Perceived loss among people living with mental disorders: Validation of the personal loss from mental illness scale

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ABSTRACT

Objective: The development of mental illness often leads to pervasive losses in different areas of people's lives. However, previous research has tended to focus on the loss experienced by families while the examination of the loss experienced by individuals who are themselves coping with mental illness has been neglected. The present study tested the factor structure of the Hungarian version of the Personal Loss from Mental Illness (PLMI) scale, and analyzed its associations with age, gender, previous hospitalizations, marital status, loneliness, grief, and quality of life.
Methods: Mentally ill patients ($N = 200$) with different diagnoses were recruited from a mental health center in Hungary, and completed self-report questionnaires. Confirmatory factor analysis (CFA) with covariates was conducted.
Results: CFA analyses rejected the previous four-factor structure and suggested a single factor structure to be superior. Higher loss perception was predicted by higher loneliness, grief, and lower quality of life. Patients with mood disorders reported higher loss as compared to patients with other psychiatric diagnoses.
Conclusions: The present study stresses the magnitude of loss and raises the need to examine further the role of loss in coping and recovery. Asking patients about their feelings in clinical practice is of high importance.

1. Introduction

Adaptation to one's mental illness can be a long-lasting and emotionally draining process [1]. Living with a diagnosis of mental illness often means experiencing multiple losses in many essential aspects of life such as the loss of emotional and cognitive abilities, social bonds and relationships, employment and/or educational opportunities, and even in performance of simple daily activities [2]. While loss commonly occurs and is well recognized in many life changing events such as the death of a loved one or the development of physical disorders, the losses caused by mental illness are typically less visible [3] and have been conceptualized as being more vague and frequently neglected by the public eyes [4]. The stigma of mental illness is mainly considered to blame in minimizing the public acknowledgement of patients' loss, as well as minimizing the provision of support usually offered to individuals

affected by other, less stigmatizing life changing events in their social environment [3].

Studies on personal loss imply that different loss experiences share common features regardless of type of loss [5–7]. While it can differ in intensity, loss has been generally defined as reduction in resources, which can be both concrete or more abstract, in which an individual is greatly emotionally invested [8]. The loss resulting from mental illness can be enduring and complex in nature involving both actual losses (e.g., losses of functioning and abilities) and symbolic losses (e.g., loss of hopes and dreams for the future). Furthermore, unlike the loss that occurs following the death of a loved one, these losses are mainly unpredictable as to when they may end [9].

Despite the clinical evidence demonstrating that loss is a central experience of patients [3,10–12], the study of personal loss has tended to focus mainly on the loss experienced by family members of mentally ill patients (e.g., [13–15]). However, these studies – while describing the various losses that family members experience –do not focus specifically on the individual's perception of loss, but rather on their emotional and cognitive reaction to loss, which typically refers to grief [16]. Family members, in particularly parents, are found to grieve the

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(i) objective losses caused by the development of the illness itself (e.g., cognitive and emotional abilities), and (ii) psychosocial losses resulting from these objective losses and changes in functioning, which eventually manifests in denied access to meaningful social roles [17,18]. Very often, parental grieving is related, maybe more than anything, to their child's loss of potential to live a "normal life" [19,20].

While previous studies have emphasized the magnitude of the reactions of families to the experience of loss following mental illness, few studies have explored the loss experienced by the ones who are coping with mental illness themselves. A qualitative study among schizophrenia patients reported loss to be a profound, central, and "overwhelmingly painful" experience [2] (p.26). Their feelings of loss were noted as being important in helping patients coming to terms with their illness and improving their coping [2]. Another qualitative study reported that the loss of relationships was the most dominant theme among patients, highlighting this as an important issue in the recovery process [21].

To help researchers empirically investigate loss among mentally ill patients, the Personal Loss from Mental Illness (PLMI) scale was developed that (i) assesses loss perception of patients, and (ii) focuses on perception of loss per se, creating a distinction between loss and grief reaction [22]. Previous factor analysis of the PLMI scale delineated four different factors: 'Loss of Roles and Routines', 'Loss of Former Relationships', 'Loss of Former Self' and 'Loss of Future' [22]. The PLMI scale has demonstrated satisfactory psychometric properties (for detailed information see: [22]). Initial studies using the scale found individuals' loss to positively related to low ambition and motivation to study in college [23], increased loneliness [24], and negative religious-coping [25], and to be negatively related to recovery and quality of life [26]. Patients' personal characteristics were also found to be related to loss, where older age, higher number of previous hospitalizations, and lower number of jobs held by patients were found to be related to increased perception of loss [22].

