BJPsych Open (2025)
11, e11, 1–10. doi: 10.1192/bjo.2024.816

Lost and found: dynamics of relationship and employment status over time in people with affective and psychotic spectrum disorders

Fanny Senner, Lisa Kerkhoff, Kristina Adorjan, Michael Lauseker, Monika Budde, Maria Heilbronner, Janos L. Kalman, Mojtaba Oraki Kohshour, Sergi Papiol, Daniela Reich-Erkelenz, Sabrina K. Schaupp, Eva C. Schulte, Thomas Vogl, Ion-George Anghelescu, Volker Arolt, Bernhardt T. Baune, Udo Dannlowski, Nina Dalkner, Detlef E. Dietrich, Andreas J. Fallgatter, Christian Figge, Carsten Konrad, Fabian U. Lang, Jens Reimer, Eva Z. Reinighaus, Max Schmauß, Andrea Schmitt, Simon Senner, Carsten Spitzer, Jörg Zimmermann, Alkomiet Hasan, Peter Falkai, Thomas G. Schulze, Urs Heilbronner and Sophie-Kathrin Greiner

Background

Employment and relationship are crucial for social integration. However, individuals with major psychiatric disorders often face challenges in these domains.

Aims

We investigated employment and relationship status changes among patients across the affective and psychotic spectrum – in comparison with healthy controls, examining whether diagnostic groups or functional levels influence these transitions.

Method

The sample from the longitudinal multicentric PsyCourse Study comprised 1260 patients with affective and psychotic spectrum disorders and 441 controls (mean age ± s.d., 39.91 ± 12.65 years; 48.9% female). Multistate models (Markov) were used to analyse transitions in employment and relationship status, focusing on transition intensities. Analyses contained multiple multistate models adjusted for age, gender, job or partner, diagnostic group and Global Assessment of Functioning (GAF) in different combinations to analyse the impact of the covariates on the hazard ratio of changing employment or relationship status.

Results

The clinical group had a higher hazard ratio of losing partner (hazard ratio 1.46, $P < 0.001$) and job (hazard ratio 4.18, $P < 0.001$) than the control group (corrected for age/gender). Compared with controls, clinical groups had a higher hazard of losing partner (affective group, hazard ratio 2.69, $P = 0.003$; psychotic group, hazard ratio 3.06, $P = 0.001$) and job (affective group, hazard ratio 3.43, $P < 0.001$; psychotic group, hazard ratio 4.11, $P < 0.001$). Adjusting for GAF, the hazard ratio of losing partner and job decreased in both clinical groups compared with controls.

Conclusion

Patients face an increased hazard of job loss and relationship dissolution compared with healthy controls, and this is partially conditioned by the diagnosis and functional level. These findings underscore a high demand for destigmatisation and support for individuals in managing their functional limitations.

Keywords

Social integration; affective; psychotic; functional level; destigmatisation.

Relationship and employment status are key indicators of social integration.[1,2] Psychiatric diagnoses often disrupt relationships and many people live alone. Studies reveal that those diagnosed with first-episode psychosis frequently lose their partners,[3] divorce rates are higher for individuals with bipolar disorder and people with schizophrenia encounter difficulties forming new relationships.[3–5] These effects on relationships are detrimental because partners often contribute significantly to recovery by helping with daily tasks, medication adherence and relapse detection,[1,2] all of which are known to improve prognosis in psychotic disorders.[3] Being in a relationship is correlated with a higher quality of life compared with being divorced or single.[6] Similarly, after people are diagnosed with mental disorders such as schizophrenia, bipolar disorder or depression, they often lose their employment.[7] This effect on employment has both economic implications – costing around 1 trillion US dollars annually – and affects their well-being and their disease course.[8] Employment is linked to improved social functioning, self-esteem, symptom levels and quality of life.[9] Employed individuals have a higher likelihood of achieving symptomatic remission and recovery,[9] but employment and outcome may be mutually dependent. Barriers to employment include cognitive deficits, stigma and lack of support. In Europe, employment rates range from 62 to 66%; however, they are notably lower for people with schizophrenia, ranging from 10 to 20%,[10] and the average job tenure of people with serious mental illness is only 8 months compared with 9 years in the general population.[11]

Supportive relationships and economic security protect against mental health issues and rank among the most desired goals for people.[1] Therefore, it is crucial to focus our scientific attention on the challenges presented by the impaired occupational and relationship status of people within the psychotic-affective spectrum.

Traditionally, many clinicians have focused on remission, i.e. freedom from disorder-specific symptoms.[12] Recovery is a more complex model and encompasses well-being, including vocational functioning, independent living and peer relationships.[13,14] Nowadays, functional outcomes aligning with individuals' wishes are emphasised. Across diagnoses, the Global Assessment of

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

Functioning (GAF) scale measures the level of functioning.[15] In clinical practice and research, it is vital to emphasise patient-preferred goals, i.e. 'employment' and 'relationship status', which, although partly assessed by the GAF, merit special attention because of their impact beyond the disorder itself.

This project investigated the stability of and changes in employment and relationship status between study visits among participants in the PsyCourse Study. We wanted to investigate whether social integration is dependent on the diagnostic group or the functional level. Therefore, we aimed to test the following questions: (a) overall, do changes in employment or relationship status differ between the clinical and control group? (b) Are changes in employment and/or relationship status dependent on the diagnostic group ('affective' versus 'psychotic')? (c) Are these changes better explained by the global functioning (measured by GAF) than by the diagnostic group ('affective' versus 'psychotic') alone?

Method

Study participants

We used data (codebook version 5.0) from the longitudinal, naturalistic, multicentre PsyCourse Study, which was conducted in Germany and Austria (www.PsyCourse.de) from 2011 to 2019.[16] The PsyCourse Study aims to identifiy clinical, neurobiological and molecular genetic signatures of the longitudinal course of major psychiatric disorders, and comprises an extensive phenotyping battery as well as biomaterial at four equidistant time points over a period of 18 months (baseline, 6 months, 12 months, 18 months). A detailed description of the study design is available.[16] Diagnoses were verified using parts of the Structured Clinical Interview (SCID) for Diagnostic and Statistical Manual of Mental Disorders IV (DSM-IV),[17] and healthy controls were assessed with the German short interview for mental disorders (Mini-DIPS.[18] Eligible participants ($n = 1701$; 48.9% female, 51.1% male) were people aged younger than 65 years old at baseline who had a psychotic spectrum disorder (schizophrenia, other psychotic disorder, schizoaffective disorder; $n = 640$; 50.9%) or affective disorder (bipolar disorder, recurrent unipolar depression; $n = 620$; 49.1%) or no mental illness (healthy controls; $n = 441$). Predominantly, people with a recurrent disease were represented.

All participants gave written informed consent to participate. The study was approved by the responsible ethics committees of the Faculty of Medicine at LMU Munich (ethical approval number: 17–13). The authors assert that all procedures contributing to this work comply with the ethical standards of the relevant national and institutional committees on human experimentation, and with the Helsinki Declaration of 1975 as revised in 2013.

Phenotypic data

The phenotypic data for our project comprised information on gender, age, study site, DSM-IV diagnosis, clinical-control status, duration of illness, GAF score,[15] marital status (married/separated/single/divorced/widowed), relationship status, employment status, disability pensions because of mental illness, and employment in workshops for people with intellectual disability.[19] For better readability, we renamed data on relationship status and employment status as 'currently in a relationship' and 'currently in paid employment' respectively. For reasons of clarity, 33 participants who answered that they were occasionally or infrequently employed were counted as 'currently not in paid employment'. Possible answers and combinations were based on the German work and pension system and may not be transferable to other countries. In Germany, individuals can receive a disability pension and still be in paid employment up to a certain income threshold or be employed in a workshop for people with intellectual disability. Study participants were assessed up to four times at regular 6-month intervals. Dropouts increased between study visits (Table 1).

Statistics

For question 1, IBM SPPS statistics for MacOS version 29.0.0.0 was used to perform the statistical analyses. The analyses were performed cross-diagnostically and at four time points. First, the clinical groups were compared with the healthy control group; then, the affective and psychotic groups were each compared with the control group; and finally, the affective group was compared with the psychotic group. The dependent variables 'employment status' and 'relationship status' and the independent variable 'diagnostic group' were measured on a nominal scale. The functional level measured by the GAF was measured on an interval scale. Nominal data are expressed as frequencies, and numerical and ordinal data are expressed as means ± standard deviations, minimum and maximum values, and medians.

