However, there is less knowledge regarding how widespread self-stigma is in other geographic areas [6]. The degree of self-stigma might change depending on culture related factors [7] and sociopolitical ideology [8]. In comparison to mental illnesses other than psychotic disorders, individuals at risk for psychosis are more discriminated against by the general public and are thus prone to experience more internalized stigma. It cannot be clearly defined whether internalized stigma is greater in patients with chronic psychosis or those who are in the initial phases of psychotic disorder. A negative association has been found between internalized or self-stigma and the person's self-esteem, clinical outcome, and the level of functioning [9, 10].

The longitudinal impacts of internalized stigma remain greatly ill-defined as most of studies conducted concerning this area of research were cross sectional [2]. Multiple interventions including cognitive restructuring and psychoeducation have been designed and implemented to reduce internalized stigma in patients suffering from mental illnesses [11]. Psychiatric rehabilitation could minimize internalized stigma in an indirect way by causing an improvement in psychiatric symptoms and multiple domains of functioning that are usually compromised in patients with serious mental disorders, though at times psychiatric rehabilitation services may lead to increased stigma and labeling [12].

The development of coping mechanisms is crucial to a person's capacity to cope with stressful circumstances as in cases of mental illness. Additionally, stress from daily

living has a significant impact on the onset and progression of mental disease [13].

In order to keep psychological and social balance during times of external or internal stress, such as at various phases of sickness and treatment, coping refers to the use of mental models to control one's own feelings, thoughts, and behaviors. The internal stigma of mental illness itself, together with other coping mechanisms (such as low-level acceptance and high-level denial), are thought to hinder compliance and make patients put off getting help. Working patients do not adhere to therapy because they fear being stigmatized at work, which makes it challenging for them to follow the management plan [14, 15].

According to recent studies, patients with schizophrenia mainly employ unhealthy coping mechanisms. Implementing emotion-directed coping methods is influenced by negative symptoms, perceived quality of life, self-worth, awareness of symptoms, and attributing symptoms to illness in individuals with schizophrenia-related disorders [16]. According to a recent study of emotion regulation techniques in bipolar disorder, this condition favors preoccupation, self-blame, denial, and catastrophic thinking more than non-clinical controls for controlling negative affect. However, according to a different study on coping in patients with bipolar disorder, these patients when presented with negative emotions, are more prone than patients suffering major depressive disorder to take risks and ruminate about good affect [17].

It is evident that coping mechanisms and self-stigma have the capacity to significantly affect the disease process, subsequently they can serve as objectives of psychological interventions like psychoeducation and supportive therapy. As a result, their assessment should be taken into consideration being potentially modifiable risk factors and crucial for clinical and rehabilitation purposes.

The hypothesis in this study was that youth with schizophrenia experience more internalized stigma in comparison to those with bipolar I disorder and that youth with schizophrenia and bipolar I disorder with dysfunctional coping strategies have high internalized stigma. This research aimed to investigate self-stigma and different coping strategies among youth with schizophrenia in comparison to those with bipolar disorder. Additionally, this study examined how coping mechanisms affect internalized stigma in young people with schizophrenia and bipolar disorder.

## Subjects and methods

The study was a cross sectional with a convenient sample of 100 participants, who were recruited from the outpatient clinic of Psychiatry and Addiction Prevention Hospital, Kasr Al-Ainy Hospitals, Faculty of Medicine, Cairo

University, during the period between October 2021 and April 2022. The sample size calculation was done using G\*Power software version 3.1.9.2. Based on a previous study [18], the sample size required was 50 in each group. The recruited sample was divided into 2 equal groups (each group  $N=50$ ), where group A included 50 patients with Schizophrenia (SZ) meeting the Diagnostic and Statistical Manual of Mental Disorders, 4th edition criteria without any other psychiatric comorbidities and group B had 50 patients with diagnosis of bipolar I disorder (BD) meeting the criteria of the Diagnostic and Statistical Manual of Mental Disorders, 4th edition with the exclusion of any other psychiatric disorders.

In both groups, patients aged 15–24 years, of clinically average intelligence and who were literate were included. Patients who were not cooperative or who could not communicate meaningfully with the researchers either due to reasons like sensory deficits, apathy, disruptive, or grossly disorganized behavior were excluded in both groups. Written informed consent was obtained from each participant above the age of 18 and the guardian of each minor participant.