Given the major role of loss in recovery [27–29], and considering its significant role in mentally ill patients' lives, examining loss following mental illness is of high clinical importance and therefore more studies on loss are warranted. Consequently, the further examination of the construct validity of the PLMI scale is also important in a non-English speaking context. Therefore, the present study validated the factor structure of the Hungarian version of PLMI scale using confirmatory factor analysis (CFA). In addition, and based on contemporary literature, possible covariates of loss were chosen (e.g., personal characteristics such as age and previous hospitalizations, loneliness, and quality of life) to investigate the nomothetic network of the loss construct. It was hypothesized that older age, previous hospitalizations, increased perception of loneliness, and decreased quality of life would be significant predictors of higher loss. Based on the strong evidence from the literature associating grief with loss, grief reaction was also examined for the first time in the present study. It was hypothesized that increased grief reaction would be significant predictor of increased loss.

2. Methods

2.1. Participants

Participants comprised 200 adults with mental illness diagnoses recruited from an outpatient unit of mental health center in Budapest, Hungary. The inclusion criteria were: (i) having a psychiatric diagnosis according to the ICD-10 [30], (ii) taking psychiatric medications, (iii) being inpatients or outpatients in any type of psychiatric care, (iv) being patients who had not been abusing illicit substances and alcohol for at least two weeks at the time of the assessment, (v) being aged between 18 and 65 years, and (vi) being able to complete the questionnaire according to the patient's psychiatrist. The exclusion criteria were (i) having an acute phase of illness, (ii) having a diagnosis of an organic brain disorder, dementia, and/or mental retardation, and (iii) not having the mental competency and/or ability to complete the self-report questionnaire or give informed consent.

2.2. Procedure

Patients who were eligible to participate in the study were identified and contacted by the psychiatrists who were treating them. Those who agreed to participate received an information sheet about the goals of the study and signed an informed consent form. Participants then completed a self-report questionnaire. All questionnaires were translated from English to Hungarian and back translated from Hungarian to English. The possible discrepancies between the original and back-translated version were solved. Ethical approval was granted by the ethics board of the regional hospital responsible for the patients' welfare.

2.3. Measures

2.3.1. Socio-demographic questions

Gender, age, previous hospitalizations (yes/no), education (finished high school/did not finish), occupation (employed/unemployed), diagnosis, and marital status (married/divorce/widow/single) were assessed. Marital status was dichotomized into single (divorce/widow/single) and married categories in the further analysis. Different diagnoses of the patients were merged and divided into six categories according to the ICD-10 codes categorization [30]: (i) schizophrenia spectrum disorders (e.g., schizophrenia, schizotypal and delusional disorder), (ii) mood disorders (e.g., major depressive disorder, bipolar and manic disorder), (iii) stress-related disorders (e.g., phobic anxiety disorders, obsessive-compulsive disorders, somatoform disorders), (iv) behavioral syndromes associated with physiological disturbances (e.g., eating disorders), (v) personality disorders (e.g., borderline personality disorder, avoidant personality disorder), and (vi) disorders due to psychoactive substance use.

2.3.2. Personal loss from mental illness

The Personal Loss from Mental Illness (PLMI) scale is self-report instrument that assesses perceptions of personal loss due to mental illness [22]. The scale comprises 20 items concerning the losses that individuals with mental illness experience. Participants rate the degree to which they agree with each statement using a 5-point Likert scale ranging from 1 ('strongly disagree') to 5 ('strongly agree'). Higher scores reflect more personal loss due to mental illness.

2.3.3. Loneliness

The UCLA Loneliness Scale (Version 3) [31] is the most commonly used self-report instrument by both researchers and clinicians to assess feelings of loneliness. The scale comprises 20 questions asking participants to rate the frequency of their feelings on a 4-point Likert scale ranging from 'never' to 'always'. The score for each item is summed together to generate an overall loneliness score. A higher score indicates a greater degree of loneliness. The scale was found to have high internal consistency (coefficient alpha ranging from 0.89 to 0.94) and the test-retest reliability over a one-year period was also good ($r = 0.73$) [31]. The scale was also found to have good reliability among schizophrenia and bipolar patients [24] as well as in the present sample ($\alpha = 0.93$).

