Perceptions of risky sexual behaviour among individuals with severe mental illness in Uganda

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Abstract

Objectives

To understand the perceptions of Risky Sexual Behavior(RSB) among individuals with Severe Mental illness(SMI) in Uganda.

Hypothesis

Participants who perceive themselves as being at a high risk for RSB have a higher perception to RSB.

Research question

What is the perception of RSB among individuals with SMI?

Methods

This was a cross sectional study among patients with severe mental illness at a tertiary(Urban) and a secondary(Rural) hospitals. Consecutive patients were randomly included in the study and interviewed about their perceptions to RSB, socio-demographic, psychiatric illness, psychosocial environment on RSB. Individuals who were ill and unable to participate in the study. The outcome was perception to RSB. We used linear regression to ascertain the factors associated with RSB among people with SMI.The data was analyzed using STATA version 15.0 software and statistical significance was determined at a p-value <0.05

Results

We enrolled 480 into the study, females (n = 211, 53.4%) and unmarried (68.1%, n = 267). the median age was 36 years, majority were unemployed (46.9%), single (38.2%) with formal education (80. 4%). There was a high perception to RSB among the young, p = 0.003, (β=-0.12, 95% CI: -0.19; -0.04), those with mental health stigma p<0.001 (β = 0.30, 95% CI: 0.20–0.40), having past sexual abuse p = 0.016, (β= 2.26,95% CI: 0.42-4.10), a current and past depressive episode, p = 0.046, (β= 1.56,95% CI: 1.99-5.95, 0.03;3.09) and a past manic episode, p= 0.006, (β=2.28, = 95% CI:0.67-3.89).

Conclusions

Individuals with SMI in this mentally stable cohort had an increased perception to RSB. This may predispose them to RSB most especially being young, having a current, past depressive episode and a current manic episode. Health care providers should assess for RSB especially among patients with mood disorders.

Keywords: perception, risky sexual behavior, severe mental illness, adults, Uganda

Strengths and limitations

This study was conducted among stable individuals with severe mental illness at an Urban and a rural hospital. It is one of the first studies to study perceptions of risky sexual behavior among individuals with severe mental illness in Uganda. Because our analyses were cross-

sectional, we could not comment on the causal directions, but these will be addressed in future publications about the longitudinal component of the SMILE study.

Key messages

Individuals with Severe Mental Illness have been noted to underestimate their risk to RSB compared to the general population which puts them at an increased risk to RSB [1, 2].

There was scanty of local data to understand the perception of individuals with SMI on risky sexual behaviors.

The study found that individuals with Severe Mental Illness in this mentally stable cohort had an increased perception to Risky Sexual Behavior, being young, unmarried, having a mood disorder increased one's perception to RSB which is likely increase Risky Sexual Behavior.

The information obtained from this study would inform policy and promote effective interventions to reduce RSB among individuals with SMI.

Background

Beliefs about personal risk for risky sexual behavior are important to understanding what motivates people to engage in behaviors that reduce or increase their risk of HIV infection[3]. Risk perception has been theorized to be an important antecedent for adopting protective behavior[4]. Risk perception is an indicator of perceived susceptibility to infection, a measure of one's understanding of HIV transmission as well as willingness to consider behavioral changes. Perception of risk is considered to be the first stage towards behavioral change from risk-taking to safer behavior[5]. However, there remains much we do not know about what drives risk perception, especially among individuals with severe mental illness.

Risky sexual behavior was defined as: having unprotected sex (inconsistent use of condoms), contracting HIV/AIDS/STIs through unprotected sex, having multiple sexual partners, starting sex before age of 18 years and sex with commercial sex workers in the last 3 months is a phenomenon that mostly came into use with the advent of HIV. Unsafe sex such as having sex without or failure to use a condom is ranked second among the top ten risk factors to health in terms of the burden of disease [6].

Severe mental illness (SMI) was defined as having major depression, bipolar affective disorder or Schizophrenia[7]. Studies conducted in Africa have demonstrated that (34.8)% of patients with SMI engage in RSB, respectively[8].

SMI affects the individual's cognition, emotion, as well as behavior, and this makes individuals with SMI highly vulnerable to being involved in unsafe sex[9] and more likely to develop sexually transmitted diseases, including, but not limited to, HIV infection, Hepatitis B and C, Herpes, Syphilis, and Neisseria gonorrhea,[10]. Some of these infections are accompanied by neuropsychiatric manifestations which worsen one's judgement[9]. The low perception of RSB may also lead to family conflicts, breakdown of relationships, legal disputes, and financial problems [11].

In this study the hypothesis was that, patients who perceived themselves as being at a high risk for RSB had a higher perception to RSB than those with a lower risk perception.