The study was approved by the Scientific and Ethical Committee of Kasr Al-Ainy’s Department of Psychiatry in June 2021. The Ethical Committee of Cairo University approved the research in January 2022. Registration number: (MS-546-2021).

All the patients underwent semi-structured Kasr Al-Ainy interviews.

Psychiatric interview was done to obtain socio-demographic variables and detailed clinical history. Groups A and B were subjected to the Structured Clinical Interview (SCID-I) [19], in its Arabic version [20] to confirm the diagnosis of schizophrenia and bipolar disorder, respectively, and to rule out psychiatric comorbidities.

The severity of the disorders was assessed by Positive and Negative Syndrome Scale (PANSS) [21] in the Schizophrenia group and by using the young mania rating scale (YMRS) [22] and Hamilton depression rating scale [23] in the bipolar disorder group.

Self-stigma in both groups was evaluated using the Internalized Stigma of Mental Illness (ISMI) scale [24] in its Arabic version [25] which is a self-rated questionnaire consisting of 29 items. The BRIEF-COPE inventory [26] in its Arabic version [27] was administered to evaluate coping strategies in both groups. It consists of overall 28 statements across two scales: the maladaptive coping and the adaptive coping. The adaptive total score includes the sum of scores of the following subscales: active coping, emotional support, instrumental support, positive reframing, planning, humor, acceptance and religion, while the maladaptive total score includes sum of scores of the following subscales (self-distract, denial, substance

**Table 1** PANSS scores of the schizophrenia group (group A)

	Group A				
	Mean	SD	Median	Minimum	Maximum
PANSS positive	7.56	0.79	7.00	7.00	10.00
PANSS negative	13.44	3.63	14.00	7.00	19.00
PANSS general	23.62	4.53	24.00	16.00	32.00
PANSS total	44.62	7.52	44.00	33.00	57.00

**Table 2** YMRS and Hamilton depression rating scale scores in the bipolar disorder group (B)

	Group B				
	Mean	SD	Median	Minimum	Maximum
YMRS	6.50	2.69	6.00	2.00	12.00
Hamilton depression	6.38	3.78	5.50	3.00	15.00

use, behavioral disengagement, venting, and self-blame). Each response was rated on a 4-point scale.

After data collection, they were scored, coded, and then inserted into SPSS 20 sheets and were sent to the statistician for statistical analysis. Once the statistical analyses were completed, the results were tabulated and elaborated.

### Results

Regarding the sociodemographic data, both groups were comparable as regards age, years of education, sex, marital status, and employment. The mean duration of illness was substantially higher in the youth with schizophrenia than those with bipolar disorder ( $p=0.045$ ). However, there was no statistically significant difference in the number of hospitalizations between the two groups.

The mean scores of PANSS in the individuals with schizophrenia are shown in Table 1. The patients with bipolar disorder were neither in the depressed nor in the manic state as indicated by the YMRS and HDRS mean scores (Table 2). The mean ISMI total score was considerably higher in group A than in group B ( $p<0.001$ ) revealing that the SZ group showed higher self-stigma than the BD group (Table 3). As shown in Table 4, the results of the BRIEF-COPE inventory are categorized into two main domains: total adaptive and maladaptive total scores. Group B (BD) showed a statistically significant higher mean total adaptive score than group A (SZ) implicating that the bipolar disorder group used more adaptive coping styles than the schizophrenia group ( $p=0.03$ ).

**Table 3** Comparison between schizophrenia group (A) and bipolar disorder group (B) as regards ISMI total score

	Group A					Group B					P value
	Mean	SD	Median	Minimum	Maximum	Mean	SD	Median	Minimum	Maximum	
ISMI-total	2.53	0.54	2.52	1.21	3.74	2.21	0.48	2.10	1.24	3.41	0.001

The young people with schizophrenia showed a significantly greater mean total maladaptive score than the bipolar disorder group ( $p=0.001$ ) indicating more maladaptive coping in the schizophrenia group (Table 4).

Regarding the subscales of the BRIEF-COPE inventory, there was a significant difference in denial, behavioral disengagement, planning and acceptance subscales ( $p<0.01$ ) while the rest of the subscales showed no statistically significant difference (Table 4).

