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Evaluating Romantic and Sexual Functioning Among Persons With Psychosis: Reliability and Validity of Two Measures

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Objective: Despite increasing recognition of the difficulties faced by persons with psychosis with respect to intimacy and sexuality, there is a lack of valid and reliable instruments to measure these areas of functioning in this population. This study aimed to evaluate the psychometric properties (i.e., construct and convergent validity, internal consistency, test–retest reliability) of two measures, the Multidimensional Sexuality Questionnaire (MSQ) and the Romantic Relationship Functioning Scale (RRFS), in a sample of individuals with schizophrenia-spectrum disorders. ***Method:*** Participants (N = 196) were administered a series of questionnaires online, with a subset of 40 respondents agreeing to complete the MSQ and the RRFS a second time at a 2-week follow-up. Confirmatory factor analyses were employed to examine the construct validity of both measures, while internal consistency estimates and correlation coefficients were computed to assess each instrument's reliability and convergent validity. ***Results:*** The original factor structures of the MSQ and the RRFS were found to be acceptable, with αs ranging from 0.68 to 0.94 and 0.74 to 0.86, respectively. Test–retest reliability and convergent validity with other measures (First-Episode Social Functioning Scale [FESFS]—Intimacy subscale, Self-Esteem Rating Scale—Short Form [SERS-SF], Brief Symptom Inventory [BSI]—Anxiety and Depression subscales) were also demonstrated. ***Conclusions and Implications for Practice:*** Future research should replicate these findings in larger samples and other languages, as well as evaluate additional aspects of the instruments' quality. Clinicians may benefit from using these tools to better understand the intimacy needs of service users with psychosis and offer corresponding services.

Impact and Implications

This study found that two questionnaires, the Multidimensional Sexuality Questionnaire and the Romantic Relationship Functioning Scale, could be used with people who experience psychosis. Both instruments can help inform service providers about the intimacy needs of service users with psychosis and offer corresponding services.

Keywords: romantic relationships, intimacy, sexuality, psychosis, validity

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Psychotic disorders, such as schizophrenia, are often associated with poor social functioning, which encompasses independent living skills (e.g., cleaning, cooking, hygiene), interpersonal relationships, and academic and occupational performance (Lecomte et al., 2008a; Velthorst et al., 2017). In the interpersonal domain, intimate relationships and sexuality seem to be especially challenging. In fact, many individuals with a psychotic disorder continue to struggle with dating and romantic relationships despite having established strong social ties with family and friends (Redmond et al., 2010). In addition to social skills deficits, attachment difficulties, such as fears of proximity or abandonment, issues with self-esteem and stigma, and sexual dysfunctions resulting from medication, all contribute to this group's lower functioning in intimate relationships (de Jager & McCann, 2017; Pillay et al., 2018; Redmond et al., 2010). Although healthy romantic relationships have been found to promote recovery from mental illness (Boucher et al., 2016; Braithwaite & Holt-Lunstad, 2017), romantic relationship functioning is rarely addressed by health professionals, and few tools are currently available to adequately evaluate the romantic and sexual functioning of persons with a psychotic disorder (Cloutier et al., 2020; McCann et al., 2019).

To date, most intimacy-related instruments used with individuals with psychotic disorders have focused on identifying various sexual dysfunctions. The Arizona Sexual Experiences Scale (ASEX; McGahuey et al., 2000) is a rating scale designed to assess sexual dysfunction across five domains: drive, arousal, penile erection/vaginal lubrication, ability to achieve orgasm, and satisfaction with orgasm. It can be self- or clinician-administered, with total scores ranging from 5 to 30 and higher scores indicating greater sexual dysfunction. Despite having demonstrated high internal consistency, high test–retest reliability, and convergent and discriminant validity in psychiatric populations (Rizvi et al., 2011), each domain is evaluated using a single item, and the last three questions are only completed if the respondent has been sexually active in the past month. Given the lower rates of sexual activity among persons with a psychotic disorder compared to other disorders (Bianco et al., 2019; Cloutier et al., 2020), as well as the impact of other factors (e.g., fear and anxiety due to past trauma and discrimination; de Jager & McCann, 2017) on this group's sexual behavior, the ASEX may provide only a limited assessment of the sexual difficulties experienced in the context of a mental disorder. Similarly, the Psychotropic-Related Sexual Dysfunction Questionnaire (PR-SexDQ; Montejo & Rico-Villademoros, 2008) is a seven-item clinician-administered rating scale that evaluates the presence of sexual dysfunction with respect to desire, arousal, and orgasm, as well as the respondent's subjective tolerance of the sexual dysfunction. Total scores range from 0 to 15, with higher scores indicating greater sexual dysfunction. Like the ASEX, the PR-SexDQ has demonstrated adequate reliability and validity in clinical populations (Montejo & Rico-Villademoros, 2008), but does not explore alternative explanations for patients' sexual difficulties.