Study objective: This study aimed to understand the perceptions of RSB among individuals with SMI who were attending two outpatient clinics in Uganda.

Conceptual frame work. Fig 1

Methods

Study design

A cross-sectional study was conducted at the outpatient departments of Butabika National referral and Masaka Regional referral hospital in Uganda.

Study population

All outpatients with severe mental illness who met the eligibility criteria were recruited into this study using simple random sampling. We enrolled patients who were 18 - 60 years, had been on treatment for at least six months and attending the outpatient departments.

Individuals who fulfilled MINI-7.0.2, criteria for another SUD, didn't understand any of the study languages (English or Luganda), having an illness that required urgent admission were excluded.

Study instruments and Data collection

Simple random sampling was used. Patients were assessed using a structured, standardized, locally translated psychosocial instruments. The tools were administered by the principal investigator (a psychiatrist) and trained psychiatric nurse / psychiatric clinical officer research assistants. Severe mental illness was confirmed using the MINI International

Neuropsychiatric Interview version 7.2[7] . Perception to RSB was determined by using a ten-item tool which uses the concept of self-efficacy for assessing sexual behavior first developed by Bandura. It was initially used to assess HIV perception in several studies, a participant identifies their own perception to RSB by choosing questions on a 1 to 5 Likert scale, where 1 was Extremely unlikely,2 was Very unlikely,3 was Somewhat likely,4 was Very likely and 5 was Extremely likely. The questions explore (1) If one is worried of contracting HIV and other Sexually transmitted infections, (2) knows the consequences of a sexually transmitted infection, and (3) if they think they can get sexually transmitted infections. If a participant reported on at least one question, he/she was noted as having low perception to RSB.

Other variables collected included: (I) socio-demographic factors (study site, gender, age category, religion, socio-economic status, and marital status), (ii) psychosocial factors (social support, mental health stigma, childhood physical abuse, childhood sexual abuse, physical abuse in adulthood and sexual abuse in adulthood), (iii) psychiatric illness factors. The tools used to assess these variables are described in below **Table 1**.

Table 1: Study instruments

	Instrument	Description	Questions (examples)	Remarks	Reference
Psychiatric illness and psychosocial factors associated with physical and sexual abuse					
Primary diagnosis	Review of patient clinical records by senior mental health worker	Review based on DSM-5 criteria	*Primary psychiatric diagnoses?*		[12]
Childhood trauma	Childhood Trauma Questionnaire-Short Form (CTQ-SF)	The Childhood Trauma Questionnaire-Short Form (CTQ-SF)	*Got hit so hard by someone in my family that I had to see a doctor*		[13, 14]
Social support	Multidimensional Scale of Perceived Social Support	12-item questionnaire on perceptions of support received.	*There is a special person who is around when I am in need.*	Previously employed by this study group.	[14, 15]

Dependent Variables					
Physical abuse	from the Uganda modified Life-events and histories module of the (EPSIS I)	(between age of 18 years to 12 months before the study); in the last 3 months before the interview)	*physically mistreated by those responsible for your upbringing?*	Previously adapted to the Ugandan socio-cultural context	[16, 17]
Sexual abuse	from the Uganda modified Life-events and	(between age of 18 years to 12 months before the study); and recent	*Did your father or mother ever force you to have*	Previously adapted to the Ugandan socio-cultural context	[16, 17]
Clinical and Behavioural Variables					
Mental health stigma	The Stigma Scale	16-items of the mental health stigma scale.		Cronbach Alpha of 0.71	[18]
Severity of depressive episode	Hamilton depression rating scale (HAM-D)	The HAM-D is designed to rate the severity of depression	Depressed mood (Gloomy attitude, pessimism)	Cronbach Alpha of 0.80	[19]
Severity of manic episode	Young Mania Rating Scale (YMRS)	The YMRS rates the severity of mania symptoms	Example of items; *Elevated mood*	Cronbach Alpha of 0.71	[20]
Severity of psychotic episode	Clinician-rated Dimensions of Psychosis Symptom Severity Scale	hallucinations, delusions, disorganized speech, abnormal behavior,	Example of items; *Hallucinations*	Had a Cronbach Alpha of 0.65	[21]
Perception to risky sexual	Assessed for high perception to risky	Perception to risky sexual behaviour that	Example of items: Currently; *What is*	Previously used in the	[22, 23]

| behaviour | sexual behaviour | have been associated with HIV transmission in the Ugandan socio-cultural context. | *your gut feeling about how likely you are to get infected with HIV?* | HIV situation of Uganda by this research group. | |

Outcome was perception to risky sexual behavior, Exposure was severe mental illness (Schizophrenia, Bipolar disorder and Depression), Predictors; effect of one's perception to risky sexual behavior, potential confounders; we controlled for age, gender, study site and marital status, effect modifiers; we did not do effect modification, it was not necessary, since we were not interested in the strengths stratum specific odds.