2.3.4. Grief

The Mental Illness Version of the Texas Inventory of Grief (MIV-TIG) [14] is an adaptation of Texas Revised Inventory of Grief (TRIG) [32]. The TRIG assesses reactions of grief following the death of a family member whereas the MIV-TIG assesses grief among family members following their relative's mental illness and the loss of that person due to the mental illness [14]. Grief manifestations in this scale are enduring emotional distress, preoccupation with the lost person, and an inability to accept the loss. The MIV-TIG includes 24 items. The first eight items assess

initial grief and the remaining 16 items assess current grief. In the present study only the final 16 items were administered. Because the present study intended to examine the grief reaction of patients themselves, a minor adaptation of the items was carried out with a simple modification of pronoun (e.g., *"I am preoccupied with the thoughts of how I could have been if not for the illness"*) as was also done in a previous study (i.e., [33]). Participants respond on a five-point scale ranging from 'completely true' to 'completely false' with higher score indicating greater grieving [14]. The reliability of the second part of MIV-TIG is high ($\alpha = 0.92$) [14]. High internal consistency was also observed in the present sample ($\alpha = 0.95$).

2.3.5. Quality of life

The Manchester Short Assessment of Quality of Life (MANSA) [34] was developed as a shortened version of the Lancashire Quality of Life Profile (LQLP) [35]. The MANSA is a 16-item self-report scale containing two differing question types: objective questions (four items) which are answered 'yes' or 'no', and subjective questions (12 items) asking individuals their overall satisfaction from life and from specific life domains. Each of the 12 questions is scored on a seven-point rating scale of satisfaction, ranging from 1 = 'couldn't be worse' to 7 = 'couldn't be better'. The total score is the average of the 12 question scores. A higher score indicates a better quality of life. The measure has satisfactory internal consistency and is highly correlated with the scores on the LQLP [34]. Very good internal consistency was also found in the present study ($\alpha = 0.87$).

2.4. Statistical analyses

In the first step of the analysis, confirmatory factor analyses (CFAs) were used to assess the factor structure and item performance of Hungarian version of PLMI scale in the sample. In CFA, acceptable degree of fit requires the comparative fit index (CFI) and the Tucker-Lewis Index (TLI) to be close to 0.95, and the model should be rejected when these indices are <0.90 [36]. The next fit index was root mean squared error of approximation (RMSEA). RMSEA below 0.05 indicates excellent fit, a value around 0.08 indicates adequate fit, and a value above 0.10 indicates poor fit [37]. In the next stage, a CFA with covariates was performed to test the association between loss and age, gender, previous hospitalizations, marital status, loneliness, grief, and quality of life. The CFA with covariates technique was chosen for the present study because it can best estimate the effect of indicators and grouping variables or other continuous variables on latent variables at the same time. All analyses were performed with MPLUS 8.1 [38].

3. Results

3.1. Descriptive statistics

The percentages, means, and standard deviations (SDs) of the study variables are shown in Table 1. The majority of the sample were women, graduated from high school, were currently employed, and had one diagnosis (where the most common were stress-related disorders). Almost half of the sample had previous hospitalizations, and 39.5% were currently married. The participants had a wide age range with a mean of 44.2 years (SD = 11.8).

3.2. Confirmatory factor analysis with covariates

Before all analyses, the reversed items were re-coded in order to assess the desired direction such as higher loss. Furthermore, the inspection of correlation matrix showed that one item (Item 13: *"I don't enjoy being around other people who have a mental illness"*) did not correlate significantly with any of the other 19 items, therefore it was removed from the further analyses. The original four-factor model of the PLMI scale did not fit closely to present data (see Table 2). After

Table 1
Descriptive statistics of the study sample.