While the above measures can help detect problems at different stages of sexual activity among individuals with psychotic disorders, they are restricted to evaluating sexual dysfunctions at a physical level (mostly medication-induced) and fail to assess psychological factors that might influence respondents' overall sexual functioning. In this regard, the Derogatis Sexual Functioning Inventory (DSFI; Derogatis & Melisaratos, 1979) may provide a more detailed picture of respondents' sexual lives and functioning, as it touches upon themes such as experiences, attitudes, and body image. However, the original DSFI takes considerable time to complete and its subsequent, condensed version (Derogatis Interview for Sexual Functioning–Self-Report, Derogatis, 1997), utilizes separate forms for males and females, thereby excluding people with a nonbinary gender identity. Thus, a nongendered, self-report questionnaire that considers various psychological facets of the human sexual experience, such as the Multidimensional Sexuality Questionnaire (MSQ; Snell et al., 1993), may be better suited to identify specific targets for intervention. Indeed, the MSQ includes questions about confidence, self-awareness, and the ability to communicate one's needs during sexual encounters, as well as distress linked to sexual experiences. However, the MSQ has never been empirically validated among persons with psychosis.

In order to adequately evaluate the intimacy needs and concerns of this population, we must also aim to better understand their experiences in the context of romantic relationships. Thus, in addition to sexual functioning measures, high-quality instruments are also needed to assess this group's broader romantic functioning. To our knowledge, only the Romantic Relationship Functioning Scale (RRFS; Bonfils et al., 2016) has been specifically developed for use with people with serious mental illness and asks about perceived resources and obstacles associated with dating and committed relationships. Unfortunately, its psychometric properties have never been evaluated in a sample of individuals with psychosis.

There is a clear need for valid and reliable tools that can be used to evaluate this population's romantic and sexual functioning, and consequentially, offer corresponding services to improve their intimate relationships (Helu-Brown & Aranda, 2016; Lecomte et al., 2005). Given the potential research and clinical utility of the MSQ and the RRFS, the goal of the present study was to conduct a preliminary validation (i.e., construct validity, internal consistency, convergent validity, test–retest reliability) of these two instruments among persons with psychosis.

Method

Participants

A total of 196 participants were recruited and self-referred from several clinics specializing in psychosis, as well as ads posted online (i.e., Facebook groups for people with psychosis, community mental health social media platforms). Individuals were included if they were 18 years of age or older, could read and understand either English or French, and had reported having been formally diagnosed with a schizophrenia-spectrum disorder (e.g., schizophrenia, schizoaffective disorder, schizophreniform disorder) or a mood disorder with psychotic features (e.g., bipolar I disorder, major depressive disorder). Descriptive statistics for the study sample can be found in Table 1.

