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Assessing the professional social capital of psychiatrists: development of the Resource Generator for Psychiatrists (RG-Psy)

Juliette Lagreula[1,2*], Vincent Lorant[3] and Olivia Dalleur[1,4]

Abstract

Background In the field of psychiatry, the dissemination of clinical innovations greatly depends on the social capital of clinicians. An instrument specifically aimed at measuring their professional social capital therefore needs to be developed.

Methods This survey was conducted to develop and validate the Resource Generator for Psychiatrists, an 11-item questionnaire measuring the social capital of psychiatrists. The online questionnaire was administered through a link sent by e-mail to all psychiatrists and residents in psychiatry licensed to work in Belgium, after excluding ineligible psychiatrists. A total of 1618 psychiatrists or residents were reached. An exploratory factor analysis was conducted. Internal consistency was assessed using Pearson's correlation, item-total correlation and Cronbach's alpha. Test-retest reliability was also measured. Multivariable linear regression analysis assessed the association between the total score of the social capital and psychiatrist demographics.

Results A total of 196 psychiatrists responded to the survey (response rate: 12.1%). The Resource Generator for Psychiatrists showed a normal distribution with a mean of 23.6 (SD = 15.5), good test-retest reliability (ICC = 0.81) and a good total Cronbach's alpha (0.74). Exploratory factor analysis revealed two main subtypes in psychiatrists' social capital: "Resources for the clinician" and "Resources for the professional", with a Cronbach's alpha of 0.62 and 0.7 respectively. Clinicians attending institutional seminars ($\beta = 5.52$, SE = 2.2, $p = .013$) and working in multidisciplinary settings, such as hospitals ($\beta = 4.75$, SE = 2.06, $p = .023$) or a mobile team ($\beta = 8.75$, SE = 3.52, $p = .014$) were more likely to have higher social capital.

Conclusion Psychiatrists' access to professional resources can be reliably measured by using an 11-item questionnaire.

Keywords Social capital, Psychiatry, Network, Dissemination

*Correspondence:
Juliette Lagreula
juliette.lagreula@uclouvain.be
[1]Clinical Pharmacy and Pharmacoepidemiology Research Group (CLIP)-Louvain Drug Research Institute (LDRI), Université Catholique de Louvain, Avenue Mounier 72, UCLouvain, Brussels 1200, Belgium
[2]Fonds de la Recherche Scientifique – FNRS, Brussels, Belgium
[3]Institute of Health and Society (IRSS), UCLouvain, Brussels, Belgium
[4]Pharmacy Department, Cliniques Universitaires Saint-Luc, Brussels, Belgium

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Text box 1: Contributions to the literature

- The low rate of adoption of therapeutic innovations, such as prescribing guidelines in psychiatry expose patients to suboptimal care.
- Among other factors, interpersonal relationships influence the dissemination of innovations. However, no scale measuring social capital specific to psychiatrists has never been developed.
- This study describes the development and validation of a reliable tool to measure psychiatrists' social capital and can be used to identify how their social capital influences the adoption of innovations.
- This scale could be used to support implementation projects in psychiatry.

Background

The psychiatric field is characterised by a low rate of adoption of therapeutic innovations, such as prescribing guidelines [1–4]. Research findings are not easily incorporated into clinical practice [5], and this lack of adoption limits the impact of new findings on patient outcomes [2, 6]. As a result, suboptimal practice may continue [2]. In order to keep abreast of the latest innovations, clinicians often rely on colleagues, and interpersonal relationships therefore greatly influence the dissemination of innovations [2, 5, 7]. Moreover, attitude towards an innovation depends on access to information, but also on social influence from colleagues [5]. Indeed, many clinicians cited their colleagues as the most valued source of information, not only to hear about new findings but also to help them interpret complex cases, or obtain advice [7]. Hence, in the field of mental health, the social capital of psychiatrists is a key resource that needs to be monitored.