For questions 2 and 3, statistical analyses were performed with R Studio software, version 2023.06.1 + 524 for MacOS.[20] Besides standard packages, the multistate models (msm) package was used.[21] To compare clinical, control and diagnostic groups, a multistate model with two stages was established. Both stages were considered transient, so participants could change between them multiple times. This method allowed us to include not only subjects with complete data-sets, but also subjects who participated in at least two study visits, as the transition between two study visits was calculated. Two series of models were created: one for analysing changes of employment status by using 'currently paid employed', and one for analysing changes of relationship status by using 'currently in a relationship'. 'Yes' and 'no' were the only potential outcomes for the multistate model. The model was a Markovian model, signifying that the hazard at any given time was conditionally determined by the individual's current state, without consideration of their historical progression. The hazard ratio is a measure to compare the risk of an event occurring at any given time point in one group relative to another group, where a hazard ratio greater than 1 indicates higher risk and a hazard ratio less than 1 indicates lower risk in the clinical group compared with the control group.

The sojourn times in each state were considered to be exponentially distributed. The visit number was chosen as the time scale because there were only minor differences between this model and the one that used the exact times. We were primarily interested in the transition intensities, not state occupation probabilities. Each series contained multiple models that were adjusted for an a priori fixed set of covariates (age, gender, job or partner, diagnostic group and GAF) in different combinations to separate and analyse the impact of each covariate on the hazard ratio. Regarding the GAF models, the GAF value of the earlier of two study visits was considered. Only participants with GAF scores were included in the model used to compare the impact of the GAF score in the affective and psychotic groups and the control group.

Akaike Information Criterion (AIC) was used to compare different models adjusted for different covariates to identify the models that fit the data best and should be used going forward. Because AIC considers that a model's fit automatically improves the more information the model contains, it includes a penalty term. Hence the model with the lowest AIC is chosen.

An alpha value of 0.05 was used as the threshold for statistical significance. In this study, we investigated a number of pre-specified models for each of the two outcomes. It was our aim to investigate the effect of the clinical versus control diagnostic groups, with

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

Table 1 Overview of details of employment and relationship status and scores on the Global Assessment of Functioning (GAF) scale

		Total		Affective group		Psychotic group		Healthy control group	
Status		*N*	%	*n*	%	*n*	%	*n*	%
Currently in a relationship									
Baseline	Y	817	48.0	337	54.4	206	32.2	274	62.1
	N	768	45.1	261	42.1	383	59.8	124	28.1
	NA	116	6.8	22	3.5	51	8.0	43	9.8
6 months	Y	508	29.9	201	32.4	126	19.7	181	41.0
	N	478	28.1	160	25.8	232	36.3	86	19.5
	NA	715	42.0	259	41.8	282	44.1	174	39.5
12 months	Y	438	25.7	166	26.8	104	16.3	168	38.1
	N	427	25.1	134	21.6	198	30.9	95	21.5
	NA	836	49.1	320	51.6	338	52.8	178	40.4
18 months	Y	403	23.7	144	23.2	101	15.8	158	35.8
	N	368	21.6	99	16.0	191	29.8	78	17.7
	NA	930	54.7	377	60.8	348	54.4	205	46.5
Currently in paid employment									
Baseline	Y	759	44.6	283	45.6	204	31.9	272	61.7
	N	869	51.1	329	53.1	408	63.8	132	29.9
	NA	73	4.3	8	1.3	28	4.4	37	8.4
6 months	Y	538	31.6	187	30.2	138	21.6	213	48.3
	N	439	25.8	182	29.4	219	34.2	38	8.6
	NA	700	41.2	249	40.2	278	43.4	173	39.2
12 months	Y	469	27.6	146	23.5	114	17.8	209	47.4
	N	387	22.8	158	25.5	188	29.4	41	9.3
	NA	828	48.7	315	50.8	336	52.5	177	40.1
18 months	Y	424	24.9	123	19.8	118	18.4	183	41.5
	N	340	20.0	123	19.8	177	27.7	40	9.1
	NA	921	54.1	372	60.0	344	53.8	205	46.5
GAF score		mean	s.d.	mean	s.d.	mean	s.d.	mean	s.d.
Baseline		62.29	17.79	60.32	13.12	52.57	13.14	88.30	7.35
6 months		67.44	16.64	65	13.04	59	14.60	87	7.48
12 months		67.69	17.23	64	1380	58	14.20	87	8.65
18 months		67.11	17.68	56.70	13.48	57.03	15.46	86.07	8.86

Values of –999, representing occasionally or infrequently employed, were removed for clarity. An increasing portion of lacking data (up to 50% 'NA' answers) on relationship status, employment status and GAF was observed from baseline to the visit after 18 months. These participants can be assumed to be dropouts who did not complete all four visits; however, these participants were still included in the analysis.

adjustment for different covariates. Thus, correction for multiple testing was not required for these models.[22]

Results

Descriptive analysis

The study sample consisted of 1260 participants with affective and psychotic spectrum disorders and 441 healthy controls with a mean (s.d.) age at first interview of 39.9 (12.65) years; 48.9% were female ($n = 832$, and 51.1% male ($n = 869$). Clinical individuals were classified into two diagnostic groups: psychotic and affective. Schizophrenia ($n = 522$; 81.6%), schizoaffective disorder ($n = 100$; 15.6%), schizophreniform disorder ($n = 12$; 1.9%) and brief psychotic disorder ($n = 6$; 0.9%) formed the psychotic group. Bipolar I ($n = 427$; 68.9%), bipolar II ($n = 104$; 16.8%) and unipolar recurrent depression ($n = 89$; 14.4%) defined the affective group. Tables 1 and 2 show descriptive information and information on relationship and employment status and GAF.

Multistate models

Variable 'relationship status'

When comparing the clinical and control groups regarding the hazard ratio of switching between the two states of currently being in a relationship (yes/no), the clinical group had a significantly lower hazard (hazard ratio 0.63, 95% CI [0.44; 0.92], $P = 0.017$) for finding a new partner. The hazard of losing a partner was higher for the clinical group, but the difference was not significant (hazard ratio 1.49, 95% CI: [1.00; 2.23], $P = 0.050$).

When the model was corrected for age and gender, the hazard ratios changed compared with the previous model, in that the clinical group had a higher hazard of losing a partner (hazard ratio 2.46, 95% CI: [1.57; 3.83], $P < 0.001$); however, the hazard of finding a new partner was not significantly different between the groups (hazard ratio 0.92, 95% CI: [0.62; 1.38], $P = 0.686$).

When looking at the impact of age, the hazard ratio of losing a partner decreased per year of life (hazard ratio 0.96, 95% CI: [0.94; 0.97], $P < 0.001$) parallel to a decrease in the hazard ratio of finding a new partner (hazard ratio 0.96, 95% CI: [0.95; 0.98], $P < 0.001$). No significant difference in the hazard ratio of losing a partner was found between men and women (hazard ratio 1.00, 95% CI: [0.69; 1.44], $P = 0.993$), but men had a significantly lower hazard of finding a new partner (hazard ratio 0.53, 95% CI: [0.37; 0.75], $P < 0.001$).

When the model was corrected for currently being employed, no relevant changes of hazard ratios were observed for the control versus clinical group (corrected for age and gender). However, participants who were currently employed had a lower hazard of losing a partner (hazard ratio 0.67, 95% CI: [0.46; 0.98], $P = 0.038$) and a non-significantly higher hazard of finding a new partner (hazard ratio 1.34, 95% CI: [0.93; 1.92], $P = 0.116$) (Fig. 1).

