



The impact of childhood sexual trauma on intimacy and sexuality needs among people with non-affective psychosis

Jose de Jager^{a,b,*}, Maurice Topper^a, Annet Nugter^a, Jim van Os^{b,c}, GROUP Investigators

^a Mental health care institution GGZ Noord-Holland Noord, Postbus 18, 1850 BA Heiloo, the Netherlands

^b Brain Centre Rudolf Magnus University Medical Centre, Utrecht, the Netherlands

^c King's College, Institute of Psychiatry, London, UK

ARTICLE INFO

Keywords:

Sexuality
Intimacy
Recovery
Trauma
Childhood sexual abuse
Needs

ABSTRACT

Background: Childhood trauma, in particular childhood sexual abuse (CSA), and unmet sexuality and intimacy needs are prevalent among people with psychosis spectrum disorders. The association between CSA and sexuality and intimacy needs over time in adults with psychosis spectrum disorders were examined.

Method: Patients ($n = 1119$) were recruited as part of the Genetic Risk and Outcome of Psychosis (GROUP) study, a representative cohort of patients with non-affective psychotic disorder. At baseline, three-year and six-year follow-up, sexuality and intimacy needs were assessed with the Camberwell Assessment of Needs. CSA was assessed with the Childhood Trauma Questionnaire.

Results: At baseline, sexuality (26%) and intimacy (40%) needs were prevalent; 90% of these needs remained unmet. Cross-sectionally, CSA was associated with sexuality needs (OR = 1.68, 95% CI: 1.13-2.04) and intimacy needs (OR = 1.75, 95% CI: 1.04-1.77). Childhood emotional abuse (CEA) was also cross-sectionally associated with sexuality and intimacy needs. Others forms of trauma were not. Prospectively, CSA predicted incidence of a sexuality need (HR = 2.1, 95% CI: 1.23-3.74) as well as an intimacy need (HR = 1.7, 95% CI: 1.11-2.66), as did CEA (sexuality: HR = 1.8, 95% CI: 1.11-2.89; intimacy: HR = 1.4, 95% CI: 1.03-1.96). CSA and CEA were not associated with persistence of sexuality or intimacy.

Conclusion: CSA and CEA are associated with a higher prevalence and incidence of sexuality and intimacy needs in patients with psychotic disorders. High rates of unmet sexuality and intimacy needs may indicate an underlying need for trauma-related treatment as well as a need for novel interventions targeting these needs.

1. Introduction

The assessment of needs for care is a key component in mental health care (Slade et al., 2005). For mental health professionals, need assessment is helpful in clinical decision making and developing adequate treatment plans. For patients, an accurate need assessment can facilitate recovery, provide a sense of direction, support social rehabilitation and improve quality of life (Fleury et al., 2013). For the dyadic relationship between client and caregiver, need assessment may be helpful to provide common ground for communication, collaboration, as well as other non-specific treatment factors such as warmth, respect and understanding (Lambert and Cattani, 2012).

In patients diagnosed with psychosis spectrum disorder, a need for care frequently occurs in the domains of intimate relationships and sexual expression (Drukker et al., 2008; Fleury et al., 2013). In a Swedish

sample of 120 people with schizophrenia, 40% had an intimacy need and 33% a sexuality need (Bengtsson-Tops and Hansson (1999)). The highest prevalence of unmet needs in a study by Wiersma et al. (2009) was also found in the domain of intimate relationships along with company, psychological distress, daytime activities, and physical health (15–28%). Given these findings, it has been argued that mental health care is insufficiently focused on the expression of sexuality and intimacy and related needs (McCann et al., 2019).

Understanding sexuality and intimacy needs, and the factors that impact these needs among people with psychosis spectrum disorder may stimulate the development of interventions that help fulfill these needs. Qualitative studies have highlighted and explored the often unmet needs in intimate and sexual relationships among people diagnosed with psychosis spectrum disorder (de Jager et al., 2017; de Jager et al., 2018). A qualitative systematic review including 21 studies addressing the

* Corresponding author.

E-mail addresses: j.dejager@ggz-nhn.nl (J. de Jager), m.topper@ggz-nhn.nl (M. Topper), a.nugter@ggz-nhn.nl (A. Nugter), j.j.vanos-2@umcutrecht.nl (J. van Os).

<https://doi.org/10.1016/j.schres.2021.08.003>

Received 1 February 2021; Received in revised form 2 August 2021; Accepted 3 August 2021

Available online 26 August 2021

0920-9964/© 2021 Published by Elsevier B.V.

views and experiences of people with severe mental illness (Ehrhardt et al., 2002) regarding intimacy and sexual expression identified several factors that contribute to these unmet needs (McCann et al., 2019). These include use of antipsychotics (de Boer et al., 2015), self-stigma, difficulties in social cognition, social isolation and loneliness and sexual trauma (McCann et al., 2019). Findings of a recent systematic review of 43 quantitative studies are largely in line with those reported by McCann and colleagues (Cloutier et al., 2020).

In the general population, experiencing sexual abuse in childhood is one of the most important risk factors for the development of sexual dysfunction in adulthood (Pulverman et al., 2018), and also linked to intimacy problems in adulthood (Roberts et al., 2004). Models that attempt to explain these links have focused on underlying mechanisms such as traumatic sexualization, self-destructive or avoiding coping strategies and physical, affective and cognitive difficulties (Zwickl and Merriman, 2011). There is no reason to assume that these mechanisms would be different in people with SMI.