Measures

A sociodemographic questionnaire was used to collect descriptive data and included items relating to age, gender, sexual orientation, education level, civil and work status, as well as participants' current financial and living situation, and self-reported psychiatric diagnoses. Convergent validity was assessed using the Intimacy subscale of the First-Episode Social Functioning Scale (FESFS; Lecomte et al., 2014), the Self-Esteem Rating Scale—Short Form (SERS-SF; Lecomte et al., 2006), and the Anxiety and Depression subscales

Table 1
Participant Characteristics

Characteristic	Total (N = 196)	
	n	%
Age	35.78 ± 11.84	
Mother tongue		
French	88	44.9
English	83	42.3
Other	25	12.8
Gender identity		
Cis man	72	36.7
Cis woman	93	47.4
Gender fluid	12	6.1
Trans man	7	3.6
Trans woman	2	1.0
Does not identify with any option	7	3.6
Prefers not to answer	3	1.5
Sexual orientation		
Asexual	8	4.1
Bisexual	39	19.9
Gay	4	2.0
Heterosexual	115	58.7
Lesbian	3	1.5
Queer	5	2.6
Questioning	4	2.0
Two-spirited	2	1.0
Unsure	5	2.6
Does not identify with any option	9	4.6
Prefers not to answer	2	1.0
Civil status		
Single	91	46.4
In a relationship	45	23.0
Common-law partner	13	6.6
Married	26	13.3
Separated/divorced	20	10.2
Widowed	1	0.5
Education level		
No high school diploma	25	12.8
High school diploma	70	35.7
College degree	19	9.7
Bachelor's degree	51	26.0
Master's or doctorate degree	31	15.8
Occupation		
Working	74	37.8
Studying	37	18.9
Supported employment or vocational program	10	5.1
No occupation	47	24.0
Other (e.g., volunteering)	28	14.3
Source of income		
Work	55	28.1
Loan or scholarship	6	3.1
Parental assistance	14	7.1
Social assistance	56	28.6
Multiple sources	24	17.3
Other (e.g., spouse's salary)	31	15.8
Primary diagnosis		
Schizophrenia	74	37.8
Schizoaffective disorder	67	34.2
Schizophreniform disorder	1	0.5
Mood disorder with psychotic features	35	17.9
Other psychosis or unspecified	19	9.7

of the Brief Symptom Inventory (BSI; Derogatis & Melisaratos, 1983). The FESFS, the SERS-SF, and the BSI are available both in English and in French and have been validated in psychiatric samples (Derogatis & Melisaratos, 1983; Lecomte et al., 2006, 2014).

The FESFS is a 24-item self-report questionnaire that measures social functioning in different areas of life (e.g., independent living skills, relationships, school and/or work abilities). The Intimacy subscale contains 11 items and asks about recent dating experiences, romantic and sexual partners, and emotional intimacy. Higher scores indicate greater functioning with respect to intimate relationships. This FESFS Intimacy subscale was chosen as a convergent measure because it is one of the few validated instruments measuring a construct closely related to romantic and sexual functioning.

The SERS-SF is a 20-item self-report questionnaire that measures positive and negative aspects of self-esteem, with higher, positively valued total scores indicating better self-esteem. The BSI is a self-report questionnaire that measures a variety of psychiatric symptoms. The Anxiety and Depression subscales of the BSI are composed of five items each, with higher subscale scores indicating greater symptom severity. The SERS-SF and the BSI subscales were chosen as convergent measures because they assess constructs that are linked, albeit indirectly, to romantic and sexual functioning, as self-esteem and psychopathology have been shown to influence social relationships (Harris & Orth, 2020; Reinhard et al., 2020). The Anxiety and Depression subscales of the BSI were specifically selected over other subscales because they reflect symptoms that are experienced by a wide range of individuals, while also frequently displaying comorbidity with psychosis (Wilson et al., 2020).

The MSQ and the RRFS were the primary measures of interest for this study. The MSQ had previously been translated to French (Ravart et al., 1993), while a French translation of the RRFS was completed by our team using the back-translation method. This procedure involves translating a document into a different language before retranslating it back into the original source language and reconciling discrepancies between the two versions (Vallerand, 1989).

The MSQ is a 60-item self-report questionnaire that measures several tendencies associated with human sexuality across 12 subscales: sexual self-esteem, sexual preoccupation, internal sexual control, sexual consciousness, sexual motivation, sexual anxiety, sexual assertiveness, sexual depression, external sexual control, sexual self-monitoring, fear of sexual relations, and sexual satisfaction. Higher subscale scores indicate greater levels of each respective sexual tendency. Example items for the MSQ include questions such as "I am very alert to changes in my sexual desires" and "I am disappointed in the quality of my sex life."