Table 2 Descriptive characteristics of the sample

Descriptive characteristics	Clinical group	Control group	Statistics
Mean age in years (s.d.)	41.29 (11.87)	34.32 (13.06)	*T*-test; $p < 0.001$
Female (%)	570 (45.2)	262 (59.4)	χ^2; $p < 0.001$

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

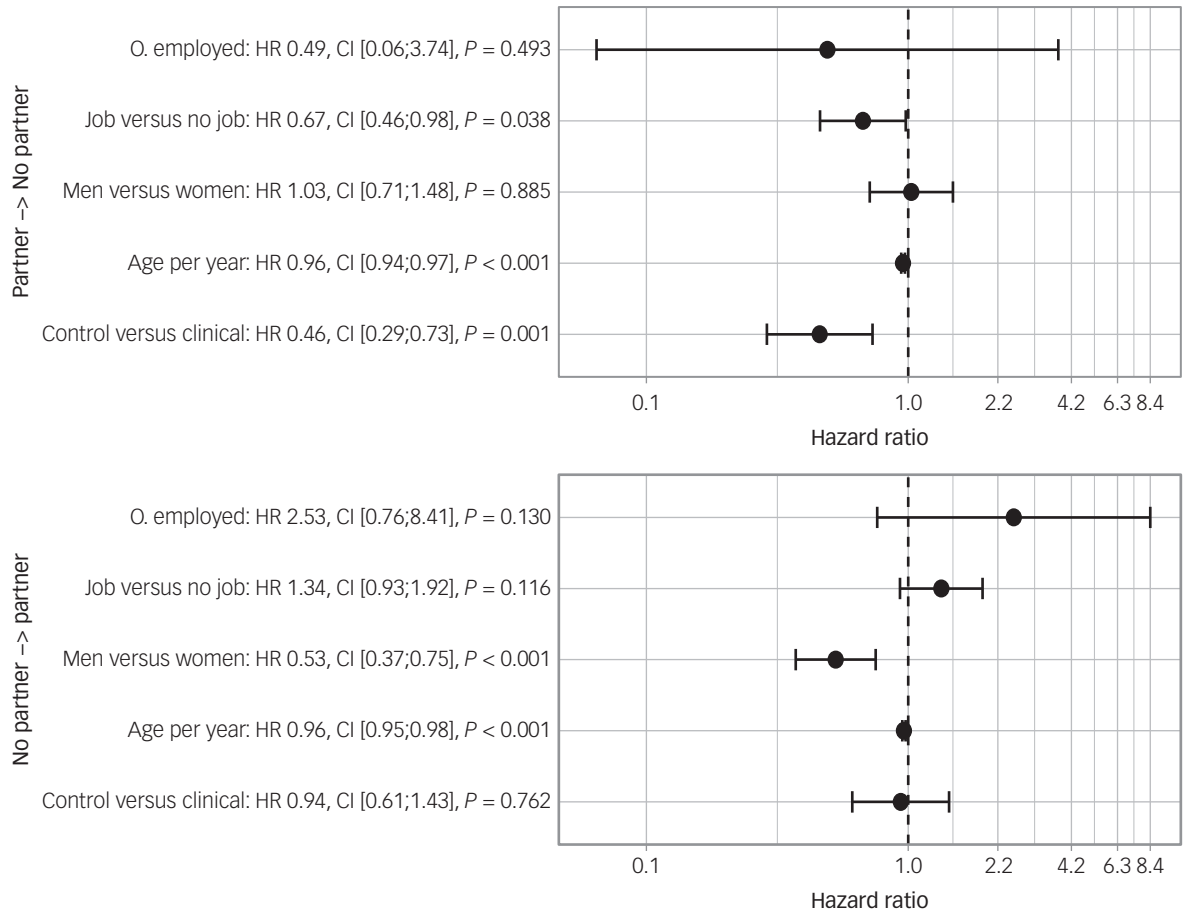

Fig. 1 Hazard ratios (HRs) of losing or finding a partner for the clinical versus control group corrected for age, gender and current paid employment. O. employed, occasionally employed.

When the affective and psychotic groups were compared with the control group, the hazard ratio of losing a partner was lower for the affective group (hazard ratio 2.69, 95% CI: [1.58; 4.60], $P < 0.001$) than for the psychotic group (hazard ratio 3.06, 95% CI: [1.76; 5.31], $P < 0.001$) compared with the control group. However, there was no significant difference in the hazard ratio of finding a new partner between the affective and psychotic groups. When the model was corrected for the GAF score, compared with the control group the effect of losing a partner decreased in both the affective (hazard ratio 1.69, 95% CI: [0.88; 3.22], $P = 0.114$) and the psychotic group (hazard ratio 1.67, 95% CI: [0.81; 3.43], $P = 0.162$). Similar results were found for the hazard ratio of finding a new partner: the control group versus the affective (hazard ratio 1.57, 95% CI: [0.86; 2.85], $P = 0.141$) and the psychotic group (hazard ratio 0.97, 95% CI: [0.51; 1.85], $P = 0.917$). (Fig. 2).

When the impact of the GAF score on the hazard ratio of losing a partner was evaluated, 10 GAF points were found to represent a change in hazard ratio of 0.78 (95% CI: [0.67; 0.91], $P = 0.001$), meaning an increase of GAF by ten points decreased the hazard by 22%. A participant with a GAF of 65 has a hazard ratio of losing a partner of 1.00, whereas a participant with a GAF of 75 has a lower hazard (hazard ratio 0.78) and a participant with a GAF of 55 has a higher hazard (hazard ratio of 1/0.78 = 1.28). No significant impact of GAF score on the hazard ratio of finding a new partner was found (hazard ratio 1.10, 95% CI: [0.95; 1.27], $P = 0.222$) (Fig. 3).

When the psychotic and affective groups were compared (corrected for age and gender), no significant difference was found between the groups for the hazard ratio of losing a partner (hazard ratio 1.09, 95% CI: [0.71; 1.68], $P = 0.682$). However, the psychotic group had a significantly lower hazard of finding a new partner (hazard ratio 0.60, 95% CI: [0.40; 0.89], $P = 0.012$).

Variable 'employment status'

When comparing the hazards of the clinical and control groups, the former group had a higher hazard of losing a job (hazard ratio 3.06, 95% CI: [2.00; 4.68], $P < 0.001$) and a lower hazard of finding a job (hazard ratio 0.39, 95% CI: [0.28; 0.56], $P < 0.001$).

After correction for age and gender, the model showed an even higher hazard for losing a job in the clinical than in the control group (hazard ratio 4.18, 95% CI: [2.67; 6.57], $P < 0.001$); however, no significant difference was found in the hazard ratio of finding a new job (hazard ratio 0.73, 95% CI: [0.49; 1.09], $P = 0.119$). When the impact of age was evaluated, the hazard ratio of losing a job decreased per year of life (hazard ratio 0.97, 95% CI: [0.96; 0.99], $P < 0.001$), as did the hazard ratio of finding a new job (hazard ratio 0.95, 95% CI: [0.94; 0.97], $pP < 0.001$). No significant difference was found between the genders in the hazard ratio of losing or finding a job.

Current relationship status was not found to have any significant effects on losing or finding a job (Fig. 4).

When the affective and psychotic groups were compared with the control group, a lower hazard ratio of losing a job was found for the affective versus control group comparison (hazard ratio 3.43, 95% CI: [2.04; 5.75], $P < 0.001$) than for the psychotic versus control group comparison (hazard ratio 4.11, 95% CI: [2.45; 6.90],