As systematic reviews indicate high rates of trauma in patients with SMI, including sexual trauma, this is likely even more pertinent to patients with psychosis (Varese et al., 2012). Thus, several studies have suggested that impaired sexual functioning in people with psychosis may be associated with exposure to sexual abuse.

In sum, research indicates that the rates of both sexual trauma and sexuality and intimacy needs are high in patients with psychosis spectrum disorder. It remains largely unclear, however, if and how childhood sexual trauma impacts the sexuality and intimacy needs of adults living with psychosis.

To the best of our knowledge, only one quantitative, cross-sectional study examined the impact of sexual trauma at the level of needs in people with psychosis (Comacchio et al., 2019). The authors found that a history of sexual trauma in both men and women was associated with higher levels of need for care. However, they combined different types of trauma and different types of needs into larger categories, so that specific associations between sexual trauma and sexuality and intimacy needs could not be examined. The current study focusses on the question if and how childhood sexual trauma is associated with sexuality and intimacy needs in adulthood, in both a cross-sectional as well as a prospective framework.

To this end, we examined the cross-sectional and longitudinal association between childhood sexual abuse (CSA) and sexuality and intimacy needs in a large representative sample of patients with non-affective psychotic disorders. More specifically, we assessed the extent to which sexual abuse and sexuality and intimacy needs occur, as well as the percentage of these needs that remained unmet, both absolute and relative to other needs, in order to obtain a reference. To validate the focus on the specific impact of CSA, we hypothesized that CSA would be more strongly associated with sexuality and intimacy needs in comparison with other kinds of childhood adversity, as reported earlier by others (Agaçhanli et al., 2018). Finally, we assessed the extent to which CSA predicted the incidence and persistence of sexuality and intimacy needs.

2. Methods

2.1. Design

The patients in this study were recruited as part of the Genetic Risk and Outcome in Psychosis (GROUP) study, a multi-site longitudinal cohort study focused on gene–environment interactions. In this naturalistic follow-up study, 1119 patients with a psychotic disorder, 1057 siblings, 919 parents, and 590 unrelated control subjects were included and examined. In- and exclusion criteria, details on the procedure of recruitment and population characteristics of the GROUP study have been described elsewhere (Korver et al., 2012). Baseline assessment (T0) was followed by a 3-year first follow-up (T1) and again 3 years later by a second follow-up (T2).

2.2. Participants

In this analysis, only the patient sample was included. At T1, 811 patients participated, and 662 at T2. Patients who participated had a diagnosis of non-affective psychotic disorder according to the DSM-IV (Alameda et al., 2015), and their age ranged from 16 to 50 years at baseline. They were selected from representative geographical areas in The Netherlands and Belgium, and identified by representative clinicians whose caseloads were screened for inclusion criteria. Subsequently, a group of patients presenting consecutively at these services either as outpatients or inpatients were recruited for the study.

2.3. Measures

2.3.1. Needs

The Camberwell Assessment scale of Need Short Appraisal Schedule (Slade et al., 2005) was used to assess need for care. The CANSAS assesses health and social needs across the following domains: accommodation, food, looking after the home, self-care, daytime activities, physical health, psychotic symptoms, information, psychological distress, safety to self, safety to others, alcohol, drugs, company, intimate relationships, sexual expression, child-care, basic education, telephone, transport, money, and benefits. Each item was clinician-rated and scored 0 (no problem), 1 (there is a problem/need, that is met given an ongoing intervention) or 2 (unmet need). Questions used to assess intimacy needs were; “Do you have a romantic partner?” “Are there problems within this relationship?”. Questions used to assess sexuality needs were; “How is your sexuality?” “Are there any problems concerning your sexuality?”. If needed, follow-up questions were formulated by the interviewer to clarify. An important principle using the CANSAS is client perspective. If not having a partner is not perceived as a problem or unmet need, it is not scored as such. The CANSAS was administered at T0, T1 and T2. Interrater reliability was examined by Andresen and colleagues under routine conditions; overall agreement on areas of need was moderate to very high (Andresen, 2000).

2.3.2. Childhood (sexual) trauma

Childhood trauma was assessed with the Dutch version of the Childhood Trauma Questionnaire Short Form (CTQ) (Thombs et al., 2009), a 25-item self-report questionnaire rated on a five-point Likert scale with good internal consistency, reliability and validity (Thombs et al., 2009). The CTQ assesses: physical abuse (bodily assaults on a child by an adult or older person that posed a risk of or resulted in injury); physical neglect (the failure of caretakers to provide for a child's basic physical needs, including food, shelter, clothing, safety and health care); sexual abuse (unwanted sexual contact or conduct between a child younger than 16 years of age and an adult or older person); emotional abuse (verbal assaults on a child's sense of worth or well-being or any humiliating or demeaning behavior directed towards a child by an adult or older person); and emotional neglect (the failure of caretakers to meet children's basic emotional and psychological needs, including love, belonging, nurturance and support), all occurring before the age of 17. The CTQ was administered once, either at T0 or T1, depending on the research site.

