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Perceived social support in parents with schizophrenia or bipolar disorder and their co-parents: The Danish high risk and resilience study VIA 7

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ABSTRACT

Background: Lack of social support is a risk factor for symptom recurrence and poor prognosis for individuals with severe mental disorders. Compared to healthy populations, individuals with schizophrenia or bipolar disorder are more likely to perceive lower levels of social support. Evidence is needed on perceived social support in parents with schizophrenia or bipolar disorder and their co-parents.
Methods: Based on data from a population-based cohort study, The Danish High Risk and Resilience Study – VIA 7, we compared perceived social support measured with The Social Provisions Scale (SPS) in parents with schizophrenia ($n = 148$), their co-parents ($n = 157$), parents with bipolar disorder ($n = 98$), their co-parents ($n = 89$), and control parents ($n = 359$).
Results: We found lower levels of perceived social support in parents with schizophrenia and bipolar disorder compared with controls. Schizophrenia co-parents had lower levels of perceived social support compared to controls, but no difference was found between bipolar disorder co-parents and controls.
Conclusions: Low levels of perceived social support for these parents may pose an additional risk factor for their offspring in addition to the effects of genetic risk. Our results may inform future intervention studies and highlight the need for support for families with parental schizophrenia or bipolar disorder.

1. Introduction

Being a parent is often an important and central element of a person's life that consolidates the identity and promotes the maintenance of interpersonal relationships (Mowbray et al., 2000; Brunette and Dean, 2002; Perera et al., 2014; Price-Robertson et al., 2015). Indeed, parenthood is most of the time associated with a more positive identity, a sense of pride, satisfaction with life, increased self-esteem, and a feeling of competence. As a result, parenthood can act as a protective factor against adversity (Nicholson and Deveney, 2009). It can, however, at the same time represent a major challenge, particularly in the case of a parent struggling with relationships or a severe mental disorder that may compromise their well-being and disrupt family dynamics, unless they have access to the necessary social resources to support them

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(Price-Robertson et al., 2015).

Perceived strong social connections are essential for maintaining good mental health, providing feelings of care, value, and usefulness (Caron, 2013). Positive relationships and support help fulfill basic psychological needs (Ibarra-Rovillard and Kuiper, 2011) and are linked to better emotional and physical health outcomes (Pietromonaco et al., 2013; Iob et al., 2018), including lower morbidity and mortality (Holt-Lunstad et al., 2010). While the importance of social support for the well-being of people in the general population is well-established, some research also underlines that it may be particularly important for individuals who suffer from a severe mental disorder (Dunne et al., 2019), especially for those who, in addition, are parents (Seeger et al., 2022). Lack of social support is generally considered a risk factor for symptom recurrence and is associated with poor prognoses for severe mental disorders, such as schizophrenia and bipolar disorder (Studart et al., 2015; Wang et al., 2018). For parents with severe mental disorders, feeling isolated or unsure of whom to contact during a crisis may have detrimental effects on their ability to respond to their children's educational, emotional, and security needs. In contrast, support from the social environment (including extended family, friends, and teachers) may act as a protective factor for families with a parent who has a mental disorder (Seeger et al., 2022). This support can be emotional or practical (e.g., respite, advice) or through opportunities to participate in family or community activities (Herba et al., 2013). Furthermore, social support has been linked to a better quality of life for children and adolescents whose parents have a mental disorder (Radicke et al., 2021).

Nonetheless, studies show that adults with schizophrenia or bipolar disorder are more likely to report low levels of social support than adults from the general population (Gayer-Anderson and Morgan, 2013; Greenberg et al., 2014; Warren et al., 2018). The nature of these disorders, i.e., the nature of symptoms, severity of the disorders, or frequent hospitalizations, can hinder the establishment and maintenance of social bonds (Thorup et al., 2006; Eidelman et al., 2012; Greenberg et al., 2014; Palumbo et al., 2015; Studart et al., 2015). Furthermore, adults with schizophrenia or bipolar disorder often face social disadvantages, such as unemployment, financial problems, and low socioeconomic status, which can lead to fewer social connections (Shippee et al., 2011; Palumbo et al., 2015). Being part of the workforce is particularly important for establishing relationships with people who share common values and/or beliefs. It fosters social integration and guidance and provides normative standards (Caron, 2013). In addition, the stigma associated with these diagnoses, frequently reported by patients and their families, further impedes the opportunities to form relationships and seek support, both from others (Palumbo et al., 2015) and within their families (Suto et al., 2010).