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

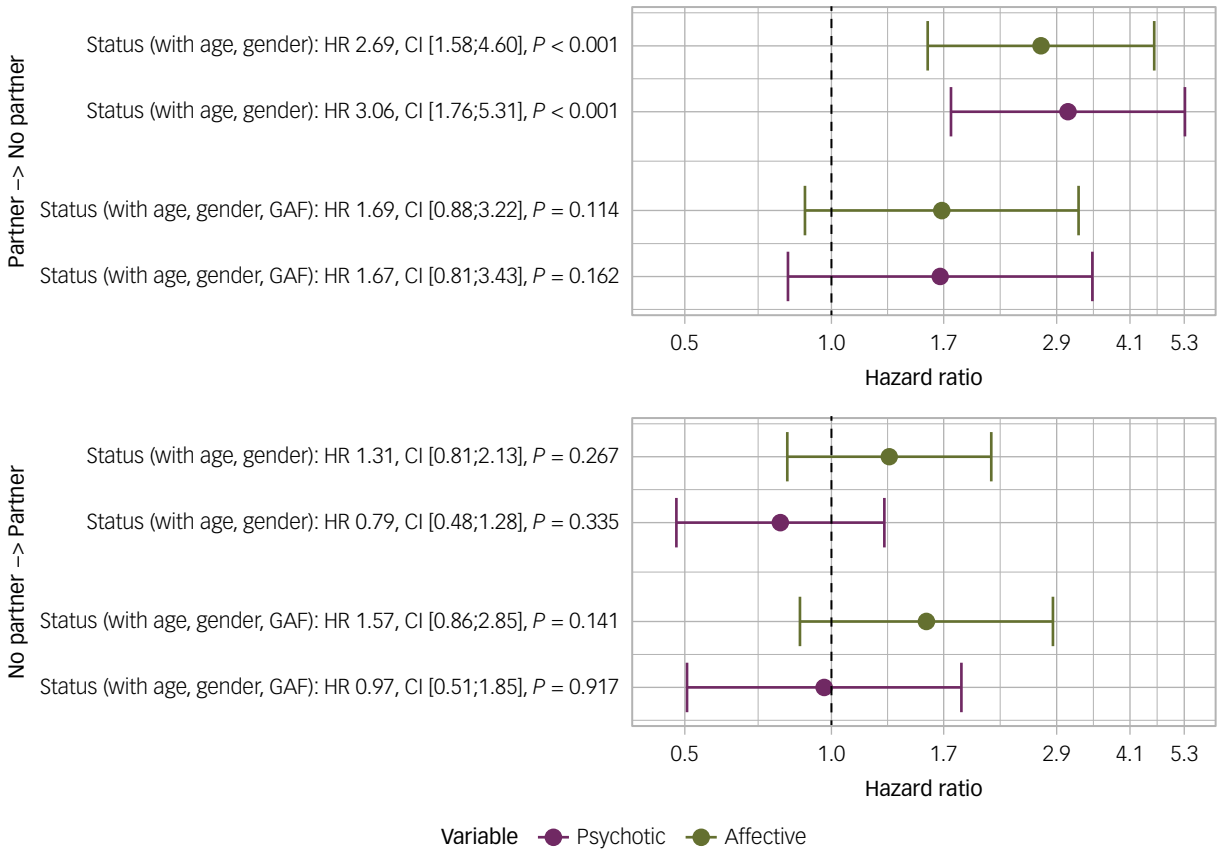

Fig. 2 Impact of the Global Assessment of Functioning (GAF) scale score on losing or finding a partner. HR, hazard ratio.

$P < 0.001$). The psychotic group had a significantly lower hazard of finding a new job compared with the control group (hazard ratio 0.53, 95% CI: [0.33; 0.85], $P = 0.009$). When the models were corrected for GAF, the results remained significant, and a decreased hazard ratio of losing a job was observed for the comparisons of the affective versus control group (hazard ratio 2.07, 95% CI: [1.14; 3.75], $P = 0.016$) and the psychotic versus control group (hazard ratio 2.05, 95% CI: [1.07; 3.94], $P = 0.031$) (Fig. 5).

When the impact of GAF on the hazard ratios of losing a job was evaluated, 10 GAF points were found to represent a hazard ratio of 0.77 (95% CI: [0.67; 0.89], $P < 0.001$), meaning an increase of GAF by 10 points decreased the hazard by 23%. A participant with a GAF score of 65 had a hazard ratio of losing a job of 1.00, one with a GAF score of e.g. 75 had a lower hazard ratio of losing a job (0.77) and one with a GAF score of 55 had a higher hazard ratio of losing a job (1/0.77 = 1.30). No significant effect of GAF score was found

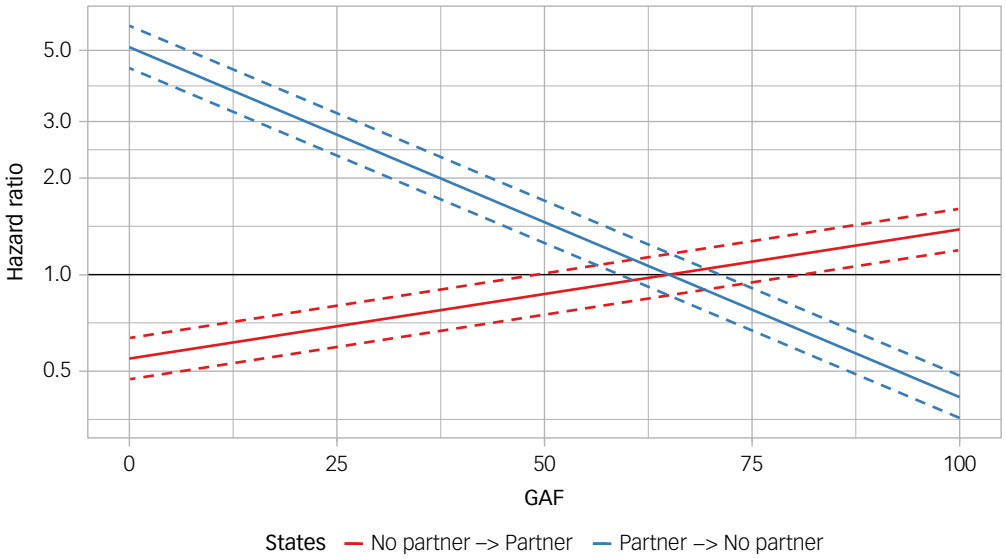

Fig. 3 Correlation between the Global Assessment of Functioning (GAF) scale score and the hazard ratio for losing or finding a partner.

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

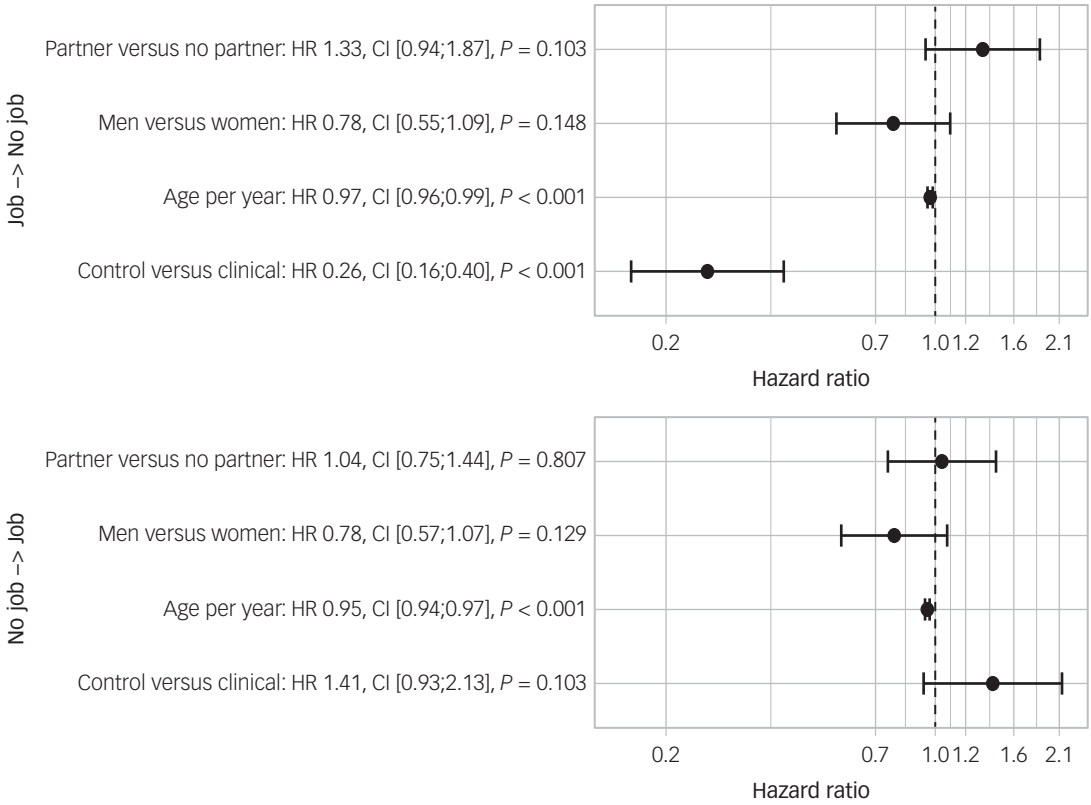

Fig. 4 Hazard ratios (HRs) for losing or finding a new job for control versus clinical group corrected for age, gender and currently being in a relationship.

on the hazard ratio of finding a new job (hazard ratio 1.14 per 10 points, 95% CI [1.00; 1.29], $P = 0.051$) (Fig. 6). When the hazards of losing or finding a job were compared between the psychotic and affective groups, no significant differences were found.

AIC

AIC was applied to validate question 3, i.e. changes are better explained by the functional level than the diagnostic group alone. AIC corrects for the fact that models' fit improves, the more variables they contain.

For relationship status, model 2 with diagnostic groups and GAF score had a lower AIC than models 1 and 3, and was therefore considered the best model. The differences between models 2 and 3 were comparatively small. Regarding employment status, model 2 with diagnostic groups and GAF score had the lowest AIC, i.e. was considered best, model 3 had a slightly higher AIC and model 1 without GAF score was considered worst (Table 3).