2.4. Procedure

The ethical review board of the Utrecht University Medical Center provided approval of the study protocol, as did a local review board of all participating institutes. Written informed consent was given by all participants in accordance with the committee's guidelines. Participants were seen for assessments at their own participating regional psychosis department, at a participant's home or at the academic centers. Interviewers were research assistants, psychologists, psychiatrists, nurses and PhD students with a background in psychology or medicine. Before the start of the study, all interviewers met for three days of training

workshops at one site (Utrecht), to practice the assessments of all measures used in the GROUP project. Over the course of the project, researchers reconvened at 2-month intervals for further training and recalibration to prevent interviewer ‘drift’.

2.5. Statistical analysis

We used descriptive statistics to calculate the prevalence of childhood sexual abuse and sexuality and intimacy needs. To obtain a reference, the number of met and unmet needs in other domains were also reported.

For all other analyses, ‘needs’ were expressed as a dichotomized measure of ‘no needs’ versus a joint category of ‘met needs’ and ‘unmet needs’. In the CANSAS, a met need stands for no/moderate problem because of continuing intervention, thus indicating that a need for care is present although its impact is mitigated.

Multi cross-sectional analysis in which associations between childhood trauma and data on sexuality and intimacy pertaining to all 3 timepoints were included and tested in a single analysis, accounting for intracluster correlations, with the data in the ‘long format’, i.e. with each person contributing three observations (T0, T1 and T2).

In the analyses, responses to the CTQ were dichotomized: items with a score of 0 were scored as absent and items with a score of 1, 2, 3 and 4 were scored as present. Associations were expressed as relative risk ratios with corresponding 95% confidence intervals. A priori confounders added to all analyses were gender, age and whether or not the person was using antipsychotics (de Boer et al., 2015; Pulverman et al., 2018; DeLamater and Karraker, 2009)

Cox proportional hazard models, including hazard ratios (HR) and associated confidence intervals (CI), were performed to investigate the risk of developing a sexuality or intimacy need in people with and without a history of childhood trauma. Cox proportional hazard models were calculated for all types of childhood trauma that appeared related to sexuality and intimacy needs in the previous cross-sectional analyses. In these analyses, only participants with no sexuality or intimacy need at T0 were included in order to calculate the incidence of new needs.

Needs persistence was defined as a continuation of the rating of the need at the next assessment (i.e. from T0 to T1 or T1 to T2). In order to investigate whether a sexuality or intimacy need was more persistent in people with or without a history of childhood trauma, Poisson regression analyses yielding relative risks (RR) and 95% confidence intervals were run. In this regression model, the number of changes (from a need to no need in sexuality and intimacy) was calculated to test if sexuality and intimacy needs differ in their persistence over time in people with and without a history of childhood trauma.

3. Results

3.1. Participants

Tables 1a and 1b show the socio-demographic characteristics of the sample. At T2, 811 patients participated, at T3 follow-up 662 patients. Given missing data, a Little MCAR test was performed (Little, 1988) which indicated that data were missing completely at random ($\chi^2 = 0.11, p = .74$).

3.2. Prevalence of childhood sexual abuse

Sexual abuse was reported by 25% of the sample. Women were more likely to report sexual abuse (35%) compared to men (21%).

3.2.1. Prevalence of needs

At T0, 26% of the participants reported a sexual need. Intimacy needs were present in 40% of the participants. At T1, the prevalence of sexuality needs was 16% and 35% for intimacy needs. At T2, 15% reported a sexuality need and 33% an intimacy need. Table 2 shows the

Table 1a

Socio-demographic characteristics of the participants at baseline, t1 and t2.

		T0		T1		T2	
N		1119		811		662	
Demographics		Count	%	Count	%	Count	%
Gender	Male	852	76.1	623	76.8	504	76.1
	Female	267	23.9	188	23.2	158	23.9
Age	Highest	50		1948		1948	
	Lowest	16		1991		1991	
	Mean	27.6		30.6		33.6	
Ethnic minority status	Minority	215	19.2	130	16	99	15
	White	830	74.3	649	80	540	81.6
	Missing	74	6.4	32	3.9	23	3.5
Marital status	Not married	950	85	681	84	516	77.9
	Married/living together	98	8.8	109	13.4	125	18.9
	Divorced	30	2.7	20	2.5	21	3.2
	Missing	39	3.5	1	0.1	.	.
Education	No education	7	0.6	1	0.1	1	0.2
	Primary school	144	12.9	58	7.2	31	4.7
	Secondary school	341	30.6	225	27.7	150	22.7
	Highschool	270	24.2	196	24.2	148	22.4
	Vocational education	281	25.2	276	34.1	273	41.2
	University	43	3.8	54	6.70	58	8.80
	Missing	31	2.8	1	.1	1	.2
Other relevant variables							
IQ		96.1		99.2		101.7	
Duration of illness (years)		5		8.1		11.6	
Medication	Currently using	1	0.1	571	70.4	466	70.4
	Not using	.	.	37	4.6	11	1.7
	Unknown/missing	1116	99.9	203	25	185	28
Childhood sexual abuse	Yes	185	16.6	176	20.6	125	18.9
	No	565	50.5	509	62.8	419	63.3
	Missing	367	32.9	135	16.6	118	17.8

numbers and percentages of all needs, met and unmet, at baseline. The most noteworthy is the ratio between the met and unmet needs in the field of sexuality and intimacy. Compared to the other categories, these needs had the highest proportion of unmet needs. The percentage of needs that was unmet was 90% for sexuality needs and 90% for intimacy needs. The percentage of needs that was unmet for the other categories ranged between 2% (food) and 63% (company) with an average of 43%.