In group A (SZ), the total score of ISMI scale correlated negatively with the total adaptive score of the BRIEF-COPE inventory ( $p<0.001$ ), thus indicating that greater internalized stigma in the schizophrenia group was associated with poor adaptation and coping. Moreover, Table 5 shows a substantial positive association between the total maladaptive BRIEF-COPE inventory score and the ISMI total score ( $p<0.001$ ). This implies that in the current study, patients with schizophrenia with higher internalized stigma used more maladaptive coping styles.

When correlating the total score of the ISMI scale with the BRIEF-COPE inventory scores in group B (the bipolar disorder group) (Table 6), a significant inverse correlation was identified between the total adaptive scores of the BRIEF-COPE and the ISMI total score ( $p<0.001$ ). Moreover a significant positive correlation was found between the total maladaptive scores and the ISMI total score ( $P<0.001$ ). This means that in group B patients with higher internalized stigma used more maladaptive coping styles than those with lower internalized stigma.

Upon correlating the different PANSS scores to the total ISMI score in the schizophrenia group, there was a strong positive association between ISMI total score and the total PANSS score as well as the negative subscale and the general psychopathology scales ( $p<0.001$ ) revealing that patients with higher internalized stigma showed more severe negative and general psychopathology symptoms (Table 7). Meanwhile, in the bipolar disorder group, no significant correlation was found between the ISMI total score and any of the scores of the YMRS or HDRS, implying the absence of association between the severity of symptoms and the internalized stigma in this group (Table 8).

Regarding the relation between severity of symptoms and coping mechanisms in the patients with schizophrenia, the total adaptive score was significantly

inversely linked with the total PANNS score ( $p<0.001$ ) and its negative and general psychopathology subscales ( $p<0.001$ ) while maladaptive coping was strongly associated with the negative symptoms, general psychopathology and the total PANSS scores ( $p<0.001$ ). This means that patients with more severe symptoms endorsed more maladaptive coping styles and less adaptive coping. In the bipolar disorder group, a strong negative association was found between the BRIEF-COPE adaptive score and Hamilton depression rating scale scores implying that more adaptively coping patients showed less severity of depressive symptoms. The number of years of schooling was substantially negatively linked with the ISMI total score ( $p<0.001$ ) in the schizophrenia group only, which showed that less years of schooling was linked to internal stigma in this group of patients. Also, in youth with schizophrenia, there was a strong positive relation between the number of years of education and the BRIEF-COPE total adaptive score ( $p<0.001$ ) and an inverse substantial correlation with the BRIEF-COPE inventory maladaptive score ( $p<0.001$ ). While in the young individuals with BD, no worth noting relation was found between years of education and the BRIEF-COPE inventory adaptive score but there was a considerable negative association with the BRIEF-COPE maladaptive score ( $p<0.001$ ).

Direct significant relationship was observed between the number of hospital admissions and the ISMI total score in both SZ and BD groups ( $p<0.001$ ) revealing a greater number of hospital admissions was associated with more internalized stigma in both groups. In addition, the number of hospital admissions in the SZ group showed a significant negative link with the BRIEF-COPE adaptive score and a significant association with the BRIEF-COPE maladaptive score ( $p<0.001$ ). On the other hand, the number of hospitalizations in youth with bipolar disorder did not show a significant correlation with either score.

There was a considerable direct association between the duration of illness and internalized stigma in the individuals with schizophrenia as well as those with bipolar disorder ( $p<0.001$ ,  $p=0.014$  respectively) and a significant negative correlation with the BRIEF-COPE total adaptive score in both groups.