Discussion

Our study provides insights into the relationship and employment dynamics of individuals with affective and psychotic disorders compared with healthy controls. We addressed the research question whether, being diagnosed with an affective or psychotic disorder, an individual's relationship and employment status change compared with those of a healthy control. Furthermore, we investigated whether differences were affected by the diagnostic group or the functional level measured by the GAF score.

Regarding relationship dynamics, we can answer our first research question as follows: our results indicate that people in the clinical group had a significantly higher hazard of losing partners and jobs than the healthy control group. The impact was more pronounced among people in the psychotic group than among those in the affective group. Our results align with existing research indicating that conditions such as schizophrenia and bipolar disorder can hinder social interactions and contribute to social withdrawal.[23,24] Symptoms such as mania, paranoia, risky sexual behaviour and medication-related sexual dysfunction can further exacerbate difficulties in maintaining relationships.[25–28] Noteworthy is that the hazard of losing a partner was higher in the clinical group, which may indicate that pre-existing relationships in particular are at risk and shorter than those in controls, a hypothesis that is supported by the high divorce rates of individuals with mental disorders.[4,29] Thus, the results emphasise the need for interventions that stabilise pre-existing relationships. Involving partners in therapy and educating family members can play a crucial role in fostering relationship stability and is recommended by treatment guidelines.[30,31] Additionally, interventions such as social skills training and cognitive remediation therapy (CRT) can equip individuals with tools to improve their relational capabilities and communication.[32–34] Our findings suggest that individuals with psychotic and affective spectrum disorders, and especially the group with psychotic disorders, may also encounter challenges in initiating new relationships when compared with their healthy counterparts, which answers our second research question. However, it should be noted that this effect appears to be less pronounced than the hazard of relationship dissolution. A possible explanation is that the initial attraction to someone and the process of searching for a partner may not substantially differ between patients and healthy individuals. Furthermore, many people are hesitant to divulge their psychiatric history to potential partners and often prefer a staged disclosure.[35]

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

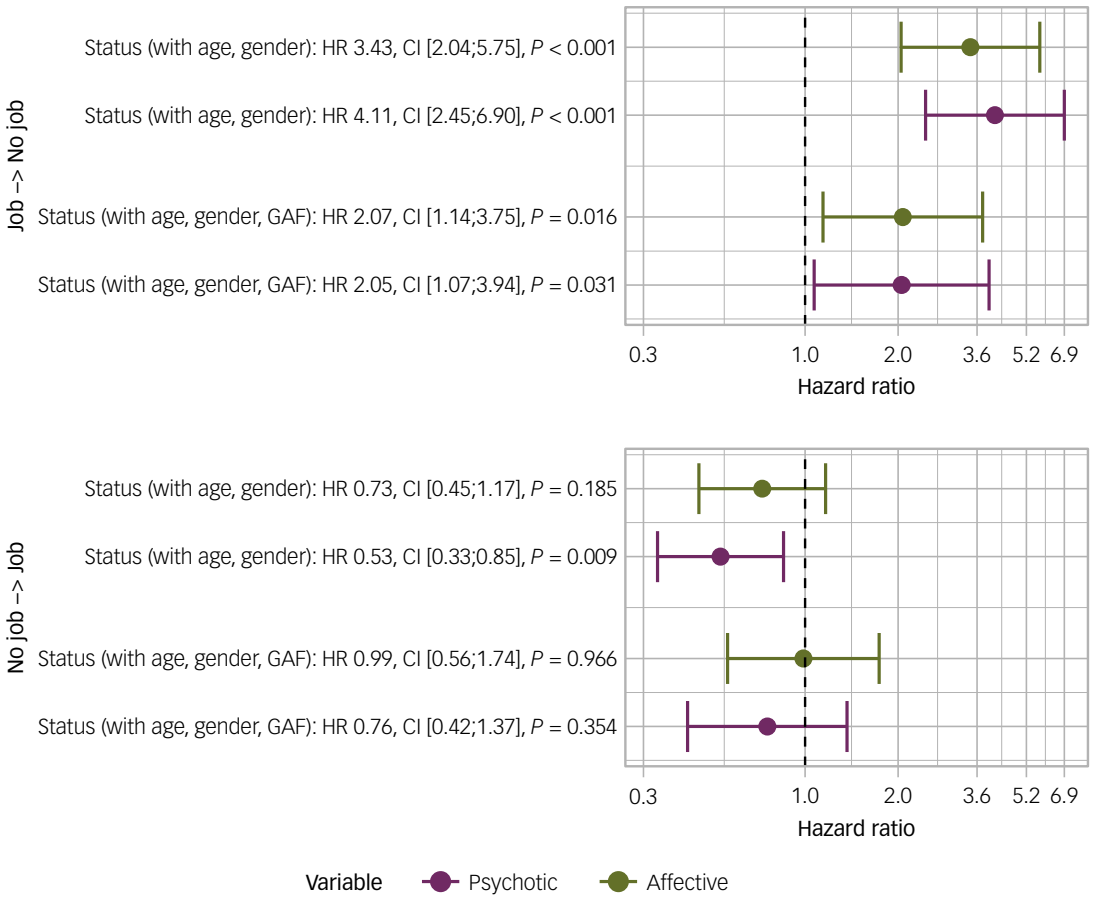

Fig. 5 Impact of the Global Assessment of Functioning (GAF) scale score on losing or finding a job. HR, hazard ratio.

Nevertheless, this cautious approach could inadvertently contribute to the brevity of relationships and the higher frequency of breakups. Yet it is important to note that not every relationship breakup should be viewed negatively, e.g. leaving an abusive relationship can be a positive personal development.

Addressing our third research question, our findings suggest a correlation between lower GAF scores and a heightened hazard of relationship and employment loss. Notably, participants in the psychotic group exhibited lower functional levels than those in the affective group, which may potentially explain the former

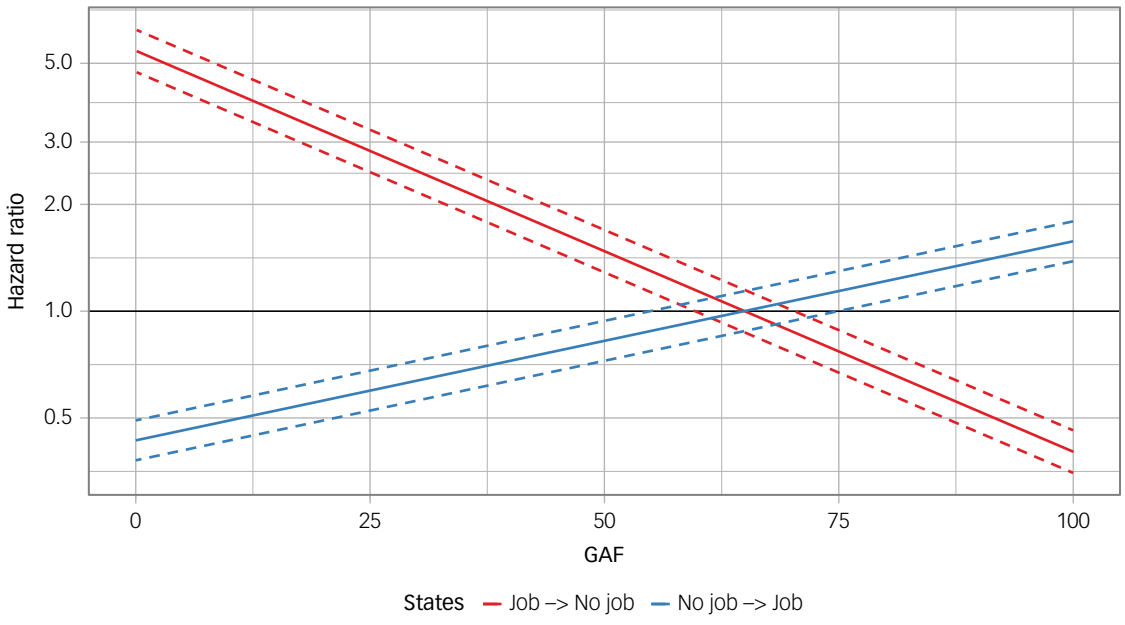

Fig. 6 Correlation between the Global Assessment of Functioning (GAF) scale score and the hazard ratios of losing or finding a job.