Non-random mating is prevalent among individuals with mental disorders and entails mated couples sharing more phenotypic traits than if mating occurred randomly (Nordsletten et al., 2016). Non-random mating may play a central role as the person with a close relation to an individual with a mental disorder is also likely to have a mental disorder, which may further affect the level of functioning for both partners and their offspring. This concept can extend to co-parents, defined as individuals who share parental responsibilities for a child or children. Earlier studies from this cohort have found that co-parents to parents with schizophrenia or bipolar disorder more often fulfilled the criteria for a mental disorder and had poorer social functioning compared to parents from the control group. Further, co-parents to parents with schizophrenia also had significantly higher levels of affective lability and performed poorer on processing speed compared to control group parents (Greve et al., 2021; Jefsen et al., 2022; Rohd et al., 2023; Steffensen et al., 2023; Veddum et al., 2023).

Taken together, the literature highlights that people with severe mental disorders often report insufficient social support, essential for their overall well-being. However, there remains a dearth of knowledge regarding this issue among parents with severe mental disorders. Given the significance of social support for the well-being and quality of life of both children and adults in families facing mental disorders, targeting these factors with effective interventions could improve the course of parental mental disorders and foster a more positive family environment, thereby strengthening children's well-being and mental health. To inform such interventions, evidence is needed about the perceived social support of parents with severe mental disorders and their co-parents.

1.1. Aims

We aim to compare perceived social support in parents with schizophrenia or bipolar disorder, their co-parents, and population-based controls. We hypothesize that parents with schizophrenia and bipolar disorder perceive less social support compared to population-based control parents and that co-parents to parents with schizophrenia or bipolar disorder perceive less social support compared to population-based control parents. Further, we hypothesize that parents with schizophrenia perceive less social support than their co-parents as do parents with bipolar disorder when compared with their co-parents.

2. Methods

The Danish High Risk and Resilience Study – VIA 7 (hereafter the VIA 7 Study) is a population-based cohort study conducted in Denmark from 1 January 2013 until 31 January 2016. The VIA 7 Study sample consists of 522 7-year-old children with no parent, one parent, or both parents diagnosed with schizophrenia or bipolar disorder. The design of the VIA 7 Study has been described in detail elsewhere (Thorup et al., 2015). This study focused on the biological parents from the VIA 7 Study cohort.

2.1. Participants

Participants were identified in the Danish Civil Registration System (Pedersen et al., 2006) and the Danish Psychiatric Central Research Register (Mors et al., 2011) through linkage of the unique personal identification number assigned to all Danish citizens. The Danish Psychiatric Central Research Register contains data on all admissions to Danish psychiatric in-patient facilities, and since 1995 all contacts to outpatient psychiatric departments and visits to psychiatric emergency care units. Schizophrenia was defined as schizophrenia, delusional disorder, or schizoaffective disorder coded in accordance with the International Classification of Diseases, 10th revision or 8th revision (ICD-10: F20, F22, and F25 or ICD-8: 295, 297, 298.29, 298.39, 298.89, and 298.99) and bipolar disorder (ICD-10: F30 and F31 or ICD-8: 296.19 and 296.39). We defined the co-parent as the other biological parent (i.e., the parent without a diagnosis of schizophrenia or bipolar disorder recorded in the Danish registries). We labeled these parents SZ-co and BP-co. Parents from the control group and all co-parents could have any other mental disorder. Both parents from the population-based control group were labeled PBC.