The two main methods to measure social capital are the "name generator" and the "position generator". The first consists of mapping an ego-centred social network from an individual's response to a question aimed at identifying who they talk to about a specific topic. The network then expands from that person to a subsequent inventory of social resource based on the inclusion of names. However, different questions may lead to different networks, depending on their focus, leading to inconsistent findings. In addition, redundancy can occur if the same resource is given by different individuals in the network, and as a single resource is usually sufficient to solve a problem, it is more useful to detect access to at least one resource than having to know the total amount of resources for each problem. Finally, it is not clear whether these relationships are a reliable means of identifying access to resources [8]. The second method represents a collection of resources based on position-related dimensions in a hierarchically modelled society (e.g. highest access prestige), but it has the disadvantage of containing little specific information on the diversity of the resources and their proximity to the respondent. Furthermore, this method is less applicable in the professional domain of healthcare, as most resources have a similar hierarchical position [8]. The Resource Generator (RG), developed by Snijders and Van Der Gaag, combines the positive aspects of a name generator (i.e. details on the accessed resource) and a position generator (i.e. position-related dimension). The RG consists of a fixed list of resources representing a concrete collection of social capital in different life domains [8]. It examines the availability of each resource by measuring the strength of the link through which the resource is accessed. Social capital as measured by the RG therefore captures the support that an individual can access through their relationships [8, 9]. The RG has been presented as producing better measurements of social capital compared to a position generator alone, because it is based on access to resources rather than hypothetical assistance from people one knows [9]. This questionnaire can be administered quickly and is easily interpreted. However, the RG was developed for the general population, and needs to be validated for different populations [10]. Indeed, the list of resources specific to a professional field – and to psychiatry, in particular – may vary from that of the general population, and it is therefore important to adapt the RG to fit this specific profession.

To the best of our knowledge, no instrument has ever been developed to measure the social capital of psychiatrists. For that reason, creating a specific tool is of particular interest, especially as it may be used to measure the influence of psychiatrists' social capital on several outcomes, such as the adoption of a new innovation, thus improving patient outcomes.

Our objective is to develop and validate the Resource Generator for Psychiatrists (RG-Psy).

Methods

Item selection and questionnaire development

The development and validation of the final RG-Psy followed multiple steps.

First, items were selected from the original RG as well as from Webber and Huxley's adaptation for the UK (i.e. Resource Generator UK (RG-UK)) [10]. The RG-UK was built according to a rigorous methodology, has good consistency and high reliability. Selected items were then adapted by an expert in the sociology of mental health (VL) to be consistent with the psychiatric profession, in collaboration with a psychiatric clinical pharmacist (JL).

The response categories were also developed on the basis of the RG, the RG-UK and the International Social Survey Programme (ISSP) version [9], following the same steps. Each item has a 6-point response scale and is rated from 0 to 6 according to how close the resource was to the respondent. A cumulative scale, or unipolar scale, was used in the RG and therefore retained in the RG-Psy, as it is the best model for measuring social capital

[8]. Answers were coded "0" when the respondent did not need a certain resource or it was not applicable to their situation, while answering the socially closest resource was coded "6".

Second, the content validity of the draft version was assessed by conducting individual cognitive interviews with an expert panel of six clinicians (e.g. psychiatrists, clinical pharmacists). Cognitive methods aim to determine the process used by respondents to complete the survey [11, 12]. The think-aloud strategy is one of the cognitive interview techniques, and was chosen for the development of this questionnaire as it works better for self-administered questionnaires [12]. In this strategy, respondents are asked to think aloud while answering the questions, in order to identify the path leading to their response and to understand the reasons for any misunderstanding and how the question was misunderstood.

Variables potentially associated with the RG-Psy score

In addition to the RG-Psy, further data were collected, including age, gender, primary spoken language (i.e. Dutch or French), region of practice, practice setting (e.g. hospitals), number of years of practice and status (i.e. psychiatrist or resident in psychiatry).

Study population

All adult psychiatrists and residents in psychiatry currently working in Belgium were eligible. In order to perform a probability sampling, the federal list of all psychiatrists licensed to work in Belgium was used to identify our target population. In addition, all residents in adult psychiatry were identified by contacting the head of the department of psychiatry in each Belgian medical school. E-mail addresses were obtained through hospital websites or phone calls for psychiatrists working in other settings (e.g. outpatient care).