**Table 4** Comparison between group A and group B as regards the BRIEF-COPE inventory scores

	Group A					Group B					P value
	Mean	SD	Median	Minimum	Maximum	Mean	SD	Median	Minimum	Maximum	
BRIEF COPE-self distract	5.62	1.34	6.00	2.00	8.00	5.78	1.56	6.00	2.00	8.00	0.462
BRIEF COPE-active coping	5.00	1.65	5.00	2.00	8.00	5.34	1.69	5.00	2.00	8.00	0.244
BRIEF COPE-denial	6.18	1.71	6.50	2.00	8.00	4.60	1.76	4.00	2.00	8.00	<0.001
BRIEF COPE-substance use	4.20	2.52	2.00	2.00	8.00	3.74	2.32	2.00	2.00	8.00	0.447
BRIEF COPE-emotional support	5.02	1.44	5.00	2.00	8.00	5.38	1.84	6.00	2.00	8.00	0.206
BRIEF COPE-behavioral disengagement	5.90	1.73	6.00	2.00	8.00	5.20	1.46	5.00	2.00	8.00	0.022
BRIEF COPE-venting	6.28	1.60	7.00	2.00	8.00	5.66	1.69	6.00	2.00	8.00	0.054
BRIEF COPE-using instrumental support	4.70	1.56	4.50	2.00	8.00	4.72	1.59	5.00	2.00	8.00	0.827
BRIEF COPE-positive reframing	4.84	1.72	5.00	2.00	8.00	5.10	1.74	5.00	2.00	8.00	0.393
BRIEF COPE-self blame	6.36	1.77	7.00	2.00	8.00	5.66	1.95	6.00	2.00	8.00	0.060
BRIEF COPE-planning	4.12	1.21	4.00	2.00	8.00	4.70	1.39	5.00	2.00	8.00	0.023
BRIEF COPE-humor	3.84	1.88	3.00	2.00	8.00	4.30	1.85	4.00	2.00	8.00	0.162
BRIEF COPE-acceptance	3.98	1.76	3.50	2.00	8.00	4.98	1.78	5.00	2.00	8.00	0.003
BRIEF COPE-religion	6.12	1.57	6.00	3.00	8.00	6.00	1.65	6.00	2.00	8.00	0.754
BRIEF COPE-adaptive	37.62	8.54	37.50	22.00	64.00	40.52	7.04	41.00	23.00	55.00	0.034
BRIEF COPE-maladaptive	34.54	5.98	34.50	15.00	45.00	30.64	5.21	31.00	20.00	41.00	0.001

The adaptive total score includes the subscales of (active coping, emotional support, instrumental support, positive reframing, planning, humor, acceptance, and religion), while the maladaptive total score includes (self-distract, denial, substance use, behavioral disengagement, venting, and self-blame)



**Table 5** Correlation between BRIEF COPE inventory adaptive and maladaptive scores and the total ISMI scale score in group A (schizophrenia group)

Group A	ISMI-total
<b>BRIEF COPE-adaptive</b>	
Correlation Coefficient	-0.796-
P value	<0.001
N	50
<b>BRIEF COPE-maladaptive</b>	
Correlation Coefficient	0.704
P value	<0.001
N	50

**Table 6** Correlation between BRIEF COPE inventory adaptive and maladaptive scores and the total ISMI scale score in group B (bipolar disorder group)

Group B	ISMI-total
<b>BRIEF COPE-adaptive</b>	
Correlation Coefficient	-0.504-
P value	<0.001
N	50
<b>BRIEF COPE-maladaptive</b>	
Correlation Coefficient	0.492
P value	<0.001
N	50

**Table 7** Correlation between PANSS scores and the total ISMI score in the schizophrenia group (group A)

Group A	ISMI-total
<b>PANSS positive</b>	
Correlation Coefficient	0.196
P value	0.173
N	50
<b>PANSS negative</b>	
Correlation Coefficient	0.820
P value	<0.001
N	50
<b>PANSS general</b>	
Correlation Coefficient	0.793
P value	<0.001
N	50
<b>PANSS total</b>	
Correlation Coefficient	0.877
P value	<0.001
N	50

**Table 8** Correlation between the YMRS and Hamilton depression rating scales with ISMI total scores in group B

Group B	ISMI-total
<b>YMRS</b>	
Correlation coefficient	-0.294-
P value	0.059
N	42
<b>Hamilton depression</b>	
Correlation coefficient	0.374
P value	0.362
N	8

### Discussion

The concept of internalized stigma has been the subject of expanding literature over the past years, indicating the increased interest in this crucial subject [28, 29]. Regarding previous literature, many studies focused on severe mental illness as psychosis, but only a few were concerned with bipolar disorder. Furthermore, limited studies were conducted on the youth age group. To our knowledge, this is the first study conducted in Africa comparing self-stigma and coping between schizophrenia and bipolar disorder in this age group.

