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Intensity of previous teaching but not diagnostic skills influences stigmatization of patients with substance use disorder by general practice residents. A vignette study among French final-year residents in general practice

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KEY MESSAGES

- Residents in general practice correctly diagnosed substance use disorder (SUD) but stigmatized people with SUD.
- Residents having received at least six hours of teaching in SUD stigmatized less than those with less training.
- More SUD teaching for residents in general practice may help to reduce stigmatizing attitudes.

ABSTRACT

Background: High levels of stigma towards patients with substance use disorder (SUD) have been found in health professionals and medical students.

Objectives: To assess the capability of residents in general practice to diagnose SUD correctly; to assess their stigmatization of patients with SUD and to assess the correlation between both variables. We hypothesized a negative correlation.

Methods: In 2014, we conducted a cross-sectional survey among French residents in general practice, using a self-administered questionnaire. First, a clinical case of SUD (tramadol) was presented, to assess the diagnosis and retained diagnostic criteria. A second clinical vignette was presented (intravenous heroin user) to assess stigmatization with the Attitudes to Mental Illness Questionnaire (AMIQ). Its score ranges from –10 (negative attitude) to +10 (positive attitude). AMIQ scores of residents who diagnosed SUD correctly versus incorrectly, and who had received at least six hours versus less than six hours of teaching on this topic, were compared using Student's t-test.

Results: Of 1284 solicited residents, 303 participated (23.6%), 249 residents diagnosed SUD correctly (82.2%). The mean AMIQ score was –3.91 (SD 2.4) without significant difference regarding the correct diagnosis of SUD; but with a significant difference between residents who had received training in SUD for at least six hours versus residents less trained (AMIQ scores –3.76 (SD 2.46) versus –4.50 (SD 2.27), $p = .0354$).

Conclusion: Residents in general practice had a good capacity to diagnose SUD correctly but on average expressed negative attitudes toward people with SUD. More SUD teaching seems to help in reducing stigmatizing attitudes.

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Introduction

Substance use disorder (SUD) is a 'chronic, relapsing brain disease, characterized by compulsive drug seeking and use, despite harmful consequences' [1]. People with SUD are 10 times more likely to die compared with their peers of the same age and gender in the general population: overall standard mortality ratio (SMR) of 10 (95% CI: 9.7–10.4) for the pooled cohort of nine European countries [2].

In several European countries, general practitioners (GPs) manage patients with SUD [3]. In France in the last national survey in 2009, 90 000 patients per week consulted their GP for tobacco cessation and 50 000 per week for alcohol cessation [4]. In 2001, 51% of GPs reported having seen at least one patient for marijuana use during the last 12 months, 25% at least one patient for cocaine use and 20% for ecstasy use [5]. Three-quarters of patients treated by opiate maintenance treatment are managed in general practice [6].

Structural stigma towards patients with psychiatric disorders is common among health professionals and medical students, [7–9] and contributes to limited access to medical care, lower treatment quality, and lower quality of life of patients [10,11]. Stigma also exists towards patients with SUD [12]. European health professionals appear to ascribe lower status to working with substance users than helping other patient groups, particularly in primary care [13]. In a French survey, two out of three GPs reported their refusal to treat illicit drug users [5]. Stigmatization of people with SUD is a predictive factor of continuation and worsening of this disorder [14].

Medical education may reduce these negative attitudes. Contact-based training and education programs for medical students have been shown to decrease the dislike of and the discomfort in working with SUD [15]. First, in this study, we aimed to assess the capability of residents in general practice to diagnose SUD correctly. Second, we aimed to assess their level of stigmatization of patients with SUD and its correlation to the correct diagnosis of SUD. Based on our experience as teachers, we hypothesized that students not capable of diagnosing SUD were those most stigmatizing patients with SUD.

Methods

Study design

In 2014, we conducted an observational cross-sectional survey among residents in the final year of their residency in general practice, aiming to assess their diagnosis and their illness representations of SUD.

Ethics

Ethics approval for this study was obtained from the 'Commission Ethique du Département de Médecine Générale de Midi-Pyrénées' (AF25/11/2013). Participation in the study was voluntary; there was no financial reward for participation. The data remains anonymized and confidential.

Selection of study subjects

We recruited last year's residents to have a homogenous population according to their training in general practice and to assess their representations at the end of their medical education.

In France, medical school can be enrolled in at around 18 years of age and lasts six years (including two-month rotations with clinical elective but limited responsibilities towards patients). Residency in general practice follows medical school and lasts three years, with 6-month clinical rotations with responsibilities towards patients and 200 h of specific teaching. Clinical rotations can be in hospitals or GPs' medical offices; one-to-three clinical rotations can take place in GPs' medical offices.