Data collection

Our Belgian cross-sectional survey was distributed between April and July 2022 as an online self-administered questionnaire, available in French and Dutch. A link to the survey was sent by e-mail with personalised invitations. Psychiatry residents were contacted through their supervisors, who forwarded the invitation with a link to the survey. A maximum of three reminders were sent every 7 to 10 days to clinicians who did not complete or open the questionnaire. Data were extracted one month after the last reminder was sent.

Evaluation of psychometric characteristics

An exploratory factor analysis (EFA) was conducted to assess the structure validity of the scale. EFA aims to identify the underlying dimensions of a domain [13] in order to determine the latent structure of the scale [14]. When different theoretical constructs are identified [13], this indicates the scale is better summarised using subscales [15]. EFA was used instead of confirmatory factor analysis as there was no clear hypothesis regarding the structure of the factors [13, 15].

In order to check the appropriateness of carrying out an EFA, the adequacy of the data must be verified. A Kaiser-Meyer-Olkin (KMO) test was used, where a KMO $\geq$ 0.6 indicates sampling adequacy [16]. Bartlett's test of sphericity was also performed to reject the hypothesis of independence between variables. Finally, inspection of the correlation matrices was undertaken [16].

There are several methods of factor extraction, such as principal component analysis, maximum likelihood and principal axis factorisation. Principal component analysis is considered a reduction method, while maximum likelihood and principal axis factorisation are used to test the statistical significance of factor loadings and correlations between factors, as well as to calculate confidence intervals. Principal axis factorisation is best used when there is a significant violation of normality [13, 17, 18]. EFA with maximum likelihood for factor extraction was therefore used, because it is the most appropriate method when the data are relatively normally distributed, which was ensured for both univariate and multivariate normality [14]. The number of factors to be retained was determined using the scree test, which involves examining the graph of eigenvalues of unrotated factors (i.e. the scree plot) and identifying the point where the slope breaks. The number of points above the break determine the number of factors to be retained [13, 14, 17]. Promax rotation (i.e. oblique method) was used because items were correlated [13, 17]. After rotation, items loading $\geq$ 0.3 for one factor were kept and grouped with the corresponding factor. Cross-loadings were assessed, and defined as an item loading on more than one factor [17].

Internal consistency was then examined using Cronbach's alpha for each subscale and the total scale, and also using item-total correlation (ITC) [19]. Internal consistency refers to "the extent to which items are correlated (homogeneous), thus measuring the same concept" [15]. A Cronbach's alpha between 0.7 and 0.9 indicates reliable internal consistency [15]. ITC calculates the correlation of each item with the mean total score of the scale [19]. Different threshold values for ITC to keep an item in the scale have been described, mainly 0.2 [20, 21] and 0.4 [19].

Finally, test-retest reliability was verified using the intra-class correlation (ICC), as this is the most appropriate parameter for continuous measurements [15]. A purposive sample of eight respondents were asked to complete the survey twice at one-week intervals. An ICC above 0.7 is considered reliable [15, 21].

Statistical analysis

The sum of all item responses was used to calculate the total RG-Psy score, which was the dependent variable. A multivariable linear regression model was run with stepwise backward elimination based on the Akaike Information Criterion to select the final model, in which p-values < 0.05 were considered significant. Factors included in the initial model are detailed in the Online supplementary material (eTable 1). Statistical analysis was conducted using R software version 4.0.3. The packages car, rms, psych and dplyr were used.

Ethics

This study was approved by the ethics committee of Université Catholique de Louvain (No. 2022/08FEV/055).

Participation was voluntary, and each respondent provided informed consent before completing the questionnaire. Responses were anonymous.

Results

Scale adaptation and cognitive pre-testing

The selection and adaptation of items to match the field of psychiatry resulted in an initial list of 14 items. During the cognitive interviews, some items were considered redundant. These situations were mainly due to the difficulty of adapting some items to a specific profession. For example, "Give you a good reference for a job" and "Help you to find somewhere to live if you had to move house" had been adapted as "Helping you find another job" and "Helping you find another hospital or workplace", respectively. These two items were considered redundant by the experts and were merged into a single item: "Helping you find another job or workplace". Other items were considered irrelevant because they always required the same resource due to the institutional organisation. Some misunderstandings were also identified and the items in question were reworded accordingly. This resulted in a 13-item scale that was used for the survey.