Gender (female) N (%)	133 (66.5)
Age, mean (SD)	44.2 (11.8)
Education, graduated high school N (%)	157 (78.5)
Occupational status, employed N (%)	112 (56.0)
Marital status, married N (%)	79 (39.5)
Previous hospitalizations N (%)	89 (44.5)
Diagnosis	
Schizophrenia spectrum disorders N (%)	53 (26.5)
Mood disorders N (%)	58 (29.0)
Stress-related disorders N (%)	89 (44.5)
Personality disorders N (%)	10 (5.0)
Disorders due to psychoactive substance use N (%)	2 (1.0)
Behavioral syndrome associated with physiological disturbances N (%)	2 (1.0)
Only one diagnosis N (%)	188 (94.0)
Two diagnoses	10 (5.0)
Three diagnoses	2 (1.0)

Note: The total sample N = 200.

inspection of the modification indices and the content of the items, the allowing of three-error covariances between items yielded fit indices close to adequate fit. However, the correlations among factors were higher than $r = 0.86$ and furthermore a correlation larger than 1.00 between 'loss of roles and routine' factor and 'loss of future' factor indicated a problem with the model specification (see Table 3). The strong correlations implied that the four factors did not capture different meanings. Therefore, the unidimensionality of the loss construct was further investigated. Also tested were the one-factor model and a second-order factor model in which one second-order factor is assumed to explain the correlations among the primary factors. The problem with model estimation remained in the case of second-order factor model, therefore the one-factor model was further investigated and which yielded acceptable degree of fit if three error covariances were allowed between semantically close items such as: *"I haven't really changed very much because of having a mental illness"*(reversed item) and *"Having a mental illness has really changed who I am"*; *"I miss the friends that I had before I became ill"* and *"I have lost a lot of friends because of being mentally ill"*; and finally *"Having a mental illness has taken away my normal daily routine"* and *"I liked myself better before I became mentally ill"*. This measurement model was also supported with exploratory factor analysis, in which the eigenvalue of the first factor (7.06) was almost five times higher than that of the second factor (1.44). The factor loadings of the original four-factor model and the accepted one-factor model are presented in Table 3. The factor loadings of the one-factor model ranged between 0.29 and 0.74. The mean item loading was 0.56. The internal consistency was also excellent (Cronbach $\alpha = 0.90$).

To identify the covariates of loss, CFA with covariates analysis was performed. The bivariate correlations between the explanatory variables and the latent construct are presented in the supplemental materials (i.e., Supplementary Table 1). Mood disorder diagnoses were significantly related with higher perception of loss ($r = 0.18$), while stress-related diagnosis was associated with less perceived loss ($r = -0.20$). No other diagnostic categories were significantly related to loss. Loneliness and grief were also positively associated with loss ($r = 0.76$ and 0.71 respectively). However, better quality of life was associated with lower level of perceived loss ($r = -0.73$).

In the multivariate analysis, only the significant correlates of loss were entered. Higher loneliness ($\beta = 0.36$, $p < .001$), higher reaction of grief ($\beta = 0.36$, $p < .001$), and lower quality of life ($\beta = -0.25$, $p < .001$) were significantly related with higher perception of loss. No other variables were significantly associated with loss. The lack of the association with mood and stress-related diagnoses in the multivariate analysis can be explained by the large comorbidities between these two categories ($r = 0.50$).

Table 2
Fit indices of the alternative measurement models of Personal Loss from Mental Illness scale.

		χ^2	Df	CFI	TLI	RMSEA	C fit of RMSEA	SRMR
Model 1*	One-factor model	253.0	148	0.916	0.903	0.060	0.102	0.054
Model 2	Four first-ordered factors	297.2	146	0.879	0.858	0.072	<0.0001	0.059
Model 2a*	Four first-ordered factors with error covariances	231.4	142	0.928	0.914	0.056	0.212	0.052
Model 3*	Second-order factor model	235.4	144	0.927	0.913	0.056	0.202	0.053

Notes: N = 199. *Four error covariances were allowed (between "I haven't really changed very much because of having a mental illness" (reversed item) and "Having a mental illness has really changed who I am"; between "I miss the friends that I had before I became ill"; and "I have lost a lot of friends because of being mentally ill"; between "Having a mental illness has really changed who I am" and "People who knew me before would hardly recognize me now." and finally between "Having a mental illness has taken away my normal daily routine" and "I liked myself better before I became mentally ill"). Specification error occurred during the analysis. All analyses were performed with the exclusion of Item 13.