Data was collected using pre-tested questionnaires administered by principal investigator and the research assistants. Ethical clearance was obtained from the higher degree's research and ethics committee of Makerere University, College of health Sciences, school of medicine and the Uganda National council of science and technology. Informed written consent was obtained from the participants.

Data analysis

Baseline characteristics of the participants were summarized using frequencies and proportions for categorical variables whereas means and standard deviations were used to assess continuous variables that were normally distributed. Medians and interquartile ranges were used to summarize non-normally distributed variables.

A continuous outcome variable was generated as a summation of items in the **Perception About HIV Risk & Risky Sexual Behavior** tool [23]. Higher scores on the continuous scale indicated increased perceived personal risk for acquiring HIV infection, and hence their chances of engaging in RSB was high. The assumption of normality and homogeneity were assessed using Shapiro Wilk test and Levene's test respectively. Multiple linear regression models were fitted adjusting for age, gender, and marital status of the respondents. The dependent variables included psychosocial factors, psychiatric illness factors and maladaptive behavior. Data was analyzed using STATA version 15.0 software. The cutoff p-value for statistical significance was 0.05. case wise deletion was used to cater for missing data using the regression model.

Results

We consented 541 participants but 61 were excluded because they had other co-morbidities like substance use disorder or who could not follow through the interview. A total of 480 patients took part in the study. Half the study sample was from Butabika 58.1%) and 41.9% from Masaka regional referral hospital.

Being young and being unmarried increased one's perception to RSB and hence a likely increase in RSB (β =-0.12(-0.19; -0.04) and (β=-3.04 (-4.88; -1.2) respectively, however, being employed, socio economic status and having attended school did not affect one's perception to RSB (β=1.37 (-1.22;3.96), (β=-0.21(-063;0.21) and β =3.75 (0.62;8.11) respectively as shown in table 2.

Table 2: Socio – demographic characteristics associating with perception to RSB

Factor	level	β	95%CI	Pvalue
Site	Butabika(urban)	Ref		0.200
	Masaka(rural)	0.96	(-0.51 ; 2.42)	
Gender	Male	Ref		0.166
	Female	-1.04	(-2.25 ; 0.43)	
Age	Per unit increase	-0.12	(-0.19 ; -0.04)	0.003*
Socio-economic status	Per unit increase	-0.21	(-0.63 ; 0.21)	0.332
Marital status	Currently married	Ref		
	Widowed	-1.30	(-4.93; 2.33)	
	Separated/divorced	0.20	(-1.71; 2.12)	0.001*
	Single	-3.04	(-4.88 ; -1.2)	
Employment status	Farmer/fisherman	Ref		
	Professional	1.37	(-1.22; 3.96)	
	Informal employment	0.89	(-1.39; 3.18)	0.642
	Unemployed	-0.19	(-2.00 ; 1.62)	
Religion	Christian	Ref		
	Moslem	-1.56	(-3.40; 0.28)	0.090
	Others	-1.87	(-8.33 ; 4.58)	
Education level	No formal education	Ref		
	Primary	3.35	(-0.79; 7.51)	
	Secondary	3.08	(-1.10; 7.27)	0.398

	Tertiary	3.75	9-0.62 ; 8.11)	

Having mental health stigma currently ($\beta = 0.30$, 95% CI: 0.20–0.40), family member with mental illness ($\beta = 1.79$, 95% CI: 0.33–3.24), past sexual abuse (95% CI: 0.42-4.10) was associated with an increase in RSB as shown in table 3.

Table 3: Psychosocial factors associating with Perception to RSB

Factor	level	β	95%CI	Pvalue
Social support scale	Per unit increase	0.03	(-0.06 ; 0.12)	0.532
Mental health stigma scale	Per unit increase	0.30	(0.20 ; 0.40)	<0.001*
Childhood trauma questionnaire	Per unit increase	0.04	(-0.01 ; 0.08)	0.083
Past sexual abuse in adulthood	No Yes	Ref 2.26	(0.42 ; 4.10)	0.016*
Current sexual abuse in adulthood	No Yes	Ref 1.53	(-1.06 ; 4.12)	0.248
Past physical abuse in adulthood	No Yes	Ref 1.50	(-0.07 ; 3.07)	0.062
Current physical abuse in adulthood	No Yes	Ref 0.29	(-1.81 ; 2.38)	0.786
Family member ever had mental illness	No Yes	Ref 1.79	(0.33 ; 3.24)	0.016*

Having a current depressive episode (95% CI: 1.99-5.95) past depressive episode (0.03; 3.09), a past manic episode (95% CI:0.67-3.89), the severity of depressive symptoms (95% CI: 0.05-0.37) was associated with an increase in RSB as shown in table 4.