Table 1 Characteristics of the respondents

Characteristics	Total (*N* = 147)
	n, (%)
Age (y), mean (SD)	51 (16)
Gender	
Women	59 (40.1)
Men	87 (59.2)
Other	1 (0.7)
Primary spoken language	
Dutch	70 (47.6)
French	77 (52.4)
Region	
Brussels	38 (25.9)
Flanders	65 (44.2)
Wallonia	44 (29.9)
Work site	
General hospital	38 (25.8)
Psychiatric hospital	69 (46.9)
Primary care mental health service	27 (18.4)
Mobile team	10 (6.8)
Private practice	71 (48.3)
Prison	5 (3.4)
Residential facility	11 (7.5)
Other	25 (17)
Year of practice, mean (SD)	23.6 (15.5)
Medical resident	26 (17.7)

Characteristics of the study population

After excluding ineligible psychiatrists (eFigure 1 in the Online supplementary material), a final population of 1618 psychiatrists and residents was contacted. A total of 196 psychiatrists responded to the survey (response rate: 12.1%). Forty-nine questionnaires were excluded due to failure to complete the RG-Psy, resulting in a total of 147 questionnaires being analysed.

To test for possible inclusion bias, characteristics of the 49 clinicians who did not respond to the RG-Psy were compared with those of the respondents. There were no statistically significant differences in demographic characteristics between clinicians who did not respond and those who completed the questionnaire, with the exception of region of practice. However, the primary spoken language of respondents was similarly distributed in both populations, reflecting a comparable representation of the Belgian population (eTable 2 in the Online supplementary material).

The majority of respondents were men (59.2%) with an average of 23.6 (SD = 15.5) years of practice. They were equally distributed between the two main language communities (i.e. French-speaking: 52.4%, Dutch-speaking: 47.6%). Prescriber characteristics are summarised in Table 1.

Psychometric characteristics

The total RG-Psy score showed a normal distribution, with a mean of 32.5 (SD = 12). The percentage of each item response can be found in Table 2.

Structure validity

Data from the RG-Psy are appropriate for conducting an EFA, with good sampling adequacy (KMO test:0.77) and a significant Bartlett's test of sphericity ($p < .001$). The sample size is also appropriate for an EFA, as it followed the rules-of-thumb (i.e. 10 subjects per variable when below 200) [13]. The scree plot suggests a two-factor model (i.e. two subscales). After rotation, two items were freestanding (i.e. not loading with a factor) and were thus discarded. The analysis was re-run and confirmed two subscales, which represent "resources for the clinician"

Table 2 Frequency of response to RG-Psy items (*N* = 147)

RG-Psy subscales and total	% Yes (*N* = 147)	If yes, access through					
		A psychiatrist friend	A fellow psychiatrist	A senior psychiatrist, a supervisor	Another psychiatrist that I know	Another colleague (e.g. nurse, psychologist)	A professional association
Resources for the clinician							
1. Advising you about a patient	95	7	44	16	24	3	1
2. Helping you with patient follow-up if you were unable to work for a few weeks	93	2	64	0	16	4	6
3. Helping you to get a patient admitted to an inpatient or residential unit (e.g. psychiatric care home)	87	3	30	5	44	5	0
8. When you are feeling a bit down	78	46	7	4	7	12	0
9. Be there if you just want to talk about your day	73	21	16	1	1	33	1
Resources for the professional							
6. Helping you find another job or another place to work	62	27	0	3	16	7	9
7. Advising you on your career	67	29	1	16	13	5	3
10. To confirm your skills as a psychiatrist	72	11	20	27	7	3	5
11. Have contacts with federal or regional mental health authorities	79	1	8	17	10	10	33
12. Have contacts with the media (newspapers, radio, television)	54	3	7	15	7	3	18
13. Organising a professional/scientific event	80	4	22	14	12	8	20
Removed items							
4.Helping you with a patient's psycho-social orientation	95	1	11	3	7	69	3
5.Helping you with forensics	96	7	16	23	11	18	21