4. Discussion

The main goal of the present study was to investigate and validate the Personal Loss from Mental Illness (PLMI) scale in a relatively large and diverse sample of Hungarian adults with mental disorder diagnoses. The PLMI scale is a psychometric instrument that assesses patients' perception of loss following mental illness [22]. The present study supported a one-factor model over the previously proposed four-factor model. Based on the results, mentally ill patients do not differentiate between different aspects of loss, but do possess a general perception of loss. It is possible that the different factor structure found in the present study may be due to cross-cultural differences that exist in stigma towards mental illness [39]. For example, previous studies have suggested that in particular areas in Europe, such as countries in Eastern and Central Europe, higher stigma might be especially present due to the communist history and the deficiency in mental health reforms that exist in these countries [40,41]. A recent Hungarian study found that stigmatic attitudes were highly widespread among the Hungarian public and remained constant over a 14-year period (2001–2015) [40]. As such, it is possible that compared to the sample in the original PLMI scale study which was conducted in the US [22], patients in Hungary are more exposed and affected by the stigma, and thus their losses are perceived as a general sense of intense loss. Interestingly, this possibility

may indicate that the pattern of perceived loss may be distinctive in different countries. However, further studies are needed to examine the factor structure of the PMLI scale (and its' possible association with stigma) so a more definitive conclusion can be formulated.

In the present study, patients' perceived loss was positively associated with loneliness and negatively associated with quality of life, supporting the construct validity of perceived loss. These results are consistent with the study hypotheses and with findings from previous literature, confirming the major role and impact of loss in patients' lives [22,26]. Conversely, patients' personal characteristics (e.g., age, gender, marital status, previous hospitalizations) did not have a statistically significant role in perception of loss. These results are in contrast with the results of Stein et al. [22], who found that age and hospitalizations were associated with loss. However, other results reported here were in accordance with their findings regarding the non-significant correlation between loss, gender, and marital status. Consequently, these results may stress the prevalence and magnitude of loss in patients' lives irrespective of their personal characteristics.

Educational and occupational status significantly correlated with loss, supporting the construct validity of perceived loss. Therefore, higher perceived loss was related to unemployment and lack of high school education. This is in accordance with the fact that mental illnesses usually develop in early adulthood [42], and causes difficulties

Table 3
Confirmatory factor analysis of Personal Loss from Mental Illness scale: Factor loadings.

	Four-factor model*				One-factor model*
	Loss of roles and routine	Loss of former relationships	Loss of former self	Loss of future	Perceived loss
1 "Chances are good that I will get married and have a family"**	0.30				0.29
2 "I will probably never be able to own my own house"	0.32				0.33
3 "It is hard for me to find a good reason to get out of bed"	0.69				0.69
4 "I have things that I like doing everyday"**	0.43				0.42
5 "I doubt that I will have the same future as others my age"	0.59				0.59
6 "The plans I make for each day often do not get done"	0.68				0.68
7 "Having a mental illness might stop me from getting/keeping a good job"	0.74				0.74
8 "I miss the friends that I had before I became ill"		0.71			0.68
9 "I have lost a lot of friends because of being mentally ill"		0.67			0.62
10 "Having a mental illness has kept me from being an important member of my family"		0.69			0.65
11 "I liked myself better before I became mentally ill"		0.56			0.53
12 "People who knew me before would hardly recognize me now"		0.64			0.62
14 "I haven't really changed very much because of having a mental illness"**			0.41		0.36
15 "Having a mental illness has really changed who I am"			0.72		0.68
16 "Having a mental illness has taken away my normal daily routine"			0.82		0.74
17 "I feel that I don't have the kind of friends that other people my age have"				0.70	0.70
18 "I don't plan for the future but I do have hopes for what I would like to happen"**				0.32	0.33
19 "Other people often tell me not to plan too far into the future"				0.44	0.43
20 "My future is as bright now as it was before becoming ill"**				0.70	0.70
Correlations of the latent factors					
Loss of former relationships	0.91				
Loss of former self	0.91	0.86			
Loss of future	1.03(!)	0.93	0.86		

Notes: N = 199. Item 13 was excluded due to close to zero factor loading on its respective factor. *: The error covariances between item 8 and item 9. item11 and item 16. item15 and item14, and item15 and item12 are freed. **: Reversed items. All reversed items were recoded before the analyses. (!): The higher than 1.00 correlation indicates the untrustfulness of this model specification and shows that the latent factors cannot be distinguished statistically. The correlation larger than 1 is a result of the model estimation and a clear sign that we had to reject this model.

in getting diploma and further acquiring and maintaining a job [23]. Stein et al. [22] also found occupation to be significantly negatively related to loss, but did not find any association between education and loss. It might be that the larger sample included in the present study allowed higher statistical power, leading to differences in the results yield by the two studies. In light of the preliminary nature of this study, further studies are needed to formulate more robust conclusions.