Table 4: Psychiatric illness factors associating with perception to RSB

Factor	level	β	95%CI	P value
Current episodes				
Current depressive episode	Yes	3.97	(1.99 ; 5.95)	<0.001*
Current manic episode	Yes	0.44	(-2.36 ; 3.23)	0.759
Current psychotic episode	Yes	0.88	(-0.81 ; 2.58)	0.307
Past episodes				
Past depressive episode	Yes	1.56	(0.03 ; 3.09)	0.046*
Past manic episode	Yes	2.28	(0.67 ; 3.89)	0.006*
Past psychotic episode	Yes	0.03	(-1.62 ; 1.68)	0.967
Severity of episodes				
Severity of depressive symptoms	Per unit increase	0.21	(0.05; 0.37)	0.009*
Severity of Manic episodes	Per unit increase	0.21	(-0.03; 0.44)	0.085
Severity of psychotic episodes	Per unit increase	-0.11	(-0.47; 0.24)	0.534

Discussion

This study explored perceptions to RSB and associated factors across a wide spectrum of socio-demographic and psychiatric disorders in Uganda. Our results indicate that the type of psychiatric disorder is important in understanding risk perception of RSB for example, having a depressive disorder or bipolar affective disorder was associated with an increase in RSB perception. Studies from sub-Saharan Africa have found a positive association between perceived risk[3]. Some researchers found a negative association between perceived risks of HIV with sexual behaviors[24].

Risk perception of RSB

The study showed that individuals who were young and unmarried underestimated their perception to RSB, due to insufficient knowledge of reproductive health, lack of access to use friendly sexual reproductive health services without being judged, perceived social gains like acceptance from peers, financial gains, lack of accountability this finding was similar to a study done in Kenya that found that being young and unmarried were more likely to be at an increased risk to RSB[3].

Predictors of low perception to RSB

This study found an association between past sexual abuse in adulthood, history of mental illness and perceived risks to RSB, these findings are similar to previous studies by[25]. The explanation could be that sexual abuse in adulthood affects one's self esteem practices, Miller [26, 27] proposed a conceptual model to explain the link between sexual abuse and later risky sex. Miller hypothesized that sexual abuse leads to sexual risk behaviors through four mechanisms: (a) using substances to cope with the abuse; (b) mental illness due to the abuse; (c) risky social networks; and (d) poorer sexual adjustment.

The association between perceiving oneself to be at high risk and having a past or current depressive episode or manic episode is plausible. Individuals usually experience impaired judgement and decision making, they have an increased libido and lose interest in life, previous studies also noted an association between depressive disorders and Bipolar affective disorders with increased risky sexual behavior perception[28-30].

Tailored accurate and adequate information regarding behavior change like condom use, abstinence, understanding the dangers of RSB, make a commitment to changing these behaviors and to seek for help when exposed to RSB.

Conclusions

Patients with severe mental illness, especially those with a mood disorder should be at the center of strategies to RSB (addressing inaccurate perception of risk may be key to improve safer sexual practices. The risk of RSB was higher for individuals with a current or past depressive episode and having a current manic episode. Tailored messages are therefore needed to address risk perceptions among individuals with severe mental illness related to risky sexual behavior. The findings highlight a need for programs that can create greater awareness of the risk to RSB among individuals with severe mental illness in Uganda.

Author Contributions

Caroline Birungi(BC) contributed to the planning, conception and design, conduction, reporting, acquisition, analysis and interpretation the data. Wilber Ssembajjwe(WS) contributed to reporting of the work and data analysis. Noah Kiwanuka(NK) contributed to the conception, reviewed design, analysis and interpretation of data. Eugene Kinyanda(EK) contributed to the planning, reviewed the study design, analysis and interpretation of the data. Noeline Nakasujja(NN) contributed to the conception, reviewed the literature, analysis and interpretation of data. All authors read and approved the final manuscript.

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Data sharing

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Ethics approval

Ethical approval was obtained from the Higher Degrees Research Ethics Committee (HDREC), the Uganda National Council of Science and Technology (HS 2337) and the Uganda Virus Research Institute's Research and Ethics Committee (GC/127/19/10/612).

Written informed consent was obtained from all participants. I confirm that all methods were carried out in accordance with relevant guidelines and regulations (HDREC, UVRI and UNCST). Confidentiality was ensured by using de- identified codes.

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