and "resources for the professional", respectively. No item loaded below 0.3 with one factor in the final scale (i.e. after exclusion of the two items), and there was no cross-loading (Fig. 1). The two subscales were confirmed by examination of Pearson's correlation matrices, ensuring that items in the same subscales were well correlated and thus measured similar theoretical constructs (eTable 3 in the Online supplementary material). The removal of the two items was supported by the inter-item total correlation. Indeed, the items "Helping you with a patient's psycho-social orientation" and "Helping you with forensics" have an ITC of 0.27 (i.e. the lowest ITC of all items) and 0.4, respectively. As the two main thresholds described for ITC are 0.2 and 0.4, this justifies their removal, as their values fall between these two thresholds, in addition to not loading with any factors. Finally, the total Cronbach's alpha, described thereafter, was not significantly modified by the elimination of these items. All other items had a satisfactory item-total correlation with the mean total score and with the mean score of their factor (Table 3).

Internal consistency

Internal consistency was good for the total scale and for the subscale representing "resources for the professional", with a Cronbach's alpha of 0.74 and 0.7, respectively, and borderline satisfactory for the subscale "resources for the clinician", with a Cronbach's alpha of 0.62 (Table 3).

Test-retest reliability

Finally, the questionnaire showed good test-retest reliability, with an ICC of 0.81.

Factors associated with the total RG-Psy score

The final multivariable linear regression model revealed that clinicians attending institutional seminars (β = 5.52, Standard Error (SE) = 2.2, p = .013) and working in multidisciplinary settings, such as hospitals (β = 4.75, SE = 2.06, p = .023) or a mobile team (β = 8.75, SE = 3.52, p = .014), were significantly more likely to have a higher RG-Psy score, translated as greater access to social capital resources. Younger psychiatrists tend to have a lower professional social capital (-0.39, SE = 0.21, p = .0683) (Table 4).

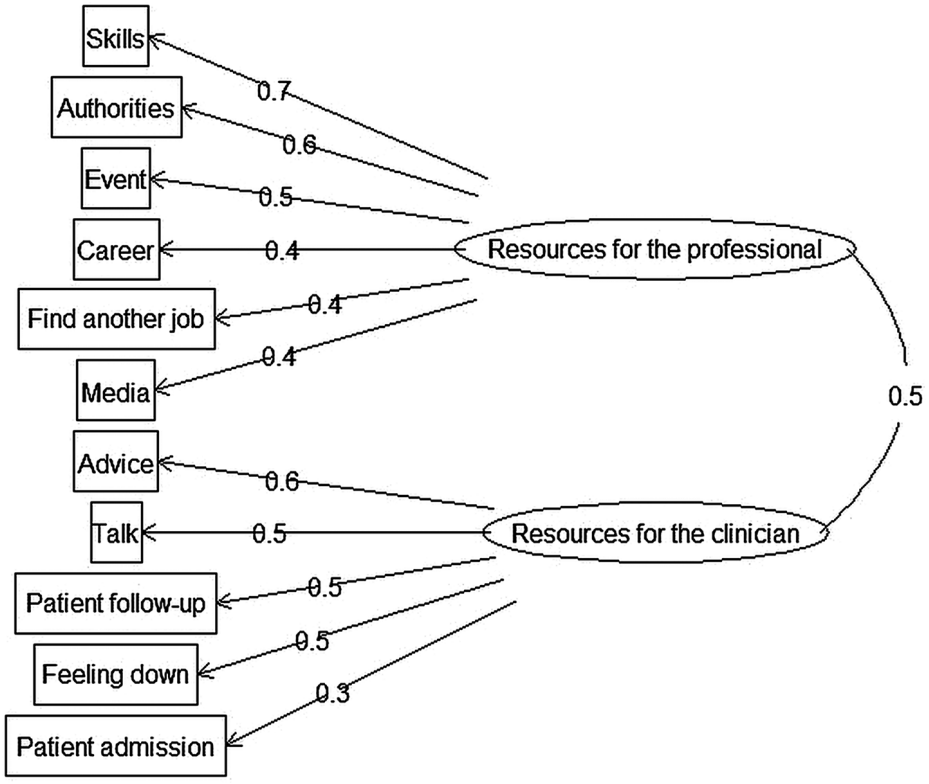


Fig. 1 Diagram of the factor analysis of the RG-Psy

Table 3 Average score, standard deviation, item-total correlation, and Cronbach's alpha for each item of the final RG-Psy