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

Table 3 Akaike Information Criterion (AIC) for different relationship and employment models

	Model 1	Model 2	Model 3
Diagnostic group	X	X	
Control versus clinical group			X
Age	X	X	X
Gender	X	X	X
GAF		X	X
Relationship models			
AIC	1504.45	1498.98	1499.44
Employment models			
AIC	1748.07	1732.29	1733.84

GAF, Global Assessment of Functioning.
X states the included covariates in model 1, model 2, model 3.

group's increased vulnerability to these challenges. Relationships may be particularly vulnerable in individuals with severely debilitating disorders or during periods of high symptom burden. Higher levels of functioning, which are usually associated with fewer symptoms, may reduce the hazard of losing a partner; however, global functioning and relationship stability are mutually dependent. This finding also emphasiszes the potential benefits of providing effective treatment and minimising adverse treatment effects to enhance people's functional outcome and hence their relationship and job stability.

In terms of employment and answering research questions one to three for this area, our study similarly revealed an increased hazard of job loss among people with affective and psychotic spectrum disorders, although the effect was partially conditioned by the functional level. Importantly, this association persisted after controlling for GAF scores. Notably, participants with psychotic disorders had greater difficulty in finding new employment than healthy controls, whereas this impairment was not evident in the affective disorder group. This effect might partially depend on higher cognitive deficits in participants with psychotic disorders.[36] Another possible reason for this might be that biogenetic explanations and illness labels, particularly for schizophrenia, may inadvertently reinforce public perceptions of dangerousness, unpredictability and desire for social distance, potentially leading employers and colleagues to harbour increased fear and stigma towards these individuals in the workplace.[37,38] The findings underscore the significance of initiatives to support job retention and assist people in finding employment, particularly individuals with psychotic disorders. Effective symptom management and tailored interventions, e.g. individual placement support (IPS), CRT or computer-based cognitive training programs can aid in enhancing employment prospects.[39,40] In a comprehensive analysis of 28 randomised controlled trials involving approximately 6500 participants, it was observed that 55% of people engaged in IPS initiatives successfully obtained employment within the general labour market, compared with 25% in predominantly prevocational training procedures.[41] Besides the success rates, IPS is assumed to be cost-efficient.[42,43] Research on the effects of psychopharmacological treatment on employment remains scarce. There is evidence that antipsychotic medication adherence in combination with cognitive remediation can improve cognitive deficits and work/school functioning in early schizophrenia, particularly when combined with supported employment,[44] yet there is a critical lack of randomised controlled trials on the direct effects of psychopharmacological treatment on work productivity. Moreover, the potential adverse effects of antipsychotic medications, such as sedation,[45] may negatively impact work productivity, highlighting the need for more comprehensive research that considers both the beneficial and detrimental effects of these treatments on employment and functional outcomes.

A key aspect to consider in our discussion is the impact of stigma in the workplace. Our findings reveal that functional level alone does not fully account for the heightened hazard of job loss among individuals with affective and psychotic disorders. Even with normal functional levels, the hazard of job loss persists. This might be an effect caused by stigmatisation. Stigmatisation is known to be a particularly pronounced phenomenon among people with schizophrenia.[46] Both anticipated and experienced discrimination limit opportunities for individuals with mental disorders and are critical factors influencing employment outcomes,[47] underscoring the imperative for comprehensive efforts to combat stigma in work environments. Encouraging direct interactions between individuals with and without mental illness can foster destigmatisation and cultivate a healthier workplace culture.[48]

Additionally, it is important to mention that the heightened vulnerability in facing the risk of job and relationship loss surpasses the challenges of seeking new employment or partners. This underscores the critical importance within the treatment process to prioritise the stabilisation of both romantic and occupational relationships, since each instance of separation, job displacement but also re-marriage belongs to major life events and can significantly impact the stability of one's mental health.[49]

Besides the valuable insights gained from this study and its notable strengths, such as the substantial sample size and well-balanced diagnostic groups, certain limitations warrant consideration. The participants' functioning and its implications for employment and relationship status were assessed with the GAF scale, but the GAF scale itself encompasses both employment and social relationship status. This overlap could potentially reinforce the observed impacts attributed to the GAF score. Nevertheless, it is crucial to acknowledge that beyond employment and relationship status, the GAF score is influenced by a multitude of factors, including concentration ability, insomnia, anger, communication skills and various symptoms. Notably, factors such as job loss and relationship separations may be influenced not only by reduced functioning, but also by external factors such as stigma. Additionally, the absence of a standardised questionnaire for GAF introduces subjectivity, leading to potential variability in how different interviewers perceive and prioritise the various dimensions of GAF, potentially resulting in divergent ratings. As a further limitation, it is important to highlight that this study did not account for medication effects, so any potential positive or negative impacts of specific medications on employment, relationships or overall functioning remain unexplored. An absence of information regarding the reasons behind participants' job losses or relationship changes is also a limitation. Access to such insights could offer a deeper understanding and serve as a basis for targeted support strategies. Another limitation is the notable dropout rate 12 and 18 months after enrolment. Although efforts were made to incorporate all available data into the statistical analyses, the substantial dropout rate must be acknowledged as a potential source of bias. The reasons for dropout are diverse and speculative, ranging from participants achieving remission or recovery and consequently discontinuing participation, to exacerbated disorders impeding their adherence to appointments, and these varying circumstances could have introduced both positive and negative biases in hazard estimates within this study. A significant proportion of the dropouts were outpatients (76.8% at 12 months and 73.1% at 18 months), a group that presents challenges in tracking their status and ensuring their continued participation. Moreover, it is well documented that dropout rates tend to rise over the course of longitudinal studies. This phenomenon is especially pronounced in cases where

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

participants do not anticipate tangible advantages stemming from their participation.

In conclusion, our study demonstrates the elevated hazard of relationship and employment disruptions among individuals diagnosed with affective and psychotic disorders. The specific disorder and functional level play roles in mediating these challenges. Given the well-established negative consequences of unemployment and relationship instability on mental health outcomes, our findings highlight the urgency of developing strategies to support functional improvement and empower individuals to attain their goals. Further research in this area will be pivotal in enhancing the quality of life and recovery rates for individuals grappling with these disorders.