3.3. Cross-sectional relationships

A logistic regression showed that CSA was associated with sexuality needs (OR = 1.68, 95% CI: 1.13-2.04) and intimacy needs (OR = 1.75, 95% CI: 1.04-1.77). Childhood emotional abuse (CEA) was also associated with sexuality (OR = 1.68, 95% CI: 1.16-1.98) and intimacy needs (OR = 1.75, 95% CI: 1.08-1.72). Physical abuse, physical neglect and emotional neglect were not associated with either sexuality or intimacy needs.

3.4. Incidence

Cox regression showed that exposure to childhood sexual abuse increased the risk of sexuality needs (HR = 2.1, 95% CI: 1.23–3.74) and intimacy needs (HR = 1.7, 95% CI: 1.11–2.66). This means that participants with childhood sexual abuse were 2 times more likely to develop a sexuality need compared to participants who did not experience childhood sexual abuse. Those with childhood sexual abuse were

Table 1b
Socio-demographic characteristics at T0 of the participants with and without childhood sexual abuse.

		Sexual abuse		No sexual abuse	
		Count	%	Count	%
Demographics					
Gender	Female	66	35	122	65
	Male	119	21	443	79
Year of birth	mean	1978		1978	
Ethnic minority status	Minority	41	23	73	13
	White	136	77	477	87
Current marital status	Married/living together	1	1	0	0
	Not married	121	99	404	100
Education	No education	2	1	4	1
	Primary school	21	11	59	11
	Secondary school	56	30	173	31
	Highschool	54	29	137	25
	Vocational education	42	23	162	29
	University	9	5	25	5
Other relevant variables					
Cannabis use	No	92	50	345	62
	Yes	93	50	216	38
Mean IQ		96		98	
Mean duration of illness (years)		6.3		5.2	
Medication ^a	Currently using	122	95	361	95
	Not using	7	5	19	5

^a Based on T2.

1.7 times more likely to develop an intimacy need. Childhood emotional abuse also increased the risk of developing sexuality needs (HR = 1.8, 95% CI: 1.11–2.89) and intimacy needs (HR = 1.4, 95% CI: 1.03–1.96).

3.5. Persistence

Results from the Poisson regression indicated no associations between childhood sexual abuse and the persistence of either sexuality needs (IRR = 0.91, 95% CI, 0.50–1.69), or intimacy needs (IRR = 1.05, 95% CI, 0.74–1.48). Similarly, there was no association between childhood emotional abuse and the persistence of either sexuality (IRR = 1.12, 95% CI, 0.64–1.93) or intimacy needs (IRR = 0.88, 95% CI, 0.65–1.19).

4. Discussion

The current study is one of the first exploring the impact of childhood trauma, and more specifically childhood sexual abuse, on sexuality and intimacy needs in adulthood among people with psychotic disorder over time. Childhood sexual abuse was experienced by 25% of the participants. This number is largely in line with earlier findings (Turner et al. 2019). The prevalence of sexuality and intimacy needs at baseline was 26%, and 40%, respectively. In line with current findings, Bengtsson-Tops and Hansson (1999) found among 120 people with a diagnosis of schizophrenia in Sweden that, using the CAN, 33% had a sexuality need and 40% an intimacy need.

Emotional and sexual abuse were cross-sectionally associated with sexuality and intimacy needs during the 6-year time frame of this study whereas physical abuse and forms of neglect did not appear to be associated with sexuality and intimacy needs. Further analysis showed that the risk of developing a sexuality or intimacy need was higher when patients had been exposed to childhood sexual abuse. Emotional abuse also increased this risk.

Of all the sexuality and intimacy needs that were present, only 10% were met. None of the other needs remained unmet to this degree. The numbers were even higher than those reported by Wiersma and van Busschbach (2001). Among their sample of people with severe mental

Table 2
Percentages of no needs, met needs and unmet needs at T1, per need category.