RG-Psy subscales and total	Mean	SD	Item-total correlation	Item-total correlation with subscale	Cronbach's α
Resources for the clinician					0.62
1. Advising you about a patient	4	1.4	0.39	0.52	
2. Helping you with patient follow-up if you were unable to work for a few weeks	4	1.7	0.42	0.52	
3. Helping you to get a patient admitted to an inpatient or residential unit (e.g. psychiatric care home)	3.3	1.6	0.33	0.34	
8. When you are feeling a bit down	3.8	2.5	0.53	0.53	
9. Be there if you just want to talk about your day	2.8	2.3	0.49	0.56	
Resources for the professional					0.7
6. Helping you find another job or another place to work	2.5	2.5	0.45	0.46	
7. Advising you on your career	3	2.4	0.57	0.55	
10. To confirm your skills as a psychiatrist	3	2.2	0.65	0.67	
11. Have contacts with federal or regional mental health authorities	2	1.7	0.44	0.53	
12. Have contacts with the media (newspapers, radio, television)	1.6	1.9	0.37	0.41	
13. Organising a professional/scientific event	2.6	2	0.41	0.51	
Total					0.74

Abbreviations SD, Standard Deviation

Discussion

The RG-Psy has been successfully developed and validated, and has good psychometrics characteristics. Although there is some variation in item performance, the good internal consistency suggests that this scale performs well for the target population of psychiatrists.

After careful item selection and adaptation, cognitive pre-testing and exploratory factor analysis, the final scale contains 11 items (final French and Dutch scales shown in eQuestionnaire 1 and eQuestionnaire 2 in the Online Supplementary material). The EFA revealed two latent dimensions of the RG-Psy. This is different from the original RG and the RG-UK, both of which have four

Table 4 Final multivariable linear regression model of factors associated with the RG-Psy total score

	Coefficient	Standard error	*p*-value
Age	-0.39	0.21	0.068
Years of practice	0.31	0.22	0.157
Attendance at institutional seminars	5.52	2.2	**0.013**
Attendance at seminars of professional associations	-3.23	1.99	0.106
Practice setting			
Hospital	4.75	2.06	**0.023**
Mobile team	8.75	3.52	**0.014**

p-values < 0.05, in bold, are considered statistically significant

subscales, which seems consistent because both measure access to resources in the private and professional network, whereas the RG-Psy focuses only on the professional domain.

As a result of the EFA, the item "Helping you with a patient's psycho-social orientation" was removed, as it did not load with any factors and had the lowest ITC. Access to this resource may be influenced by the availability of institutional solutions, and provides little information on social capital [8]. Indeed, 69% of respondents choose "another colleague (e.g. nurse, psychologist)", which probably represents a psychologist or social worker. The second discarded item, "Helping you with forensics", was presumably not very successful, as all response categories were chosen almost equally. Access to this type of expertise (i.e. legal, authorities) was better measured by the item "Have contacts with federal or regional mental health authorities" on the RG-Psy scale (Table 2).

Furthermore, the RG-Psy items display a great diversity in their popularity, i.e. the frequency with which a resource is accessed, demonstrating a reliable scale [8]. Indeed, in a cumulative scale, if only commonly accessed resources are included, meaning that a high percentage give a positive response to the item, minimal levels of trait will be measured, and the scale will be less useful. In the RG-Psy, the least used resource was related to media access, which is similar to the RG, followed by assistance with employment issues (Table 2).

Finally, the multivariable regression model revealed that clinicians working in multidisciplinary settings, such as hospitals or mobile teams, were more likely to have higher social capital. This may mean that clinicians with higher social capital choose these settings, or that these settings increase social integration within the professional network. Young psychiatrists tend to have lower professional social capital, which may be explained by the fact that their social network is still developing. This is the opposite of what was found in the RG-UK, but it seems consistent because in private life, young adults tend to have greater social capital, which is not the same situation as in the professional field [10].