The RRFS is a 22-item questionnaire assessing various aspects of romantic competence, including beliefs and attitudes about intimate relationships, perceived social skills, and self-confidence. It contains the following three subscales: Resources, Risks, and Stigma. Higher subscale and total scores are indicative of greater romantic relationship functioning. Example items for the RRFS include questions such as "I am good at communicating in romantic relationships" and "I am scared that a romantic partner would take advantage of me."

Procedure

Data were collected between July 2020 and April 2022. After providing informed consent, participants completed each of the above measures online through the Qualtrics platform. In addition, a subset of participants (n = 40) agreed to complete the MSQ and the RRFS twice to measure test–retest reliability, with the second administration occurring 2 weeks after the first. No financial

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compensation was offered for taking part in the study, but participants were automatically entered into a draw to win an iPad once data collection were completed. The project was evaluated and approved by the Institut universitaire en santé mentale de Montréal's ethics committee (Project No. MP-12-2020-2138).

Analyses

Confirmatory factor analyses (CFA) were performed using R Version 4.0.0 to evaluate the construct validity of the MSQ and the RRFS subscales as originally conceptualized (Bonfils et al., 2016; Snell et al., 1993). CFA are generally preferred over other methods (e.g, exploratory factor analysis, principal component analysis) when testing a theoretical model of latent factors (Schmitt, 2011). Internal consistency calculations (Cronbach's α) were also computed in SPSS Version 27, as were correlational analyses in order to assess convergent validity and test–retest reliability.

Results

CFA and Internal Consistency

As can be seen in Table 2, a 12-factor structure was endorsed for the MSQ. Model fit indices were acceptable (Fan et al., 1999; Hu & Bentler, 1999), with a root-mean-square error of approximation (RMSEA) of 0.05, standardized root-mean-square residual (SRMR) of 0.09, Comparative Fit Index (CFI) of 0.88, and Tucker–Lewis Index (TLI) of 0.87. All items loaded significantly on their respective factors, ranging from 0.30 to 0.92. The highest factor loadings were observed for the Sexual Preoccupation and Sexual Satisfaction subscales. The weakest factor loadings were observed for the Internal Sexual Control and Sexual Monitoring subscales, including Items 15, 34, and 39. Internal consistency coefficients were acceptable to excellent, ranging from 0.68 to 0.94. Global scores for the positive and negative aspects of the MSQ were also computed, with internal consistency estimates of 0.90 and 0.93, respectively.

As shown in Table 3, a three-factor structure was also confirmed for the RRFS. Model fit indices were good (Fan et al., 1999; Hu & Bentler, 1999), with an RMSEA of 0.06, SRMR of 0.08, CFI of 0.91, and TLI of 0.89. All items loaded significantly on their respective factors, ranging from 0.28 to 0.80. The highest factor loadings were observed for the Resources and Stigma subscales.