The present study is the first to quantitatively examine the experience of grief among a relatively large sample of mentally ill patients, and the first to examine its association with the perception of loss. While the literature on grief following mental illness was limited to the experience of families, reporting significant grief levels among parents, caregivers, and siblings of mentally ill patients [13,14,43–46], the present study is the first to not only find that mentally ill patients themselves also grieve, but that higher loss perception because of their illness, is related with higher grief. Grief following mental illness is described in the literature as prolonged, compatible with the chronic nature of mental illnesses, and brings evolving challenges [44]. While grief is a vital process on the way to acceptance and recovery [47], prolonged and unresolved grief has been found to be a risk factor for psychological problems, poor physical health, and suicidality [48–51]. Among families of mentally ill patients, grief has been associated with emotional distress, lower health status, and poorer psychological wellbeing [44]. In the present study, correlations were found between higher grief, higher loneliness, and lower quality of life, emphasizing the need to target loss in therapeutic settings and to explore further grief in patients, to get better understanding of its manifestations and its possible role in coping and recovery.

Another novel finding of the present study (although this was not the main focus) was that loss was experienced differently by patients with different diagnoses, because the mood disorders group reported higher levels of loss, while the stress-related disorders group reported lower level of loss. Although any mental illness brings challenges and losses, these might be more prominent in the mood disorders group, compared to stress-related disorders which are considered as having less severe and chronic manifestation [52–54]. Individuals with mood disorders often experience affective relapses [55], alternating periods of mania, and depressed mood, sometimes with severe episodes that may also contain delusions and hallucinations [56]. Inevitably, these characteristics affect and compromise individuals' psychosocial functioning, leading to difficulties in creating and maintaining social contacts, obtaining and maintaining employment, and diminishing their self-esteem and quality of life [57,58].

Furthermore, stigma surrounding mental illness might also affect loss perception among different patients. Public stigma (i.e., negative stereotypes held by members of the society towards mental illness; [59]) although affecting all patients, is known to be more destructive for those with more severe illness manifestation [60,61], such as mood disorders [53,62]. Moreover, these patients, compared to people with stress-related disorders, demonstrate higher levels of internalized stigma [63,64]. Internalized stigma describes the process whereby stigmatized individuals themselves internalize and adopt stigmatic beliefs into their own identity [65]. Known to have harmful consequences, internalized stigma has been found to be destructive to individuals with mood disorders as well in terms of reducing their social functioning [66], impairing functioning in the workplace [67], and leading to loss of life opportunities resulting in unemployment, lack of opportunities to establish a family, and lack of social network [68,69].

It should also be noted that no significant difference in perceived loss was found between the schizophrenia spectrum disorders group and the other groups. Because this patient group is also affected by stigma to an even greater extent [70–72] and characterized by more severe illness manifestation leading to many losses [12], differences might have been expected. One possible reason for this may be the categorization chosen in the present study of different disorders into this group, which may have affected the results. Another possible reason may be

the study inclusion criterion of patients who had the capacity to answer the study questionnaire, which might have excluded patients with more severe manifestation of schizophrenia spectrum disorders. Because there might be differences between actual losses and perception of losses, it is also possible that these patients do not perceive their losses to the same extent as they actually are. Schizophrenia spectrum disorders are characterized by prolonged course, including sequences of relapses, remissions, and very often re-hospitalizations, which result in a consequent disruption to their functioning, goals they are trying to achieve, and the life they are trying to construct [15]. Consequently, individuals tend to experience many losses which are sometimes very difficult for them to completely comprehend their meaning and/or what they symbolize, because they continue to change and evolve over the years [15]. Therefore, it is possible that these patients are overwhelmed by loss and do not perceive the enormity of it. This misperception can also be interpreted as denial, a defense mechanism used in the face of overwhelming and anxiety-provoking reality of losses [73–76]. Finally, it is also possible that the schizophrenia spectrum disorders patients included in the present study were less insightful regarding their illness and the losses it brings into their lives than the other patient groups. According to the literature, as a result of the illness process [77], 50%–80% of schizophrenia spectrum disorders patients are at least partially unaware of their illness [78], and that poor insight is a prevalent feature of schizophrenia, not only among patients in acute psychosis, but also among outpatients in stable state [79,80]. In fact, Amador et al. [81] found that a range of illness awareness deficits are more severe and extensive among these patients compared with those with major depressive disorders with or without psychosis. Other studies have found that patients with schizophrenia have poorer awareness of social consequences of their illness than patients who have major depression with psychotic features and bipolar patients [82,83]. As all these options are possible, and considering the limitation of the grouping of patients or labeling them with a diagnostic category used in the present study together with the preliminary nature of the findings, more research is needed to investigate the perception of loss among these patient groups.