The strength of the RG-Psy lies in its development and validation according to a rigorous methodology, resulting in a scale with good consistency and reliability. Moreover, the respondents came from all regions of Belgium, were equally divided between the two main Belgian language communities and were well distributed across all workplaces. Finally, our sample size allows sufficient power to calculate parametric properties. However, this scale must be used in the light of certain limitations. First, the rather low response rate of 12.1% could limit generalisability. Physicians are known for not responding well to online questionnaires, generally achieving a lower response rate than other populations [22, 23], due to lack of time and survey burden [24]. Moreover, psychiatrists have the lowest response rate of all specialists [24]. In addition, no monetary incentives were used, although they have been shown to increase the response rate of physicians [24, 25]. Nevertheless, recent research has established that there is little relationship between a low response rate and biased results, and that a higher response rate does not protect against biased results [26, 27]. Indeed, in a previous survey, the exclusion of late and difficult-to-reach respondents did not produce a significant difference in the survey results [26]. It is therefore more appropriate to compare the characteristics of non-respondents with those of respondents. Our analysis indicates that non-respondents do not differ from respondents in their demographics. Furthermore, as the RG-Psy scale has a normal distribution, it reflects a good distribution of all respondent types, showing that the survey reached highly and low-connected respondents in the same way.

Conclusion

Psychiatrists' access to professional resources can be reliably measured by means of an 11-item questionnaire that can be used to identify how social capital contributes to the dissemination and adoption of best practices in psychiatry.

Abbreviations

RG	Resource Generator
RG-Psy	Resource Generator for Psychiatrists
RG-UK	Resource Generator UK
ISSP	International Social Survey Programme
EFA	Exploratory Factor Analysis
KMO	Kaiser-Meyer-Olkin
ITC	Item-total correlation
ICC	Intra-class correlation

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s13690-024-01465-4.

Supplementary Material 1

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Author contributions
JL and VL conceived and designed the study. JL acquired the data and performed the analysis. All authors contributed to the interpretation of the findings. JL wrote the original draft. JL, VL and OD reviewed, edited, and approved the final content of the manuscript.

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Data availability
The dataset generated and analysed during the current study are not publicly available due privacy and ethical restrictions but are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate
This study was approved by the ethics committee of Université Catholique de Louvain (No. 2022/08FEV/055) and performed in accordance with the Belgian privacy legislation of 30 July 2018 and with the European General Data Protection Regulation [GDPR] of 25 May 2018. Participation was voluntary, and each respondent provided informed consent before answering the questionnaire. Responses were anonymous.

Consent for publication
Not applicable.

Competing interests
The authors declare no competing interests.