Category of needs	No need (%)	Met need (%)	Unmet need (%)	Missing	% of needs that was unmet
Food	706 (72.6)	211 (21.7)	55 (5.7)	147	2.3
Housing	697 (70.8)	209 (21.2)	78 (7.9)	135	3.2
Household	589 (64.4)	263 (28.8)	62 (6.8)	205	18.5
Safety to others	862 (87.2)	98 (9.9)	29 (2.9)	130	22.8
Safety to self	844 (84.9)	115 (11.6)	35 (3.5)	125	23.3
Information on condition and treatment	561 (57.4)	310 (31.7)	107 (10.9)	141	25.7
Child care	814 (96.9)	19 (2.3)	7 (0.8)	279	26.9
Social life	691 (72.5)	180 (18.9)	82 (8.6)	166	31.2
Money	638 (66.1)	224 (23.2)	103 (10.7)	154	31.5
Transport	914 (92.9)	44 (4.5)	26 (2.6)	135	37.1
Psychological distress	343 (34.9)	385 (39.2)	254 (25.9)	137	39.7
Psychotic symptoms	125 (12.7)	504 (51.2)	355 (36.1)	135	41.3
Alcohol	838 (85.3)	84 (8.6)	60 (6.1)	137	41.7
Physical health	787 (70.3)	107 (10.9)	86 (8.8)	139	44.6
Hygiene	856 (86.5)	91 (9.2)	43 (4.3)	129	47
Education	890 (91.1)	42 (4.3)	45 (4.6)	142	51.7
Payed work	434 (45.8)	243 (25.6)	271 (28.6)	171	52.7
Telephone	971 (98.7)	6 (0.6)	7 (0.7)	135	53.8
Activities	418 (42.5)	261 (26.6)	304 (30.9)	136	53.8
Drugs	715 (72.6)	122 (12.4)	148 (15)	134	54.8
Side effects of medication	519 (53.7)	199 (20.6)	248 (25.7)	153	55.5
Company	514 (53)	169 (17.4)	287 (29.6)	149	62.9
Sexual expression	642 (74.3)	23 (2.7)	199 (23)	255	89.6
Intimate relationships	561 (60.1)	37 (4)	335 (35.9)	186	90.1

illness, 73% of the sexuality needs and 50% of the intimacy needs were unmet.

The results suggest that a large proportion of people with psychosis have unmet needs in the areas of sexuality and intimacy. Clinicians may be insufficiently aware and responsive to these needs. This might be the result of the taboo still surrounding sexuality and intimacy in most societies. (Voermans et al., 2012) handed out 176 questionnaires among mental health professionals about talking to patients about sexuality. It appeared that mental health professionals felt shame when initiating a conversation on sexuality and felt incompetent to do so. These findings are in line with the results of a similar study of similar size conducted in the USA (Magnan Morris, 2005). Research also shows that mental health professionals often assume that a discussion about sex is irrelevant because they think that people with a severe mental illness are unlikely to form a relationship (Ford Elizabeth, 2003). As a consequence, mental health professionals are likely to wait for the patient to initiate the topic, while patients often report being too shy to bring up the topic themselves (Katz, 2009). Another issue that might play a role in the large number of unmet needs, is the fact that there is a scarcity of specific

interventions available.

The experience of childhood sexual abuse increases the risk of developing sexuality and intimacy needs. Even though there are no conclusive studies yet, researchers have proposed potential pathways that may account for the difference between those with and without childhood sexual abuse. Some of these suggested pathways are sympathetic nervous system (SNS) activation, negative cognitive associations with sexuality, negative sexual self-schema's and emotions of shame and guilt (Meston and Lorenz, 2013; Pulverman et al., 2017). The relationship between childhood emotional abuse and sexuality and intimacy needs has, until so far, not received much attention. It is likely that both sexuality and intimacy require a degree of emotional closeness, which may be more difficult to either create and/or endure when having the experience of emotional abuse at a sensitive developmental stage. This relationship deserves more attention and may be a topic of future research. Qualitative research can help develop a more substantiated insight into this relationship.

Inquiring about and being alert on adverse childhood experiences should be part of routine mental health care. Even though the incidence of sexuality and intimacy needs is higher among people who suffered from childhood sexual abuse, the persistence of needs did not differ between people with and without these adverse experiences. This may be due to the fact that sexuality and intimacy do not receive sufficient attention in ongoing treatment, regardless of a history of childhood trauma. Future research may examine this issue further.

There are several limitations of the current study that require consideration. First, this study consisted of three assessment points over a period of six years. This makes it impossible to draw conclusions on the relationship between sexual needs and variables that are time-variant such as antipsychotic medication. More frequent measurement moments would have allowed to more effectively isolate variable associations. Secondly, to assess incidence, only those without a sexuality or intimacy need at T0 were included. Those who already developed a sexuality or intimacy need at T0 were excluded from this particular analysis. It could be argued that this selection would have resulted in a 'healthier' subsample for incidence analysis, which may have led to an underestimation of the impact of childhood sexual trauma of sexuality and intimacy needs. Future studies should use a longitudinal design starting from the incidence of childhood trauma to avoid this issue. Third, it is important to note that the data used for this study was gathered between 2005 and 2013. The last decade however, the recovery framework, which put a strong emphasis on the client as a whole, has received more attention. With the advent of this framework, more attention towards quality of life in all aspects may have ensued, including sexuality and intimacy. In other words, replication in the current era of psychiatry is required. Nevertheless, other studies using more recent data have reached similar conclusions regarding the position of sexuality and intimacy in mental health care (Cloutier et al., 2020; McCann et al., 2019). Lastly, sexuality and intimacy needs were analyzed quantitatively, but not explored qualitatively. It therefore remains unclear what these needs really represent in the lives of patients. Other studies have explored the content of sexuality and intimacy needs of people with psychosis more extensively. Some examples of these needs are: the desire to find a partner and develop the skills required to do so, and to be sexually active and overcome the consequences of self-stigma and traumatic sexual events (de Jager et al., 2017; de Jager et al., 2018).