All participants provided written informed consent after having received both verbal and written information about the study. The study was approved by the Danish Data Protection Agency. The Danish Ministry of Health granted permission to retrieve the data from Danish registers. The study protocol was evaluated by the National Committee on Health Research Ethics and all procedures were performed according to their guidelines. However, according to Danish law, this type of study did not require ethical approval.

2.2. Measures

We used the questionnaire the Social Provisions Scale (SPS), which is developed to assess the provisions of social relationships (Cutrona and Russell, 1987). These provisions reflect what we receive from relationships with other people. It assesses six provisions of social relationships based on the Social Provision Theory of Weiss (Weiss and Rubin, 1974).

The SPS consists of 24 items that are rated on a four-point Likert scale rating from 1 ("strongly disagree") to 4 ("strongly agree"). The six provisions include Guidance (advice or information), Reliable alliance (assurance that others can be counted on in times of stress), Reassurance of worth (recognition of one's competence), Attachment (emotional closeness), Social integration (a sense of belonging to a group of friends), and Opportunity for nurturance (providing assistance to others). Scores can be derived for each of the six subscales as well as for a global social support scale. Higher scores denote better social provisions. The SPS questionnaire have proved suitable for assessment of perceived support from the perspective of the recipient (Gottlieb and Bergen, 2010), as well as a high level of adequate reliability and excellent convergent and divergent validity (Cutrona and Russell, 1987; Caron, 2013; Perera, 2016).

Intelligence was estimated with the Reynolds Intellectual Screening Test (RIST), an individually administered assessment scale consisting of a verbal subtest (Guess What) and a nonverbal subtest (Odd-Item Out) (Reynolds and Kamphaus, 2009). An estimated IQ, the RIST index, is based on age-stratified norms (Danish Version, Hogrefe, Psykologisk Forlag A/S, Virum, provided by the publisher, 2011).

Levels of social functioning of the index and co-parents were measured using the Personal and Social Performance scale (PSP) (Morosini et al., 2000). Based on a semi-structured interview social functioning during the previous month was assessed, and consensus meetings were held regularly to secure agreement among raters.

2.3. Statistical analysis

The study groups were compared on demographic characteristics using one-way analysis of variance (ANOVA) or Pearson's chi-squared test of independence. ANOVA was applied to test between-group differences as well as within-group differences of SPS total score and the six subscales. These analyses were unadjusted. Effect sizes were calculated using Cohen's d (small, 0.2; medium, 0.5; and large, 0.7). Two-way ANOVAs with and without an interaction term between gender and group status were run to examine the effect of gender and group status on SPS total score and subscales. Alpha level was set to 0.05 for all analyses, and the false discovery rate in the multiple comparisons was calculated according to the Benjamini-Hochberg procedure with the q-value set to 0.05 (Benjamini and Hochberg, 1995). Due to the risk of overcorrecting, we did not co-vary for socioeconomic status (education and employment), which is intrinsically associated with group status. All analyses were performed with Stata 17 statistical software.

3. Results

3.1. Demographic characteristics

Our study included SPS data from 829 biological parents (146 SZ, 99 BP, 151 SZ-co, 89 BP-co, and 359 PBC). Parents with SZ were significantly younger compared with parents with BP and PBC. SZ-co were

Table 1
Demographic characteristics of parents with a diagnosis of schizophrenia, parents with a diagnosis of bipolar disorder, parents from the control group as well as their co-parents.

	SZ	BP	PBC	P-value	P-value Pairwise comparisons		
					SZ vs. PBC	BP vs. PBC	BP vs. SZ
Parents living together, N (%)				**< 0.001**	**< 0.001**	**< 0.001**	**0.001**
Index parents, N	146	99	175				
Female, N (%)	99 (67.81)	60 (60.61)	104 (59.43)	0.271	–	–	–
Age at inclusion, mean (SD)	38.03 (6.07)	40.21 (6.06)	40.56 (4.83)	**< 0.001**	**< 0.001**	0.868	**0.008**
Employed or studying, N (%)	72 (50.70)	57 (58.16)	160 (91.43)	**< 0.001**	**< 0.001**	**< 0.001**	0.255
Education, N	139	98	171				
Primary/lower secondary, N (%)	37 (26.62)	7 (7.14)	7 (4.09)	**< 0.001**			
Upper secondary, vocational, short cycle tertiary, N (%)	61 (43.88)	40 (40.82)	85 (49.71)		**< 0.001**	0.271	**< 0.001**
Bachelor degree, equivalent or higher, N (%)	41 (29.50)	51 (52.04)	79 (46.20)				
PSP total score, mean (SD)	66.22 (15.84)	68.87 (13.94)	84.33 (9.47)	**< 0.001**	**< 0.001**	**< 0.001**	0.266
Intelligence, RIST index, mean (SD)	101.43 (10.01)	103.99 (8.30)	104.08 (7.70)	**0.015**	**0.020**	0.997	0.064