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References

1. Fischler I, Ri1., Fischler I, Riahi S, Stuckey MI, Klassen PE. Implementation of a clinical practice guideline for schizophrenia in a specialist mental health center: an observational study. BMC Health Serv Res. 11 août. 2016;16(1):372.
2. Mascia D, Cicchetti A. Physician social capital and the reported adoption of evidence-based medicine: exploring the role of structural holes. Soc Sci Med 1 mars. 2011;72(5):798–805.
3. Aarons GA. Mental Health Provider attitudes toward Adoption of evidence-based practice: the evidence-based practice attitude scale (EBPAS). Ment Health Serv Res 1 juin. 2004;6(2):61–74.
4. Drake RE, Goldman HH, Leff HS, Lehman AF, Dixon L, Mueser KT, et al. Implementing evidence-based practices in Routine Mental Health Service settings. Psychiatr Serv févr. 2001;52(2):179–82.
5. West E, Barron DN, Dowsett J, Newton JN. Hierarchies and cliques in the social networks of health care professionals: implications for the design of dissemination strategies. Soc Sci Med. 1 mars. 1999;48(5):633–46.
6. Jin H, Tappenden P, MacCabe JH, Robinson S, McCrone P, Byford S. Cost and health impacts of adherence to the National Institute for Health and Care Excellence schizophrenia guideline recommendations. Br J Psychiatry J Ment Sci Avr. 2021;218(4):224–9.
7. Keating NL, Ayanian JZ, Cleary PD, Marsden PV. Factors Affecting Influential Discussions Among Physicians: A Social Network Analysis of a Primary Care Practice. J Gen Intern Med. 1 juin. 2007;22(6):794–8.
8. Van Der Gaag M, Snijders TAB. The Resource Generator: social capital quantification with concrete items. Soc Netw 1 janv. 2005;27(1):1–29.
9. Sapin M, Joye D, Wolf C. The ISSP 2017 social networks and social resources module. Int J Sociol 2 janv. 2020;50(1):1–25.
10. Webber MP, Huxley PJ. Measuring access to social capital: the validity and reliability of the Resource Generator-UK and its association with common mental disorder. Soc Sci Med 1 août. 2007;65(3):481–92.
11. Qureshi H, Rowlands O. User satisfaction surveys and cognitive question testing in the public sector: the case of personal social services in England. Int J Soc Res Methodol 1 sept. 2004;7(4):273–87.
12. Collins D. Pretesting survey instruments: an overview of cognitive methods. Qual Life Res 1 mai. 2003;12(3):229–38.
13. Floyd FJ, Widaman KF. Factor analysis in the development and refinement of clinical assessment instruments. Psychol Assess. 1995;7(3):286–99.
14. Fabrigar LR, Wegener DT, MacCallum RC, Strahan EJ. Evaluating the use of exploratory factor analysis in psychological research. Psychol Methods. 1999;4(3):272–99.
15. Terwee CB, Bot SDM, de Boer MR, van der Windt DAWM, Knol DL, Dekker J, et al. Quality criteria were proposed for measurement properties of health status questionnaires. J Clin Epidemiol 1 janv. 2007;60(1):34–42.
16. Dziuban CD, Shirkey EC. When is a correlation matrix appropriate for factor analysis? Some decision rules. Psychol Bull. 1974;81(6):358–61.
17. Costello AB, Osborne J. Best practices in exploratory factor analysis: four recommendations for getting the most from your analysis. Pract Assess Res Eval [Internet]. 23 nov 2019 [cité 22 déc 2023];10(1). Disponible sur: https://openpublishing.library.umass.edu/pare/article/id/1650/
18. Taherdoost H, Sahibuddin S, Jalaliyoon N. Exploratory Factor Analysis; Concepts and Theory [Internet]., Rochester NY. 2022 [cité 20 oct 2024]. Disponible sur: https://papers.ssrn.com/abstract=4178683
19. Aday LA, Cornelius LJ. Designing and conducting health surveys: a Comprehensive Guide. Wiley; 2006. p. 549.
20. Kline PA. Handbook of Test Construction: Introduction to Psychometric Design [Internet]. 2015 [cité 22 déc 2023]. Disponible sur: https://www.routledge.com/A-Handbook-of-Test-Construction-Introduction-to-Psychometric-Design/Kline/p/book/9781138905122
21. Roux B, Sirois C, Niquille A, Spinewine A, Ouellet N, Pétein C, et al. Cross-cultural adaptation and psychometric validation of the revised patients' attitudes towards Deprescribing (rPATD) questionnaire in French. Res Soc Adm Pharm 1 août. 2021;17(8):1453–62.
22. Aitken C, Power R, Dwyer R. A very low response rate in an on-line survey of medical practitioners. Aust N Z J Public Health 1 juin. 2008;32(3):288–9.
23. Grava-Gubins I, Scott S. Effects of various methodologic strategies: survey response rates among Canadian physicians and physicians-in-training. Can Fam Physician Med Fam Can oct. 2008;54(10):1424–30.
24. Cunningham CT, Quan H, Hemmelgarn B, Noseworthy T, Beck CA, Dixon E et al. Exploring physician specialist response rates to web-based surveys. BMC Med Res Methodol. 9 avr. 2015;15(1):32.
25. Hawley KM, Cook JR, Jensen-Doss A. Do noncontingent incentives increase Survey Response Rates among Mental Health providers? A Randomized Trial Comparison. Adm Policy Ment Health Ment Health Serv Res 1 sept. 2009;36(5):343–8.
26. Hendra R, Hill A. Rethinking response rates: New evidence of little relationship between Survey Response Rates and Nonresponse Bias. Eval Rev 1 oct. 2019;43(5):307–30.
27. Rindfuss RR, Choe MK, Tsuya NO, Bumpass LL, Tamaki E. Do low survey response rates bias results? Evidence from Japan. Demogr Res 25 mars. 2015;32:797–828.

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