This study showed an association between childhood sexual abuse and emotional abuse on one hand and sexuality and intimacy needs on the other. How sexual and emotional abuse may lead to these needs remains unclear. It is known that sexual problems often occur after sexual trauma (Bicanic et al., 2014). These problems may be induced by the abuse itself but could also be caused or worsened by the onset of post-traumatic stress disorder (PTSD). It would be useful, in future research, to find out how the relationship between (sexual) trauma and sexuality and intimacy needs arises and what the role of PTSD may be. A

more concrete suggestion would be to incorporate sexual needs or functioning as an outcome measure in studies focusing on the treatment of PTSD in people with severe mental illness. Since PTSD may play a role in the onset of sexual problems (and needs), it may be hypothesized that sexual functioning will concurrently improve as an outcome of successful PTSD treatment (Schnurr et al., 2009).

Future research should also focus on other factors that might affect sexuality and intimacy needs in people with severe mental illness so that the research community may gain more knowledge on which underlying concepts play a part. For example, even though there is no evidence suggesting that sexuality and intimacy needs differ between in- and outpatient, it could be argued that barriers towards sexuality and intimacy may be higher among inpatients. This difference should be incorporated in future studies. With this, the development and testing of interventions that address sexuality and intimacy issues in clinical practice may come closer. A recent development in this field is a CBT-based module focusing on socio-romantic skills for men with psychosis (Hache-Labelle et al., 2020). Including the concept of needs in intervention studies may represent a valuable avenue. Peer support groups as well as skills training trauma focused treatment or stigma interventions may prove effective in reducing the high rate of unmet needs.

Twitter

Needs for care concerning sexuality and intimacy are prevalent in people with psychosis. 90% of these needs remains unmet. Childhood sexual and emotional abuse increase the incidence of these sexuality and intimacy needs in patients with psychosis.

Funding

The infrastructure for the GROUP study is funded through the Geestkracht programme of the Dutch Health Research Council (Zon-Mw, grant number 10-000-1001), and matching funds from participating pharmaceutical companies (Lundbeck, AstraZeneca, Eli Lilly, Janssen Cilag) and universities and mental health care organizations (Amsterdam: Academic Psychiatric Centre of the Academic Medical Center and the mental health institutions: GGZ Ingeest, Arkin, Dijk en Duin, GGZ Rivierduinen, Erasmus Medical Centre, GGZ Noord Holland Noord. Groningen: University Medical Center Groningen and the mental health institutions: Lentis, GGZ Friesland, GGZ Drenthe, Dimence, Mediant, GGNet Warnsveld, Yulius Dordrecht and Parnassia psycho-medical center The Hague. Maastricht: Maastricht University Medical Centre and the mental health institutions: GGZe, GGZ Breburg, GGZ Oost-Brabant, Vincent van Gogh voor Geestelijke Gezondheid, Mondriaan, Virenze riagg, Zuyderland GGZ, MET ggz, Universitair Centrum Sint-Jozef Kortenberg, CAPRI University of Antwerp, PC Ziekeren Sint-Truiden, PZ Sancta Maria Sint-Truiden, GGZ Overpelt, OPZ Rekem. Utrecht: University Medical Center Utrecht and the mental health institutions Altrecht, GGZ Centraal and Delta).

Declaration of competing interest

All authors declare that there is no financial or personal relationships with other people or organizations that could inappropriately influence (bias) the work.

Acknowledgements

All contributors meet the criteria for authorship. We are grateful for the generosity of time and effort by the patients, their families and healthy subjects. Furthermore, we would like to thank all research personnel involved in the GROUP project, in particular: Joyce van Baaren, Erwin Veermans, Ger Driessen, Truda Driessen, Erna van't Hag.