Fanny Senner, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and Centres for Psychiatry Suedwuerttemberg, Ravensburg, Germany; **Lisa Kerkhoff**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Kristina Adorjan**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and University Hospital of Psychiatry and Psychotherapy, University of Bern, Switzerland; **Michael Lauseker**, Institute for Medical Information Processing, Biometry, and Epidemiology, Faculty of Medicine, LMU Munich, Germany; **Monika Budde**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Maria Heilbronner**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Janos L. Kalman**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Mojtaba Oraki Kohshour**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; and Department of Immunology, Faculty of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran; **Sergi Papiol**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and Max Planck Institute of Psychiatry, Munich, Germany; **Daniela Reich-Erkelenz**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Sabrina K. Schaupp**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Eva C. Schulte**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; Department of Psychiatry and Psychotherapy, University Hospital Bonn, Faculty of Medicine, University of Bonn, Germany; and Institute of Human Genetics, University Hospital Bonn, Faculty of Medicine, University of Bonn, Germany; **Thomas Vogl**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Ion-George Anghelescu**, Department of Psychiatry and Psychotherapy, Mental Health Institute Berlin, Germany; **Volker Arolt**, Institute for Translational Psychiatry, University of Münster, Germany; **Bernhardt T. Baune**, Department of Psychiatry, University of Münster, Germany; Department of Psychiatry, Melbourne Medical School, The University of Melbourne, Australia; and The Florey Institute of Neuroscience and Mental Health, The University of Melbourne, Australia; **Udo Dannlowski**, Institute for Translational Psychiatry, University of Münster, Germany; **Nina Dalkner**, Division of Psychiatry and Psychotherapeutic Medicine, Research Unit for Bipolar Affective Disorder, Medical University of Graz, Austria; **Detlef E. Dietrich**, AMEOS Clinical Center Hildesheim, Hildesheim, Germany; Center for Systems Neuroscience (ZSN), Hannover, Germany; and Department of Psychiatry, Social Psychiatry and Psychotherapy, Medical School of Hannover, Germany; **Andreas J. Fallgatter**, Department of Psychiatry and Psychotherapy, Tübingen Center for Mental Health (TüCMH), University of Tübingen, Germany; and DZPG (German Center for Mental Health), partner site Tübingen, Tübingen, Germany; **Christian Figge**, Karl-Jaspers Clinic, European Medical School Oldenburg-Groningen, Oldenburg, Germany; **Carsten Konrad**, Department of Psychiatry and Psychotherapy, Agaplesion Diakonieklinikum, Rotenburg, Germany; **Fabian U. Lang**, Department of Psychiatry II, Ulm University, Bezirkskrankenhaus Günzburg, Günzburg, Germany; **Jens Reimer**, Department of Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; **Eva Z. Reinighaus**, Division of Psychiatry and Psychotherapeutic Medicine, Research Unit for Bipolar Affective Disorder, Medical University of Graz, Austria; **Max Schmauß**, Department of Psychiatry, Psychotherapy, and Psychosomatics, Faculty of Medicine, University of Augsburg, Germany; **Andrea Schmitt**, Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and Laboratory of Neuroscience (LIM27), Institute of Psychiatry, University of São Paulo, Brazil; **Simon Senner**, Center for Psychiatry Reichenau, Academic Hospital University of Konstanz, Germany; **Carsten Spitzer**, Department of Psychosomatic Medicine and Psychotherapy, University Medical Center Rostock, Germany; **Jörg Zimmermann**, Psychiatrieverbund Oldenburger Land gGmbH, Karl-Jaspers-Klinik, Bad Zwischenahn, Germany; **Alkomiet Hasan**, Department of Psychiatry and Psychotherapy, University Medical Center Hamburg-Eppendorf, Hamburg, Germany; and Clinic for Psychiatry and Psychotherapy, Clinical Center Werra-Meißner, DZPG (German Center for Mental Health), partner site München/Augsburg, Eschwege, Germany; **Peter Falkai**, Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and Clinic for Psychiatry and Psychotherapy, Clinical Center Werra-Meißner, DZPG (German Center for Mental Health), partner site München/Augsburg, Eschwege, Germany; **Thomas G. Schulze**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; Clinic for Psychiatry and Psychotherapy, Clinical Center Werra-Meißner, DZPG (German Center for Mental Health), partner site München/Augsburg, Eschwege, Germany; Department of Psychiatry and Behavioral Sciences, SUNY Upstate Medical University, Syracuse, USA; and Department of Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, USA; **Urs Heilbronner**, Institute of Psychiatric Phenomics and Genomics (IPPG), LMU University Hospital, LMU Munich, Germany; **Sophie-Kathrin Greiner**, Department of Psychiatry and Psychotherapy, LMU University Hospital, LMU Munich, Germany; and Department of Psychiatry, Psychotherapy, and Psychosomatics, Faculty of Medicine, University of Augsburg, Germany

Correspondence: Fanny Senner. Email: fanny.senner@med.uni-muenchen.de

First received 14 Feb 2024, final revision 1 Oct 2024, accepted 4 Oct 2024

Data availability

The data that support the findings of this study are available on request from the corresponding author, F.S. The data are not publicly available because of the privacy of research participants.

Acknowledgement

The authors would like to thank all participants in this study and the PsyCourse core team for their support.

Author contributions

F.S., S.-K.G.: conception of work, acquisition of data, analysis and interpretation of data; L.K.: analysis and interpretation of data; M.L.: analysis and interpretation of data, critical review for important intellectual content; K.A., M.B., M.H., U.H., J.L.K., S.P., S.K.S., E.C.S., T.V., I.-G.A., V.A., B.T.B., U.D., N.D., D.E.D., A.J.F., C.F., C.K., F.U.L., J.R., E.Z.R., M.S., A.S., C.S., J.Z.: acquisition of data, critical review for important intellectual content; A.H., M.O.K., D.R.-E., S.S.: critical review for important intellectual content; P.F.: conception of PsyCourse Study, acquisition of data, critical review for important intellectual content. T.G.S.: conception of PsyCourse Study, acquisition of data. All authors approved the final version to be published.

Funding

T.G.S. and P.F. are supported by the Deutsche Forschungsgemeinschaft (DFG) within the framework of the projects www.kfo241.de and www.PsyCourse.de (SCHU 1603/4–1, 5–1, 7–1; FA241/16–1). T.G.S. is further supported by the Dr. Lisa Oehler Foundation (Kassel, Germany), IntegraMent (01ZX1614K), BipoLife (01EE1404H), e:Med Program (01ZX1614K), GEPI-BIOPSY (01EW2005) and Muliobio (01EW2009). E.C.S. is supported by the Munich Clinician Scientist Program (MCSP). This study was endorsed by DZPG (German Center for Mental Health) (partner sites: München/Ausburg). U.H. was supported by European Union's Horizon 2020 Research and Innovation Programme (PSY-PGx, grant agreement No 945151) and the Deutsche Forschungsgemeinschaft (DFG, German Research Foundation, project number 514201724).

Declaration of interest

T.G.S. is a member of the *BJPsych Open* editorial board; he did not take part in the review or decision-making process of this paper. I.-G.A. has been a consultant and/or has received honoraria from Aristo, Janssen, Merck, Recordati and Schwabe. P.F. was an honorary speaker for AstraZeneca, Bristol Myers Squibb, Lilly, Essex, GE Healthcare, GlaxoSmithKline, Janssen-Cilag, Lundbeck, Otsuka, Pfizer, Servier and Takeda, and a member of the advisory boards of Janssen-Cilag, AstraZeneca, Lilly, Lundbeck, Richter, Recordati and Boehringer-Ingelheim. S.-K.G. is an advisor to the GOLDKIND Foundation. A.H. was a member of the advisory boards of Boehringer-Ingelheim, Lundbeck, Janssen, Otsuka, Rovi and Recordati, and received paid speakerships by these companies as well as by AbbVie and Advanz; he is editor of the German schizophrenia guideline. C.K. received fees for an educational programme from Aristo Pharma, Janssen-Cilag, Lilly, MagVenture, Servier and Trommsdorff, and travel support and speaker honoraria from Aristo Pharma, Janssen-Cilag, Lundbeck, Neuraxpharm and Servier. S.S. is a member of the advisory board of Wellster Healthtech and nilo.health, and founder of Brains Work. J.Z. was a member of the advisory boards for Biogen and Idorsia. All other authors report no conflicts of interest.

References

1 Bridges JF, Beusterien K, Heres S, Such P, Sánchez-Covisa J, Nylander A-G, et al. Quantifying the treatment goals of people recently diagnosed with schizophrenia using best–worst scaling. *Patient Prefer Adherence* 2018; **12**: 63–70.

2 Emsley R, Chiliza B, Asmal L, Lehloenya K. The concepts of remission and recovery in schizophrenia. *Curr Opin Psychiatry* 2011; **24**: 114–21.

3 Ajnakina O, Stubbs B, Francis E, Gaughran F, David AS, Murray RM, et al. Employment and relationship outcomes in first-episode psychosis: a systematic review and meta-analysis of longitudinal studies. *Schizophr Res* 2021; **231**: 122–33.

4 Grover S, Nehra R, Thakur A. Bipolar affective disorder and its impact on various aspects of marital relationship. *Ind Psychiatry J* 2017; **26**: 114.

5 Thara R, Srinivasan TN. Outcome of marriage in schizophrenia. *Soc Psychiatry Psychiatr Epidemiol* 1997; **32**: 416–20.

6 Nyer M, Kasckow J, Fellows I, Lawrence EC, Golshan S, Solorzano E, et al. The relationship of marital status and clinical characteristics in middle-aged and older patients with schizophrenia and depressive symptoms. *Ann Clin Psychiatry* 2010; **22**: 172–9.

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press

7 Christensen TN, Wallstrøm IG, Eplov LF, Laursen TM, Nordentoft M. Incidence rates and employment trends in schizophrenia spectrum disorders, bipolar affective disorders and recurrent depression in the years 2000–2013: a Danish nationwide register-based study. *Nord J Psychiatry* 2021; **76**: 1–8.

8 World Health Organization (WHO). *WHO Guidelines on Mental Health at Work*. WHO, 2022 (http://www.ncbi.nlm.nih.gov/books/NBK586364/).

9 Dunn EC, Wewiorski NJ, Rogers ES. The meaning and importance of employment to people in recovery from serious mental illness: results of a qualitative study. *Psychiatr Rehabil J* 2008; **32**: 59–62.