Co-parents, N	**SZ-co** 151	**BP-co** 89	**PBC** 169		**SZ-co vs. PBC**	**BP-co vs. PBC**	**BP-co vs. SZ-co**
Female, N (%)	77 (50.99)	46 (51.69)	79 (46.75)	0.665	–	–	–
Age at inclusion, mean (SD)	38.60 (6.42)	41.04 (5.45)	40.81 (4.29)	**< 0.001**	**0.001**	0.942	**0.002**
Employed or studying, N (%)	111 (75.51)	78 (87.64)	160 (95.81)	**< 0.001**	**< 0.001**	**0.015**	**0.024**
Education, N	176	106	187				
Primary/lower secondary, N (%) Upper secondary, vocational, short-cycle tertiary, N (%) Bachelor degree, equivalent or higher, N (%)	21 (14.48) 77 (53.10) 47 (32.41)	3 (3.45) 35 (40.23) 49 (56.32)	9 (5.39) 79 (47.31) 79 (47.31)	**< 0.001**	**0.003**	0.365	**< 0.001**
PSP total score, mean (SD)	75.93 (14.54)	82.80 (12.05)	85.59 (8.19)	**< 0.001**	**< 0.001**	0.168	**< 0.001**
Intelligence, RIST index, mean (SD)	102.03 (8.61)	106.03 (7.92)	103.82 (8.33)	**0.002**	0.139	0.109	**0.001**

SZ = Parents with a diagnosis of schizophrenia, BP = Parents with a diagnosis of bipolar disorder, SZ-CO = co-parents to parents with a diagnosis of schizophrenia, BP-CO = co-parents to parents with a diagnosis of bipolar disorder, PBC = control group.
Chi-squared test of independency in contingency table, One-way ANOVA.

significantly younger compared with BP-co and PBC. Both SZ and BP, and SZ-co and BP-co were less often employed or studying compared to PBC. Furthermore, parents with SZ had lower levels of education compared with BP and PBC, and SZ-co had lower levels of education compared with BP-co and PBC. Both parents with SZ and parents with BP had significantly lower levels of social functioning compared to PBC which was also the case for SZ-co compared to PBC. Parents with SZ had significantly lower intelligence compared to PBC and SZ-co had lower intelligence compared to BP-co. Moreover, we found that in families with parental SZ, 40.41 % of the biological parents lived together, which was the case in 53.91 % of families with parental BP and in 84.34 % of PBC families (Table 1).

3.2. Between-group differences

Both parents with SZ and parents with BP had significantly lower scores on all six SPS subscales and the SPS Total score compared with PBC (small to large effect sizes) (Table 2 and Figs. 1a and 1b). All the six subscales and SPS Total score were non-significantly different between parents with SZ and parents with BP. Compared with PBC, SZ-co had significantly lower scores on the SPS Total score and all the SPS subscales (small effect sizes) except from the SPS Opportunity for nurturance subscale. BP-co did not differ significantly from PBC on any of the six subscales or the total score. SZ-co had significantly lower scores on the SPS Reassurance of worth subscale, the SPS Social integration subscale and SPS Total score compared with BP-co (Table 2 and Figs. 1a and 1b).