The present study has important clinical implications. First, and despite the limitation of grouping of patients, the findings emphasize the importance of the internal experience of mentally ill patients irrespective of their diagnoses because these were controlled for in the multivariate analysis. Irrespective of how much or little insight mental patients may consider to have [83,84], the present study demonstrated that patients were well aware of changes in their lives due the losses following their illness. Their awareness is ever-present, leading them to grieve for their old self, and compromising their feelings of belonging to others and their quality of life. However, in practice, the focus of rehabilitation protocols is mainly on helping patients to acquire skills with the goal of activation and integration in the community, while addressing and recognizing the losses encountered by patients is being neglected [3,10]. Acknowledging the losses patients are experiencing, helping them to accept them, coming to terms with the fact they are ill, and finding new goals and meaning in life, should be an integral part of interventions and treatments offered to mentally ill patients [3,10]. Educating patients, normalizing their experience, and encouraging them to share their experiences with others with similar experiences can also be important in decreasing feelings of loneliness [3]. This has been found to be a risk factor for a wide range of health problems and death [85]. Proper treatment might also reduce grief and improve a patient's quality of life. Second, because the present study indicates that there might be differences in the way different patients perceive their illness, loss might be especially important to address among patients with mood disorders.

The present study is not without limitations. First, as the study mainly explored the loss experience of patients with any psychiatric diagnoses without focusing on specific diagnoses, and to avoid the extra burden on patients, their diagnoses solely relied on the assessment

conducted by their treating psychiatrist, and were not based on additional systematic assessments (such as structured interviews). Furthermore, for pragmatic reasons due to the sample size, patients were classed into broad diagnostic sub-groups because participants had so many different diagnoses. Therefore, a wide range of diagnoses were sometimes treated as one sub-group, making it difficult to identify differences which might exist within these sub-groups. Consequently, and considering the lack of research on the topic, the study results should be interpreted and applied with caution. Further research is needed to examine and clarify differences which might exist in loss perception of patients with different diagnoses.

Given that the severity of illness symptoms (i.e., severity of depressive symptoms or symptom levels in schizophrenia) was not assessed and controlled for, there is a possibility that the degree of illness symptoms may have impacted the associations between diagnoses, loss, grief, loneliness and quality of life.

While the number of previous hospitalizations can be an important indicator for illness severity, the present study only assessed the presence or absence of them. This may possibly have affected the participants' responses in relation to impact on loss. However, the number of previous hospitalizations also has limitations and can be biased. Asking participants about the number of previous hospitalizations may be affected by recall difficulties and social desirability (due to the self-reported nature of the data), and may also be confounded with age because the number of previous hospitalizations might be higher among older patients. The convenience sample used in the present study also compromises the generalization of the results. However, it provides insight into the planning of further research on this subject. Finally, due to the cross-sectional nature of the study, causality between variables cannot be assumed. Future studies with a larger sample size are needed to examine the factor structure of the PLMI scale. This would also help clarify whether the poor psychometric fit of Item 13 which was unique to the sample in the present study, or whether it represents more profound problem with the item's content. It might be that Item 13 ("*I don't enjoy being around other people who have a mental illness*") reflects an internalized negative attitude towards mental illness rather than a perceived loss. Future studies might also examine loss among more specific patient groups with a larger sample size.

4.1. Conclusions

Despite the limitations outlined, the present study provides important insights into the loss experience of mentally ill patients and important implications for health professionals. First and foremost is the need to examine patients with different diagnoses about their sense of loss and to better understand how to provide interventions that will address their feelings, helping them come to terms with their illness and improving their lives. Future research should also investigate the impact of loss on the adjustment of patients in different and more specific illness groups. Additionally, the role of perceived loss in non-adherence with medication and psychotherapeutic treatment – a highly prevalent problem in the psychiatry field – should also be examined.

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Declaration of competing interest

None.

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