References

- Agaçanlı, R., Aliak, I., Evren, C., 2018. Sexual dysfunctions are predicted by childhood sexual abuse in women with opioid use disorder. *Subst. Use Misuse* 53 (13), 2184–2189. <https://doi.org/10.1080/10826084.2018.1461228>.
- Alameda, L., Ferrari, C., Baumann, P.S., Gholam-Rezaee, M., Do, K.Q., Conus, P., 2015. Childhood sexual and physical abuse: age at exposure modulates impact on functional outcome in early psychosis patients. *Psychol. Med.* 45 (13), 2727–2736. <https://doi.org/10.1017/S0033291715000690>.
- Andresen, R.R., 2000. Interrater reliability of the camberwell assessment of need short appraisal schedule. *Aust. N. Z. J. Psychiatry* 34 (5), 856–861.
- Bengtsson-Tops, A., Hansson, L., 1999. Clinical and social needs of schizophrenic outpatients living in the community: the relationship between needs and subjective quality of life. *Soc. Psychiatry Psychiatr. Epidemiol.* 34 (10), 513–518. <https://doi.org/10.1007/s001270050169>.
- Bicanic, I., Engelhard, I., Sijbrandij, M., 2014. Posttraumatische stresstoornis en seksuele problemen na seksueel geweld; preventie en behandeling. *Gedragstherapie* 47, 256–274.
- Cloutier, B., Francoeur, A., Samson, C., Ghostine, A., Lecomte, T., 2020. Romantic relationships, sexuality, and psychotic disorders: a systematic review of recent findings. *Psychiatr. Rehabil. J.* <https://doi.org/10.1037/prj0000409>.
- Comacchio, C., Howard, L.M., Bonetto, C., Lo Parrino, R., Furlato, K., Semrov, E., Ruggeri, M., 2019. The impact of gender and childhood abuse on age of psychosis onset, psychopathology and needs for care in psychosis patients. *Schizophr. Res.* 210, 164–171. <https://doi.org/10.1016/j.schres.2018.12.046>.
- de Boer, M.K., Castelein, S., Wiersma, D., Schoevers, R.A., Knegtering, H., 2015. The facts about sexual (Dys)function in schizophrenia: an overview of clinically relevant findings. *Schizophr. Bull.* 41 (3), 674–686. <https://doi.org/10.1093/schbul/sbv001>.
- de Jager, J., Cirakoglu, B., Nugter, A., van Os, J., 2017. Intimacy and its barriers: a qualitative exploration of intimacy and related struggles among people diagnosed with psychosis. *Psychosis* 9 (4), 301–309. <https://doi.org/10.1080/17522439.2017.1330895>.
- de Jager, J., van Greevenbroek, R., Nugter, A., van Os, J., 2018. Sexual expression and its determinants, in people diagnosed with psychotic disorders. *Community Ment. Health J.* 54 (7), 1082–1088. <https://doi.org/10.1007/s10597-018-0285-1>.
- DeLamater, J., Karraker, A., 2009. Sexual functioning in older adults. *Curr. Psychiatry Rep.* 11 (1), 6–11. <https://doi.org/10.1007/s11920-009-0002-4>.
- Drukker, M., van Dillen, K., Bak, M., Mengelers, R., van Os, J., Delespaul, P., 2008. The use of the camberwell assessment of need in treatment: what unmet needs can be met? *Soc. Psychiatry Psychiatr. Epidemiol.* 43 (5), 410–417. <https://doi.org/10.1007/s00127-007-0301-1>.
- Ehrhardt, A., Exner, T., Hoffman, S., Silberman, I., Yingling, S., Adams-Skinner, J., Smart-Smith, L., 2002. HIV/STD risk and sexual strategies among women family planning clients in New York: project FIO. *AIDS Behav.* 6, 1–13. <https://doi.org/10.1023/A:1014534110868>.
- Fleury, M.-J., Grenier, G., Bamvita, J.-M., Tremblay, J., 2013. Factors associated with needs of users with severe mental disorders. *Psychiatry Q.* 84 (3), 363–379. <https://doi.org/10.1007/s11126-012-9252-0>.
- Ford Elizabeth, E., 2003. Managing sexual behavior on adult acute care inpatient psychiatric units. *Psychiatr. Serv.* 54 (3), 346–350.
- Hache-Labelle, C., Abdel-Baki, A., Lepage, M., Laurin, A.S., Guillou, A., Francoeur, A., Lecomte, T., 2020. Romantic relationship group intervention for men with early psychosis: a feasibility, acceptability and potential impact pilot study. *Early Interv. Psychiatry.* <https://doi.org/10.1111/eip.13012>.
- Katz, A., 2009. *Sex When You're Sick: Reclaiming Sexual Health After Illness or Injury*. Praeger Publishers/Greenwood Publishing Group, Westport, CT.
- Korver, N., Quee, P., Boos, H., Simons, C., de Haan, L., Beveren, N., 2012. Genetic risk and outcome of psychosis (GROUP), a multi site longitudinal cohort study focused on gene-environment interaction: objectives, sample characteristics, recruitment and assessment methods. *Int. J. Methods Psychiatr. Res.* 21, 205–221. <https://doi.org/10.1002/mp.1352>.
- Lambert, M.J., Cattani, K., 2012. Practice-friendly research review: collaboration in routine care. *J. Clin. Psychol.* 68 (2), 209–220. <https://doi.org/10.1002/jclp.21835>.
- Little, R.J.A., 1988. A test of missing completely at random for multivariate data with missing values. *J. Am. Stat. Assoc.* 83 (404), 1198–1202. <https://doi.org/10.1080/01621459.1988.10478722>.
- Magnan Morris, A.M., 2005. Barriers to addressing patient sexuality in nursing practice. *Medsurg Nurs.* 14 (5), 282–289.
- McCann, E., Donohue, G., de Jager, J., Nugter, A., Stewart, J., Eustace-Cook, J., 2019. Sexuality and intimacy among people with serious mental illness: a qualitative systematic review. *JBIS Database System Rev. Implement. Rep.* 17 (1), 74–125. <https://doi.org/10.11124/jbisir-2017-003824>.
- Meston, C.M., Lorenz, T.A., 2013. Physiological stress responses predict sexual functioning and satisfaction differently in women who have and have not been sexually abused in childhood. *Psych. Trau. Theory Res. Prac. Pol.* 5 (4), 350–358. <https://doi.org/10.1037/a0027706>.
- Pulverman, C.S., Boyd, R.L., Stanton, A.M., Meston, C.M., 2017. Changes in the sexual self-schema of women with a history of childhood sexual abuse following expressive writing treatment. *Psychol. Trauma* 9 (2), 181–188. <https://doi.org/10.1037/tra0000163>. Epub 2016 Jun 23. PMID: 27336216; PMCID: PMC5182200.
- Pulverman, C.S., Kilimnik, C.D., Meston, C.M., 2018. The impact of childhood sexual abuse on Women's sexual health: a comprehensive review. *Sex. Med. Rev.* 6 (2), 188–200. <https://doi.org/10.1016/j.sxmr.2017.12.002>.
- Roberts, R., O'Connor, T., Dunn, J., Golding, J., 2004. The effects of child sexual abuse in later family life; mental health, parenting and adjustment of offspring. *Child Abuse Negl.* 28 (5), 525–545. <https://doi.org/10.1016/j.chiabu.2003.07.006>.
- Schnurr, P., Lunney, C., Forshay, E., Thurston, V., Chow, B., Resick, P., Foa, E., 2009. Sexual function outcomes in women treated for posttraumatic stress disorder. *J. Women's Health* 2002 (18), 1549–1557. <https://doi.org/10.1089/jwh.2008.1165>.
- Slade, M., Leese, M., Cahill, S., Thornicroft, G., Kuipers, E., 2005. Patient-rated mental health needs and quality of life improvement. *Br. J. Psychiatry* 187 (3), 256–261. <https://doi.org/10.1192/bjp.187.3.256>.
- Thombs, B.D., Bernstein, D.P., Lobbestael, J., Arnt, A., 2009. A validation study of the Dutch childhood trauma questionnaire-short form: factor structure, reliability, and known-groups validity. *Child Abuse Negl.* 33 (8), 518–523. <https://doi.org/10.1016/j.chiabu.2009.03.001>.
- Turner, S., Harvey, C., Hayes, L., Castle, D., Galletly, C., Sweeney, S., Spittal, M.J., 2019. Childhood adversity and clinical and psychosocial outcomes in psychosis. *Epidemiol. Psychiatr. Sci.* <https://doi.org/10.1017/S2045796019000684>.
- Varese, F., Smeets, F., Drukker, M., Lieverse, R., Lataster, T., Viechtbauer, W., Bentall, R. P., 2012. Childhood adversities increase the risk of psychosis: a meta-analysis of patient-control, prospective- and cross-sectional cohort studies. *Schizophr. Bull.* 38 (4), 661–671. <https://doi.org/10.1093/schbul/sbs050>.
- Voermans, J.M., Van, H.L., Peen, J., Hengeveld, M.W., 2012. Het bespreken van seksuele problemen door psychiaters en aiossen = is there adequate discussion between psychiatrists and their patients regarding patients' sexual problems? *Tijdschr. Psychiatr.* 54 (1), 9–16. <http://login.ezproxy.ub.unimaas.nl/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=2012-01866-001&site=ehost-live&scope=site>.
- Wiersma, D., van Busschbach, J., 2001. Are needs and satisfaction of care associated with quality of life? *Eur. Arch. Psychiatry Clin. Neurosci.* 251 (5), 239–246. <https://doi.org/10.1007/s004060170033>.
- Wiersma, D., van den Brink, R., Wolters, K., McCabe, R., Bullenkamp, J., Hansson, L., Priebe, S., 2009. Individual unmet needs for care: are they sensitive as outcome criterion for the effectiveness of mental health services interventions? *Soc. Psychiatry Psychiatr. Epidemiol.* 44 (4), 317–324. <https://doi.org/10.1007/s00127-008-0432-z>.
- Zwicky, S., Merriman, G., 2011. The association between childhood sexual abuse and adult female sexual difficulties. *Sex. Relatsh. Ther.* 26 (1), 16–32. <https://doi.org/10.1080/14681994.2010.530251>.