Our first hypothesis was confirmed, as self-stigma was found to be higher in the youth with SZ than those with BD with a considerable difference ( $p=0.01$ ). This finding is in line with several previous studies showing that schizophrenia are more prone to self-stigmatizing attitudes when compared to patients with other mental or physical disorders [6, 30]. It was found by Sarisoy et al. [31] that one out of three patients with schizophrenia and one out of five patients with bipolar disorder experience self-stigma. According to other research, people with bipolar disorder also have self-stigmatizing views, but to a lesser degree [32].

Stigmatization may be more common in schizophrenia patients because of many reasons. A primary cause is the mental pattern and impairment in cognitive functions in people with schizophrenia adversely impacts social relationships. Moreover, it is commonly known that people with schizophrenia are more exposed to negative attitudes from others which may be partly due to the severity of symptoms. The patients subsequently internalize these stigmatizing attitudes resulting in increase of their own self-stigma which eventually hinders the patients' functional outcome and leads to social isolation [33].

Regarding the coping styles in both groups, adaptive coping was used more by the BD group while maladaptive was used more by SZ group, with a statistically significant difference in the denial, behavioral, disengagement,

planning, acceptance subscales and the total scores as shown in Table 4. This result is concordant to the majority of earlier studies' findings which suggested that people with schizophrenia were less likely to employ coping mechanisms than individuals with other psychiatric diseases like bipolar disorder [13].

This may be explained by the neurodegenerative changes in schizophrenia which are associated with cognitive dysfunction that negatively affects the mental flexibility of these patients when dealing with stressful events.

Moreover, poor adaptation in patients with schizophrenia may occur as a learned response to repeated long standing failures, which may have been a consequence of cognitive dysfunction in the first place. The current study showed that young individuals with schizophrenia had difficulty with problem focused strategies as planning, as well as emotion-focused strategies as acceptance, all of which were better in the BD group with a substantial difference that was corresponding to the findings by [34] and [35].

In addition, humor as a coping style strongly depends on the soundness of social abilities and abstraction [36] which are expected to be more compromised in youth with schizophrenia than those with bipolar disorder. This is in line with the results of our study, which revealed that people with bipolar disorder used humor more frequently than people with schizophrenia.

Regarding correlations with socio-demographic variables, the years of education showed a statistically significant negative correlation in the schizophrenia group only. This is consistent with other earlier studies indicating a negative relationship between education level and internalized stigma [6]. However, other research did not identify a substantial link between schooling and self-stigma [37]. In spite of the expanding body of results in this area, findings are not always consistent regarding the correlation between demographic variables and negative self-concept. A systematic review and meta-analysis which studied the relationship between internalized stigma and various sociodemographic variables found that none of the variables included were strongly linked to the degree of self-stigma (Livingstone and Boyd 2010).

The discrepancy between the results could be attributed to difference in the cultural background of subjects and the location of data collection.

Regarding clinical variables of the patients, the duration of illness in both groups showed a significant positive correlation with internalized stigma. In the current study, it is possible that long-term mental symptoms and years of poor public perception exacerbated self-stigma. This result is comparable to one from a study by Kim et al. [38], in which self-stigma was positively correlated with the length of the disease. However, a

different study found no connection between the length of the illness and self-stigma, that can be explained by the heterogeneity of the study sample which included all spectrum of psychotic disorders [39].

A substantial positive link between the number of hospitalizations and the ISMI overall score was identified in both groups. Previous studies showed the same results. The number of admissions probably implicates to what extent the mental disorder is severe and together with the fact of being away from home is often associated with feelings of shame and despair.

It is not surprising that it is related to more internalized stigma. However, it is difficult to say whether the self-stigma or the repeated hospital admissions came first. To reach this result, a longitudinal rather than a cross-sectional study is required [40]. The overall PANSS score in the SZ group(A) was significantly positively associated with the total ISMI scale score, which was also positively correlated to the negative and general psychopathology PANSS sub scores in this group of patients (Table 7). The majority of studies on this topic indicate a strong relationship between self-stigma and overall severity of the condition in different psychiatric diagnoses [37, 40, 41]. This may be supported by the fact that more severe mental diseases are frequently connected with disapproving conduct from others, leading to discrimination and, as a result, increased self-stigma. However, no significant association was identified between the YMRS and HDRS scores and the total ISMI score in the bipolar disorder group (group B), which may be attributable to the low overall symptom severity in this group.