Table 2
CFA and Internal Consistency for the MSQ

Proposed subscale and associated items	Factor loading (standardized β)	*z*-statistic
Sexual self-esteem (α = 0.88)		
Item 1	0.730	N/A
Item 13	0.821	11.352***
Item 25	0.712	9.264***
Item 37	0.869	12.007***
Item 49	0.730	10.227***
Sexual preoccupation (α = 0.94)		
Item 2	0.846	N/A
Item 14	0.824	15.021***
Item 26	0.626	9.856***
Item 38	0.898	19.890***
Item 50	0.902	19.650***
Internal sexual control (α = 0.68)		
Item 3	0.398	N/A
Item 15	0.304	3.27**
Item 27	0.744	3.799***
Item 39	0.317	3.547***
Item 51	0.762	4.067***
Sexual consciousness (α = 0.74)		
Item 4	0.635	N/A
Item 16	0.766	9.310***
Item 28	0.437	5.192***
Item 40	0.502	5.949***
Item 52	0.719	7.253***
Sexual motivation (α = 0.90)		
Item 5	0.828	N/A
Item 17	0.804	14.84***
Item 29	0.779	13.323***
Item 41	0.814	14.540***
Item 53	0.767	13.416***
Sexual anxiety (α = 0.85)		
Item 6	0.690	N/A
Item 18	0.629	7.972***
Item 30	0.766	8.889***
Item 42	0.619	8.447***
Item 54	0.833	11.596***
Sexual assertiveness (α = 0.77)		
Item 7	0.504	N/A
Item 19	0.489	5.178***
Item 31	0.465	4.941***
Item 43	0.859	6.465***
Item 55	0.757	6.553***
Sexual depression (α = 0.89)		
Item 8	0.732	N/A
Item 20	0.838	15.777***
Item 32	0.886	15.396***
Item 44	0.834	13.441***
Item 56	0.650	10.074***
External sexual control (α = 0.85)		
Item 9	0.690	N/A
Item 21	0.782	11.056***
Item 33	0.857	10.935***
Item 45	0.821	10.127***
Item 57	0.542	6.278***
Sexual monitoring (α = 0.82)		
Item 10	0.627	N/A
Item 22	0.845	7.563***
Item 34	0.353	3.853***
Item 46	0.784	7.692***
Item 58	0.782	7.947***
Fear of sexual relations (α = 0.86)		
Item 11	0.749	N/A
Item 23	0.900	13.771***
Item 35	0.893	12.406***
Item 47	0.695	9.987***
Item 59	0.421	5.545***
Sexual satisfaction (α = 0.90)		
Item 12	0.800	N/A
Item 24	0.871	16.746***
Item 36	0.709	10.824***
Item 48	0.680	9.469***
Item 60	0.922	17.286***

Note. CFA = confirmatory factor analysis; MSQ = Multidimensional Sexuality Questionnaire.
** $p \leq .01$. *** $p \leq .001$.

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Table 3
CFA and Internal Consistency for the RRFS

Proposed subscale and associated items	Factor loading (standardized β)	*z*-statistic
Resources (α = 0.86)		
Item 1	0.430	N/A
Item 2	0.697	5.309***
Item 3	0.658	5.758***
Item 4	0.278	3.408**
Item 7	0.550	4.660***
Item 8	0.454	5.591***
Item 11	0.487	4.189***
Item 12	0.803	5.675***
Item 14	0.561	5.078***
Item 15	0.587	4.613***
Item 17	0.780	5.365***
Item 18	0.464	4.857***
Item 22	0.617	4.724***
Risks (α = 0.77)		
Item 6	0.394	N/A
Item 10	0.646	4.138***
Item 13	0.581	4.021***
Item 16	0.732	3.705***
Item 20	0.699	3.897***
Item 21	0.610	3.715***
Stigma (α = 0.74)		
Item 5	0.587	N/A
Item 9	0.737	7.599***
Item 19	0.762	7.022***

Note. CFA = confirmatory factor analysis; RRFS = Romantic Relationship Functioning Scale.
** $p \leq .01$. *** $p \leq .001$.

The weakest factor loadings were observed for the Resources and Risks subscales, including Items 4 and 6. Internal consistency coefficients were acceptable to good, ranging from 0.74 to 0.86. A global score for the RRFS was also computed, with an internal consistency estimate of 0.89.

Convergent Validity and Test–Retest Reliability

Correlation coefficients between each measure of interest (MSQ, RRFS) and the FESFS Intimacy subscale, the SERS-SF, and the BSI Anxiety and Depression subscales can be found in Table 4. MSQ positive and negative scores were significantly correlated with FESFS Intimacy and SERS-SF scores. MSQ negative scores were also correlated with BSI Anxiety and Depression scores, although MSQ positive scores were not. Meanwhile, RRFS scores were significantly correlated with all convergent measures. Test–retest reliability was high for both MSQ positive ($r = .90$, $p < .001$) and negative ($r = .93$, $p < .001$) scores, as well as RRFS scores ($r = .90$, $p < .001$).