3.3. Within-group differences

Parents with SZ did not differ significantly from SZ-co on the SPS Attachment subscale, the SPS Guidance subscale, the SPS Opportunity for nurturance subscale, the SPS Reliable alliance subscale, the SPS Social integration subscale, and the SPS Total score but had significantly lower scores on the SPS Reassurance of worth subscale with small effect size. Parents with BP had significantly lower scores on all six subscales and SPS Total score compared to BP-co with small to medium effect sizes (Table 3 and Figs. 1a and 1b).

3.4. Sex differences

We found a significant interaction effect of sex on the association between group status and the Attachment subscale $F(4, 819) = 3.48$, $p = 0.0079$, and the Guidance subscale $F(4, 819) = 2.39$, $p = 0.049$. We found no significant interaction effect of sex on the association between group status and SPS total score or the remaining four subscales.

Furthermore, we found a significant main effect of sex on SPS total score ($p = 0.0434$) across groups. Females scored significantly higher than males except for SZ-co parents, where males scored higher than females. We found no significant sex differences on the remaining four subscales (See Figs. 2a and 2b in the online supplement).

4. Discussion

We investigated perceived social support in parents diagnosed with schizophrenia or bipolar disorder and their co-parents in a large, population-based cohort study. In accordance with our expectations, we found that parents with both SZ and BP perceived less social support compared with PBC parents. Our results confirm that perceived social support can be considered as a transdiagnostic factor and is an equally relevant clinical feature in schizophrenia and bipolar disorder. Overall, the present findings of less perceived social support from the social network of parents with schizophrenia or bipolar disorder are consistent with other studies documenting poorer social relationships or networks in individuals with severe mental disorders compared with controls (Gayer-Anderson and Morgan, 2013; Greenberg et al., 2014). A comparable study of patients with bipolar disorder found less perceived social support compared with a general population control group (moderate effect sizes on the SPS total score and small to moderate effect sizes on all subscales) (Warren et al., 2018).

In support of our second hypothesis, we found that SZ-co parents perceived less social support than PBC parents, which was not the case for BP-co parents. Therefore, children in families with parental schizophrenia have a higher risk of growing up with two parents who are more likely to experience lower levels of social support from their network, whereas children in families with parental bipolar disorder are likely to have at least one parent with perceived social support comparable to that of PBC parents. This is further supported by the earlier results from this cohort where we showed that individuals, who have children by

Table 2
Between-group differences in parents with schizophrenia, parents with bipolar disorder, parents from the control group, co-parents to parents with schizophrenia, and co-parents to parents with bipolar disorder on the Social Provisions Scale (SPS) total score and subscales.

Total ($N = 829$)						Pairwise comparisons					
	SZ ($N = 146$)	BP ($N = 99$)	PBC ($N = 344$)	SZ−co ($N = 151$)	BP-co (N = 89)	SZ vs. PBC	BP vs. PBC	SZ vs. BP	SZ-co vs. PBC	BP-co vs. PBC	SZ-co vs. BP-co
Test/variable	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	*P* *d*	*P* *d*	*P* *d*	*P* *d*	*P* *d*	*P* *d*
SPS attachment	13.81 (2.54)	13.69 (2.85)	15.00 (1.62)	14.32 (2.11)	14.75 (1.87)	**<0.001** **−0.62**	**<0.001** **−0.67**	0.656 0.05	**0.001** **−0.38**	0.315 −0.15	0.126 −0.21
SPS guidance	14.38 (2.45)	14.24 (2.86)	15.27 (1.48)	14.60 (2.25)	15.11 (1.72)	**<0.001** **−0.49**	**<0.001** **−0.55**	0.596 0.05	**0.001** **−0.38**	0.508 −0.11	0.062 −0.25
SPS opportunity for nurturance	13.99 (2.12)	13.84 (2.48)	14.59 (1.47)	14.29 (1.73)	14.44 (1.64)	**0.001** **−0.36**	**<0.001** **−0.43**	0.529 0.07	0.087 −0.19	0.471 −0.10	0.543 −0.09
SPS reliable alliance	14.89 (2.05)	14.73 (2.53)	15.57 (1.30)	15.07 (1.71)	15.34 (1.48)	**<0.001** **−0.44**	**<0.001** **−0.51**	0.467 0.07	**0.003** **−0.35**	0.256 −0.17	0.251 −0.16
SPS reassurance of worth	12.99 (2.59)	13.42 (2.73)	14.32 (1.74)	13.58 (2.07)	14.44 (1.70)	**<0.001** **−0.66**	**<0.001** **−0.45**	0.110 −0.17	**<0.001** **−0.40**	0.604 0.07	**0.002** **−0.45**
SPS social integration	13.83 (2.12)	13.32 (2.78)	14.77 (1.37)	14.09 (1.90)	14.78 (1.38)	**<0.001** **−0.58**	**<0.001** **−0.81**	0.034 0.21	**<0.001** **−0.44**	0.971 0.01	**0.005** **−0.40**
SPS total score	83.88 (10.31)	83.24 (13.20)	89.53 (6.42)	85.95 (7.43)	88.87 (7.43)	**<0.001** **−0.73**	**<0.001** **−0.75**	0.574 0.06	**<0.001** **−0.49**	0.525 −0.10	**0.013** **−0.35**