José de Jager is a licensed clinical psychologist and cognitive behavioral therapist who combines clinical work in Flexible Assertive Community Outreach (FACT) teams with research focusing on the recovery of people with SMI. She has a background in psychology and medical anthropology and teaches in the postdoctoral education for health care psychologists.



Maurice Topper (Ph.D.) works as a licensed health care psychologist and researcher for a mental health institution in the Netherlands (GGZ-Noord-Holland-Noord). He has a background in clinical psychology and methodology. His dissertation focused on a preventive intervention that aims to prevent the development of depression and anxiety disorders by targeting excessive worry and rumination in adolescents and young adults (Mindresolve). Recently, he collaborated on a number of randomized controlled trials, questionnaire validation of transdiagnostic processes such as experiential avoidance, and a school-based prevention program for anxiety disorders and the promotion of prosocial behavior through judo.



Annet Nugter is head of the research department of the mental health care organization GGZ Noord-Holland-Noord in the Netherlands. She has a background as psychologist and is a senior researcher in psychiatry. Clients with recent onset schizophrenia and their parents formed the subject of her PhD. As senior researcher she is involved as a supervisor of several research projects in mental health care that concern clients with a severe mental health illness, like schizophrenia. In addition, she is an expert on the subject of routine outcome monitoring.



Jim van Os is Professor of Psychiatric Epidemiology and Public Mental Health, Head of Division Neuroscience, Utrecht University Medical Centre, Utrecht, The Netherlands. He is also a visiting professor at King's College London, Department of Psychosis Studies. He has a background in Epidemiology and Psychiatry. He was member of the Psychosis Group of the DSM-5 Task Force. In his clinical area of psychiatric epidemiology and public mental health, he is part of an international movement overseeing extensive pilots of recovery-based and e/mHealth-based disruptive mental health service transformation in the Netherlands and elsewhere in the world.