Discussion

This study aimed to evaluate the psychometric properties (i.e., construct validity, internal consistency, convergent validity, test–retest reliability) of two intimacy-related instruments among persons with psychosis. Results showed that the MSQ and the RRFS can be used as originally intended with this population. The MSQ allows for a more comprehensive examination of sexual functioning than existing instruments due to its 12 subscales that measure constructs beyond sexual dysfunction, while the RRFS can inform mental health professionals about clients' functioning in romantic relationships and offer assistance in areas of special concern (e.g., resources). The lack of valid and reliable questionnaires for assessing intimacy among individuals with a psychotic disorder ultimately hinders advancements in research and clinical settings. Thus, it is our hope that the present study will stimulate greater scientific interest in this topic and lead to the development of corresponding services.

Observed differences in convergent validity for the MSQ positive and negative scores are worthy of further exploration. It is interesting to note that the BSI Anxiety and Depression subscales were uncorrelated with the MSQ positive scores but significantly correlated with the MSQ negative scores. One potential explanation for this finding is that the MSQ negative score includes items from both the Sexual Anxiety and Sexual Depression subscales. Respondents with greater anxious and/or depressive symptoms may also experience higher levels of anxiety and depression in the context of sexual experiences (Montejo, 2019; Soler et al., 2021). However, RRFS scores were also found to be significantly correlated with the BSI's Anxiety and Depression scores. This is likely a reflection of the wording and content of several items in the RRFS, as many questions pertain to adverse dating experiences (e.g., rejection, loss). As such, participants' responses may have revealed associations between general psychopathology and negative experiences in romantic relationships. This finding highlights an important avenue for future research.

Future work should also consider optimizing the MSQ by reducing the length of the measure, as well as improving certain subscales

Table 4
Convergent Validity for the MSQ and the RRFS

Measure	1	2	3	4	5	6	7
1. MSQ positive (α = 0.90)	—						
2. MSQ negative (α = 0.93)	−.22**	—					
3. RRFS global (α = 0.89)	.39**	−.52**	—				
4. FESFS intimacy (α = 0.75)	.53**	−.26**	.51**	—			
5. SERS global (α = 0.94)	.33**	−.45**	.63**	.23**	—		
6. BSI anxiety (α = 0.88)	−.04	.33**	−.32**	−.02	−.55**	—	
7. BSI depression (α = 0.89)	−.06	.44**	−.36**	−.10	−.62**	.60**	—

Note. MSQ = Multidimensional Sexuality Questionnaire; BSI = Brief Symptom Inventory; SERS = Self-Esteem Rating Scale; FESFS = First-Episode Social Functioning Scale; RRFS = Romantic Relationship Functioning Scale.
** $p \leq .01$.

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(e.g., internal sexual control, sexual consciousness, sexual assertiveness, sexual monitoring). Similarly, the RRFS could be enhanced by refining and/or adding items to the Risks and Stigma subscales. Future studies would also benefit from examining the psychometric properties of both instruments in other languages.

These findings must be considered in light of the present study's limitations. First, participants' psychiatric diagnoses were self-reported and therefore, could not be verified. Although we removed any entries where diagnostic information was unclear or did not meet our inclusion criteria, the accuracy of the remaining cases cannot be fully guaranteed. Second, other factors reflecting instrument quality (e.g., discriminant validity, sensitivity to change) were not explored and will need to be investigated in independent samples. Finally, responses for the English and French versions of both questionnaires were combined rather than analyzed separately due to our small sample size. Thus, the language-based properties of each measure could not be examined here but should be assessed in subsequent studies.

In conclusion, this study evaluated the psychometric properties of two intimacy-related instruments, the MSQ and the RRFS, among persons with psychosis. Given that both measures were found to be valid and reliable when used with this population, researchers and clinicians may benefit from employing these tools to better understand the romantic and sexual functioning of individuals with a psychotic disorder. Such initiatives would allow for greater communication between service providers and consumers, ultimately enhancing service delivery. By taking interest in the intimacy and sexuality needs of this population beyond concerns with sexual dysfunction, we can move away from pathological models of mental illness toward recovery-oriented care, where interactions between people with psychosis, professionals, and stakeholders are less stigmatizing and more constructive (Andresen et al., 2011; Drake & Whitley, 2014).

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