SZ = Parents with a diagnosis of schizophrenia, BP = Parents with a diagnosis of bipolar disorder, PBC = control group.
SZ-CO = co-parents to parents with a diagnosis of schizophrenia, BP-CO = co-parents to parents with a diagnosis of bipolar disorder.
P = significance, level $p < 0.029$ after correction according to the Benjamini-Hochberg procedure.

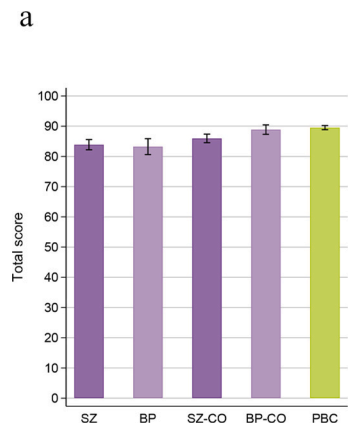

Fig. 1a. Performance on Social Provisions Scale total score in parents with schizophrenia, parents with bipolar disorder, parents from the control group, co-parents to parents with schizophrenia, and co-parents to parents with bipolar disorder.
SZ = Parents with a diagnosis of schizophrenia, BP = Parents with a diagnosis of bipolar disorder, PBC = control group.
SZ-CO = co-parents to parents with a diagnosis of schizophrenia, BP-CO = co-parents to parents with a diagnosis of bipolar disorder.
See Table 2 and Table 3 for the level of significance of the pairwise comparisons.

partners with schizophrenia, more often present with a diagnosis of a mental disorder, and have lower levels of social functioning, poorer social responsiveness, and more affective lability (Nordsletten et al., 2020). These results indicate that since non-random mating is present in families with parental schizophrenia, this may add to the risk of experiencing lower levels of perceived social support as well as other risk factors in both parents in families with parental schizophrenia.

The effect of sex across groups on the SPS total score points towards overall sex differences regarding perceived social support. Generally,

Table 3
Within-group differences in parents with schizophrenia and co-parents to parents with schizophrenia as well as parents with bipolar disorder and co-parents to parents with bipolar disorder on Social Provisions Scale (SPS) total score and subscales.

Test/variable	SZ vs SZ-co	BP vs BP-co
	P	*P*
	d	*d*
SPS attachment	0.034	**0.001**
	−0.22	**−0.44**
SPS guidance	0.355	**0.004**
	−0.09	**−0.36**
SPS opportunity for nurturance	0.145	**0.023**
	−0.16	**−0.28**
SPS reliable alliance	0.362	**0.016**
	−0.10	**−0.29**
SPS reassurance of worth	**0.016**	**0.001**
	−0.25	**−0.44**
SPS social integration	0.226	**<0.001**
	−0.13	**−0.65**
SPS total score	0.042	**<0.001**
	−0.22	**−0.52**

SZ = Parents with a diagnosis of schizophrenia, BP = Parents with a diagnosis of bipolar disorder, PBC = control group.
SZ-CO = co-parents to parents with a diagnosis of schizophrenia, BP-CO = co-parents to parents with a diagnosis of bipolar disorder.
P = significance, level $p < 0.029$ after correction according to the Benjamini-Hochberg procedure.