The significant positive correlation of years of education with the BRIEF-COPE total adaptive score and the significant negative correlation with the total maladaptive score in the schizophrenia group suggest that education might play a role in coping as a learned behavior. This is further reinforced by the significant negative correlation between the number of years of education with the total maladaptive score in the bipolar disorder group. The significant negative correlation between the duration of illness and the total adaptive score in both groups as well as the significant positive correlation between the number of hospitalizations and the maladaptive score in the schizophrenia group, can be explained by the fact that hospital admission could be very stressful. This can especially occur in patients suffering severe and chronic mental disorders, particularly if hospitalization was involuntary or if the patient's condition necessitated repeated hospital admissions or a long hospital stay which will eventually affect his overall functioning in various domains and thus may compromise his ability to cope [42].

When correlating with the severity of the disorder, the patients with more severe symptoms in both groups endorsed more maladaptive and less adaptive coping. This is consistent with previous studies in schizophrenia and in bipolar disorder [43, 44]. These patients' adaptation deficits including social engagement problems and unjustified self blame may add more to their functional disability.

According to some studies on schizophrenia, patients' general functioning and the severity of their negative symptoms may be significantly impacted by their self-defeating beliefs [45, 46]. These studies put forth the possibility that primary cognitive and social dysfunction that occur initially in patients with schizophrenia can lead to unfavorable experiences that subsequently contribute to the development of negative thoughts about themselves which may in turn aggravate their psychotic illness and eventually consolidate their negative and self-defeating beliefs [46].

This can similarly be the case in patients suffering from bipolar disorder as deficits in the initial phases of the disorder might lead to negative experiences and in turn to negative self-appraisal and hopelessness, all of which would contribute to more dysfunction and negative events. However, since this study is not a longitudinal one, the direction of the cause effect pattern cannot be concluded or affirmed.

## Conclusion

Young people with schizophrenia suffer from greater self-stigma than those with bipolar disorder, and the former use more unhealthy coping mechanisms. In individuals with schizophrenia and bipolar illness, there is a substantial positive link between self-stigma and the use of maladaptive coping, as well as a significant negative correlation with the use of adaptive coping in both groups. Patients with schizophrenia but not those with bipolar disorder show a strong positive correlation between internalized stigma and the severity of the disorder. Furthermore, a strong association between chronic mental illness and negative self-concept is probably present given the considerable positive link between self-stigma and the length of disease as well as the number of hospitalizations in patients with schizophrenia and bipolar disorder. Adaptive coping is also inversely associated to the length of disease in both bipolar disorder and schizophrenia. Additionally, the significant negative association between the number of years of schooling and the usage of maladaptive coping suggests that education may influence coping in both schizophrenia and bipolar disorder.

The findings of this research implicate that screening for self-stigma in patients suffering from mental illness should be a part of the clinical assessment in order to address it

in the management plan of these patients as it affects their ability to cope adaptively. Multicenter studies with larger sample sizes aiming at assessing self-stigma and coping in different psychiatric disorders across different age groups is a research recommendation. Longitudinal studies assessing the effects of different psycho-educational interventions on self-stigma can help improve management of negative self-concept in patients with psychiatric disorder. Furthermore, correlations between stigma and the level of functioning should be investigated among patients with mental illness. It is of utmost importance to launch anti-stigma campaigns to raise the awareness about mental illness and to fight discrimination against patients with mental disorders.

## Abbreviations

PANSS	Positive and Negative syndrome scale
YMRS	Young Mania Rating Scale
SZ	Schizophrenia
BD	Bipolar disorder
ISMI	Internalized Stigma of Mental Illness

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## Authors' contributions

O. O. K.: discussion of the results, sharing in writing the discussion and the corresponding author. H. F.: research idea, revising the manuscript. H. A.M.: collecting data from subjects. M. A.: writing the manuscript.

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## Availability of data and materials

Data is available upon request.

## Declarations

### Ethics approval and consent to participate

An informed consent was obtained from all the participants above the age of 18 and the guardian of each minor participant. The Scientific and Ethical Committee of the Department of Psychiatry of Kasr Al-Ainy approved the study in June 2021. The Ethical Committee of Cairo University approved the research in January 2022. Registration number: (MS-546-2021).

### Consent for publication

All members of the research agree and give consent for publication.

### Competing interests

The authors declare that they have no competing interests.

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