10 Marwaha S, Johnson S. Schizophrenia and employment. *Soc Psychiatry Psychiatr Epidemiol* 2004; **39**: 337–49.

11 Teixeira C, Mueser KT, Rogers ES, McGurk SR. Job endings and work trajectories of persons receiving supported employment and cognitive remediation. *Psychiatr Serv* 2018; **69**: 812–8.

12 Andreasen NC, Carpenter WT, Kane JM, Lasser RA, Marder SR, Weinberger DR. Remission in schizophrenia: proposed criteria and rationale for consensus. *Am J Psychiatry* 2005; **162**: 441–9.

13 Correll CU. Using patient-centered assessment in schizophrenia care: defining recovery and discussing concerns and preferences. *J Clin Psychiatry* 2020; **81**: MS19053BR2C.

14 Harvey PD. Defining and achieving recovery from bipolar disorder. *J Clin Psychiatry* 2006; **67**(Suppl 9): 14–8 discussion 36–42.

15 Aas IM. Guidelines for rating global assessment of functioning (GAF). *Ann Gen Psychiatry* 2011; **10**: 2.

16 Budde M, Anderson-Schmidt H, Gade K, Reich-Erkelenz D, Adorjan K, Kalman JL, et al. A longitudinal approach to biological psychiatric research: the PsyCourse study. *Am J Med Genet B Neuropsychiatr Genet* 2019; **180**: 89–102.

17 Wittchen H-U, Zaudig M, Fydrich T. *SKID. Strukturiertes Klinisches Interview für DSM-IV. Achse I und II. Handanweisung*. Hogrefe, 1997.

18 Margraf J. *Mini-DIPS: Diagnostisches Kurz-interview bei psychischen Störungen* [Mini-DIPS: Short diagnostic interview for mental disorders]. Springer, 1994 (http://dx.doi.org/10.1007/978-3-662-06753-6).

19 Heilbronner U, Adorjan K, Anderson-Schmidt H, Budde M, Comes AL, Gade K, et al. *The PsyCourse Codebook*, Version 6.0, 2023 (https://doi.org/10.5282/UBM/DATA.199).

20 R Core Team. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, 2022 (https://www.R-project.org/).

21 Jackson CH. Multi-State models for panel data: the **msm** package for *R*. *J Stat Softw* 2011; **38**: 1–28.

22 Perneger TV. What's wrong with Bonferroni adjustments. *Br Med J* 1998; **316**: 1236–8.

23 Dziwota E, Stepulak MZ, Włoszczak-Szubzda A, Olajossy M. Social functioning and the quality of life of patients diagnosed with schizophrenia. *Ann Agric Environ Med AAEM* 2018; **25**: 50–5.

24 Pascual-Sanchez A, Jenaro C, Montes JM. Understanding social withdrawal in euthymic bipolar patients: the role of stigma. *Psychiatry Res* 2020; **284**: 112753.

25 Kopeykina I, Kim H-J, Khatun T, Boland J, Haeri S, Cohen LJ, et al. Hypersexuality and couple relationships in bipolar disorder: a review. *J Affect Disord* 2016; **195**: 1–14.

26 Zuncheddu C, Carpiniello B. Sexual dysfunctions and bipolar disorder: a study of patients submitted to a long-term lithium treatment. *Clin Ter* 2006; **157**: 419–24.

27 Liu D, Liu S, Xiu M, Deng H, Guo H, Liu W, et al. Sexual dysfunction in chronically medicated male inpatients with schizophrenia: prevalence, risk factors, clinical manifestations, and response to sexual arousal. *Front Psychiatry* 2021; **12**: 761598.

28 Montejo AL, Montejo L, Navarro-Cremades F. Sexual side-effects of antidepressant and antipsychotic drugs. *Curr Opin Psychiatry* 2015; **28**: 418–23.

29 Idstad M, Torvik FA, Borren I, Rognmo K, Røysamb E, Tambs K. Mental distress predicts divorce over 16 years: the HUNT study. *BMC Public Health* 2015; **15**: 320.

30 Gaebel W, Hasan A, Falkai P. *S3-Leitlinie Schizophrenie*. Springer-Verlag, 2019.

31 Pfennig A, Bschor T, Baghai T, Bräunig P, Brieger P, Falkai P, et al. S3-Leitlinie zur Diagnostik und Therapie Bipolarer Störungen. *Nervenarzt* 2012; **83**: 568–86.

32 Rajji TK, Mamo DC, Holden J, Granholm E, Mulsant BH. Cognitive-behavioral social skills training for patients with late-life schizophrenia and the moderating effect of executive dysfunction. *Schizophr Res* 2022; **239**: 160–7.

33 Strawbridge R, Tsapekos D, Hodsoll J, Mantingh T, Yalin N, McCrone P, et al. Cognitive remediation therapy for patients with bipolar disorder: a randomised proof-of-concept trial. *Bipolar Disord* 2021; **23**: 196–208.

34 Bellani M, Ricciardi C, Rossetti MG, Zovetti N, Perlini C, Brambilla P. Cognitive remediation in schizophrenia: the earlier the better? *Epidemiol Psychiatr Sci* 2019; **29**: e57.

35 Seeman MV. When and how should I tell? Personal disclosure of a schizophrenia diagnosis in the context of intimate relationships. *Psychiatr Q* 2013; **84**: 93–102.

36 Keefe RSE. The longitudinal course of cognitive impairment in schizophrenia: an examination of data from premorbid through posttreatment phases of illness. *J Clin Psychiatry* 2014; **75**(Suppl 2): 8–13.

37 Read J, Haslam N, Sayce L, Davies E. Prejudice and schizophrenia: a review of the 'mental illness is an illness like any other' approach. *Acta Psychiatr Scand* 2006; **114**: 303–18.

38 Haslam N, Kvaale EP. Biogenetic explanations of mental disorder: the mixed-blessings model. *Curr Dir Psychol Sci* 2015; **24**: 399–404.

39 de Winter L, Couwenbergh C, van Weeghel J, Sanches S, Michon H, Bond GR. Who benefits from individual placement and support? a meta-analysis. *Epidemiol Psychiatr Sci* 2022; **31**: e50.

40 Christensen TN, Wallstrøm IG, Stenager E, Bojesen AB, Gluud C, Nordentoft M, et al. Effects of individual placement and support supplemented with cognitive remediation and work-focused social skills training for people with severe mental illness: a randomized clinical trial. *JAMA Psychiatry* 2019; **76**: 1232–40.

41 Bond GR, Drake RE, Becker DR. An update on individual placement and support. *World Psychiatry* 2020; **19**: 390–1.

42 Nischk D, Herwig U, Senner S, Rockstroh B. Effektivität und Kosteneffizienz von Individual Placement and Support (IPS) in Deutschland – eine Vergleichsstudie bei Menschen mit Psychosen. *Psychiatr Prax* 2023; **51**: a-2165–8728.

43 Drake RE, Bond GR, Goldman HH, Hogan MF, Karakus M. Individual placement and support services boost employment for people with serious mental illnesses, but funding Is lacking. *Health Aff (Millwood)* 2016; **35**: 1098–105.

44 Nuechterlein KH, Ventura J, Subotnik KL, Gretchen-Doorly D, Turner LR, Casaus LR, et al. A randomized controlled trial of cognitive remediation and long-acting injectable risperidone after a first episode of schizophrenia: improving cognition and work/school functioning. *Psychol Med* 2022; **52**: 1517–26.

45 Miller DD. Atypical antipsychotics: sleep, sedation, and efficacy. *Prim Care Companion J Clin Psychiatry* 2004; **6**: 3–7.

46 Valery K-M, Prouteau A. Schizophrenia stigma in mental health professionals and associated factors: a systematic review. *Psychiatry Res* 2020; **290**: 113068.

47 Farrelly S, Clement S, Gabbidon J, Jeffery D, Dockery L, Lassman F, et al. Anticipated and experienced discrimination amongst people with schizophrenia, bipolar disorder and major depressive disorder: a cross sectional study. *BMC Psychiatry* 2014; **14**: 157.

48 Thornicroft G, Sunkel C, Alikhon Aliev A, Baker S, Brohan E, El Chammay R, et al. The Lancet Commission on ending stigma and discrimination in mental health. *Lancet* 2022; **400**: 1438–80.

49 Horesh N, Iancu I. A comparison of life events in patients with unipolar disorder or bipolar disorder and controls. *Compr Psychiatry* 2010; **51**: 157–64.

https://doi.org/10.1192/bjo.2024.816 Published online by Cambridge University Press