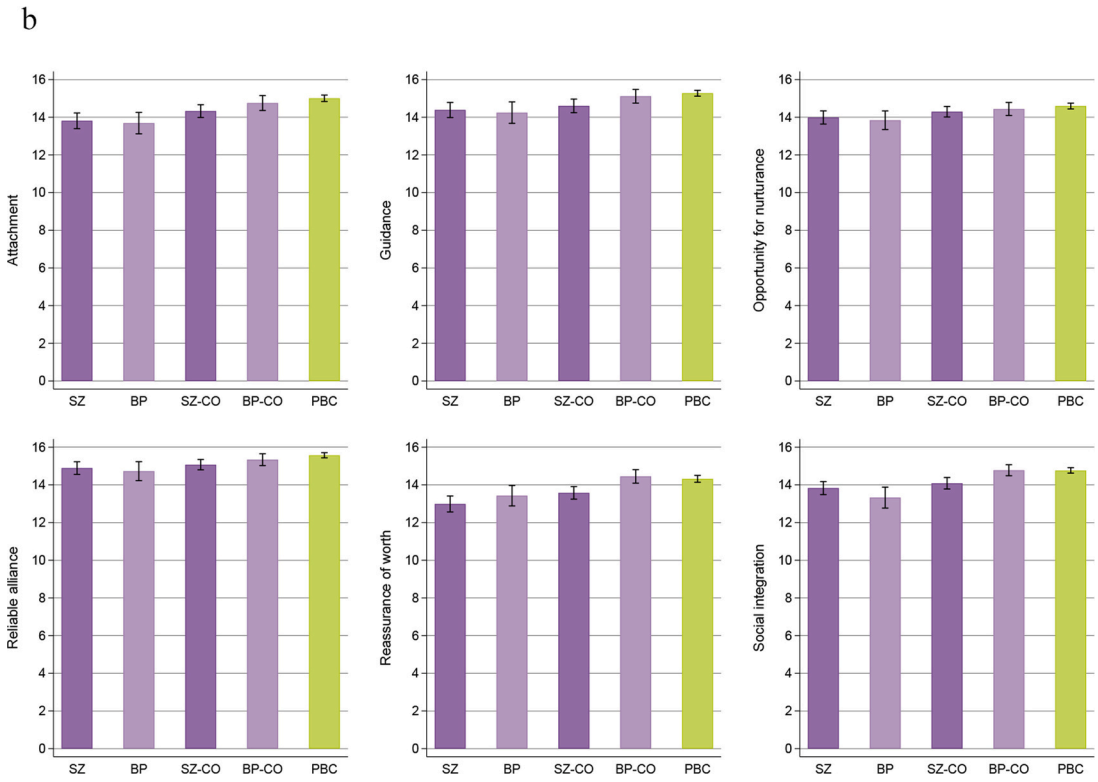

Fig. 1b. Performance on Social Provisions Scale subscales in parents with schizophrenia, parents with bipolar disorder, parents from the control group, co-parents to parents with schizophrenia, and co-parents to parents with bipolar disorder.
SZ = Parents with a diagnosis of schizophrenia, BP = Parents with a diagnosis of bipolar disorder, PBC = control group.
SZ-CO = co-parents to parents with a diagnosis of schizophrenia, BP-CO = co-parents to parents with a diagnosis of bipolar disorder.
See Table 2 and Table 3 for the level of significance of the pairwise comparisons.

mothers seem to perceive more social support than fathers across the different risk groups. This converges with a prior finding where females with bipolar disorder report higher levels of social support than males (Warren and Fowler, 2021). Furthermore, the different associations between sex and the attachment subscale (emotional closeness) as well as sex and the guidance subscale (advice or information) support that there is an exception to mothers generally perceiving more social support and that is when fathers are co-parents to a mother with schizophrenia. In that case, fathers will overall perceive more social support regarding attachment and guidance than their partners (mothers with schizophrenia). Mothers with schizophrenia may perceive less emotional closeness and guidance due to their illness, which will either force or nurture the father to take on this role or responsibility in the family (Power et al., 2011; Marder and Freedman, 2014).

One possible explanation for the lower perceived social support among parents with schizophrenia may be attributed to negative symptoms. These symptoms can lead to deficiencies in motivation, communication, affect, and social functioning and less interest in usual hobbies and activities (Correll and Schooler, 2020). Another plausible explanation is the fact that, for many people, having a mental disorder is still associated with feelings of stigma and self-stigmatization (Hinshaw and Cicchetti, 2000). Stigma often leads to social withdrawal, and a propensity to hide one's problems or keep one's feelings and thoughts private. Qualitative studies have documented heightened fear of judgment among parents, contributing to their reluctance to engage in social interactions with peers such as other parents at school, colleagues, or neighbors (Reupert et al., 2021). Consequently, these parents, who may perceive themselves as "different" or "nor normal", miss out on the stress buffering effects, that social relations can provide (Sherman and Hooker, 2018).

Very few studies have investigated perceived social support in families affected by parental mental disorders even though strong social networks appear to act as a protective factor for families living with parental mental disorder (by offering emotional or practical support). One such study highlighted that parents with bipolar disorder and their partners ($n = 55$ BP couples) had smaller social networks and were less satisfied with them than healthy control couples ($n = 47$ control couples) (Serravalle et al., 2020).

Generally, the focus on families with parental severe mental disorder has mainly been around supporting the children and other family members in coping with the challenges of the mental disorder (Stambaugh et al., 2017; Radley et al., 2022). This may result in overlooking the parent's own experiences of poor social support, potentially leaving parents feeling unheard and unsupported. Given that parent and child outcomes are inherently linked (Kahng et al., 2008), it is essential that parental perceptions and their support needs are better understood to improve service provision for this group. Our findings show that parents with severe mental illness experience a lack of social support. Thus, interventions focusing on social relationships, and improving social support networks may be warranted. The Social Provision Scale may be used to identify perceived social support in parents with schizophrenia or bipolar disorder as well as their co-parents and may guide future studies investigating interventions aiming to improve social support, and potentially thereby also social functioning and social integration (Nicholson and Valentine, 2019; Johns, 2022).

This study has several strengths. To our knowledge, the Danish High Risk and Resilience Study VIA 7 is the largest sample to date that has examined perceived social support in both biological parents in families with parental schizophrenia and bipolar disorder compared with a population-based control group. Using this population-based cohort is a major strength of our study as participants were extracted from the registers, which enhances representativity. Furthermore, the completion rate was high and the SPS questionnaire is well-validated. Despite these strengths, our findings should also be interpreted in the context of limitations. First, due to the study design, where we only investigated parents (i.e., selection into parenthood), our results cannot be generalized to all individuals with schizophrenia or bipolar disorder. Second, the current study was cross-sectional, and we are therefore unable to determine any causal relations. Third, information on symptoms, stage of illness, or engagement in treatment at the assessment time was unavailable. Fourth, we did not investigate how perceived social support of the parents is associated with various outcomes in the offspring. Finally, questionnaires are subjective and rely on the respondents' understanding of the questions and the concepts being addressed.

In conclusion, parents with children aged 7 years, diagnosed with either schizophrenia or bipolar disorder and their partners displayed poorer perceived social support than parents from the general population. Since practical and emotional support from the social network is known to be important for maintaining good mental health and managing periods of crisis, families with severe mental disorder are at risk of missing out on the positive effects of this social capital factor. This knowledge should be taken into consideration when designing intervention studies. Finally, in a planned study, the associations between perceived social support of the parents and child global functioning and psychopathology will be investigated.

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CRediT authorship contribution statement

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Declaration of competing interest

The authors have declared that there are no conflicts of interest in relation to the subject of this study.

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