Questionnaire

Residents in general practice were solicited to answer an online anonymous self-administered questionnaire (supplementary material). This questionnaire was divided into five parts:

- The first part aimed to assess SUD diagnosis using a clinical situation of SUD to tramadol in a patient with chronic pain. The first question was about the diagnosis (multiple-choice question: analgesics' under-dosing, depression, abuse, SUD, suffering at work). The second question was about retained criteria to diagnose the disorder (multiple-choice question with the 10th revision of the International Classification of Diseases and Health Problems (ICD-10) criteria and other incorrect criteria) [16]. The choice of a painkiller leading to SUD was designed not to draw attention to a substance with a well-known potential for SUD.
- The second part aimed to assess stigmatization of patients with SUD by residents using a clinical vignette favouring stigmatization: an intravenous heroin user. The Attitudes to Mental Illness Questionnaire (AMIQ) was used; the AMIQ is a five-questions survey using five-point Likert scales (maximum 2, minimum –2, with 2 neutral answers

'neutral' and 'I don't know') after the short vignette describing an imaginary 26-year-old patient. The score for each question thus ranges between –10 (negative attitude) and +10 (positive attitude). This scale has been used and validated to identify stigma towards different persons, including persons with SUD, in the general population as well as in health professionals [17–19]. The creators of the AMIQ specified that people with diabetes typically generate a mean score around +5, whereas relapsed intravenous drug addicts and criminals typically score around –5 [18].

- The third part aimed to assess the representation of SUD as a chronic disease using questions with Likert scale: (1) Do you think that SUD is a disease? (2) Do you think that the patient is partly responsible of his disorder? (3) Do you think that the patient has to be managed the same way than patients with chronic diseases? (4) Do you think that health expenditures concerning these patients are too high in comparison to others medical disorders?
- The fourth part aimed to compare this representation of SUD to the representation of a classic chronic disease: type 2 diabetes in a 46 year-old type 2 diabetes patient, using the previous questions (2) to (4) with Likert scale.
- Finally, the last part collected demographic data (age, sex) and data related to the residents' education and training (medical school, clinical rotation in general practice).

The questionnaire was pre-tested in a panel of seven teachers (three GPs, two addictive disorder care specialists, one psychiatrist, and one pharmacologist) and then tested by 12 clinicians working in an SUD treatment centre in the teaching hospital of Charles Perrens, Bordeaux to assess specifically the adequacy of the clinical situation to the diagnosis of SUD. The questionnaire was anonymous, online and required around 15 min to answer. An information letter presented this study as a study about mental health.

We used SUD criteria from ICD-10 for the first part of the questionnaire aiming to assess SUD diagnosis (clinical situation of SUD to tramadol in a chronic pain patient) [16].

Course of the study

All the Departments of General practice ($n = 34$) were invited to participate on 15 May 2014. After the consent of their department of general practice, medical schools were sent an email with a link to the questionnaire. A first mailing was sent during the last fortnight of May to their residents in general practice by medical schools, who had agreed to participate, and a reminder email was sent 15 days later. The deadline to complete the survey was given as 30 June 2014.

Analysis

Answers were extracted directly from Google Form into an Excel file. Data analysis was performed using the software SAS 9.3® (SAS Inst., Cary, NC, USA). Continuous variables are described as mean and standard deviation. Categorical variables are described as numbers and percentages. AMIQ scores of residents who diagnosed SUD correctly and those who did not diagnose SUD were compared using a Student's t-test.

Results

Characteristics of residents who participated

Among the 34 French departments of general practice, 12 agreed to participate (participation rates and numbers of hours for SUD teaching are shown in Table 1), representing 1284 residents in the last year of their residency in general practice. Of them, 303 (23.6%) participated in the study; 225 (74.2%) women; mean age 27.6 (SD 1.4 years). Almost all ($n = 298$, 98.3%) had performed at least one clinical rotation in a GP's office (six months).

SUD diagnosis

When presented with the clinical situation of SUD to tramadol in a chronic pain patient aiming to assess SUD diagnosis, 249 residents correctly diagnosed SUD (82.2%). Abuse was concluded by 34 residents (11%), suffering at work by nine residents (3.0%), depression by eight (2.6%) and analgesics' under-dosing by three (0.9%).

Withdrawal signs and tolerance were the first criteria cited to diagnose SUD, by 96.4% and 69.5% of the 249 residents diagnosing SUD correctly, respectively. Table 2 describes criteria retained by residents. Eighteen (7.2%) residents recognized correctly together with the five diagnostic criteria of the ICD-10 present in the clinical situation (craving, loss of control, withdrawal signs, tolerance, and harmful consequences).

Attitude towards addicted patients

Responding to the clinical vignette of an intravenous heroin user, the mean AMIQ score was –3.91 (SD 2.43,

Table 1. Number of residents registered in final year by medical school, who participated in the study and substance use disorder teaching included in compulsory teaching during the residency in general practice.

Medical school	Number of residents registered in last year with a valid email address $n = 1284$	Number of residents who participated		Substance use disorder teaching	
		$n = 303$	Participation rate (%)	Number of hours	Position during the residency
Bordeaux	204	60	29.4	6	Second year
Brest	72	16	22.2	6	According to the choice of residents
Caen	75	22	29.3	6	First year
Clermont	59	24	40.7	4	Second year
Limoges	26	9	34.6	–	–
Nice	75	14	18.7	–	–
Paris Diderot	108	23	21.3	6	Second year
Paris Versailles	75	8	10.7	6	Second year
Poitiers	90	13	14.4	2	Third year
Rennes	215	37	17.2	6	According to the choice of residents
Strasbourg	140	30	21.4	12	Third year
Toulouse	145	46	31.7	6	Third year

Table 2. Criteria used to diagnose substance use disorder by 249 French final year residents in general practice who diagnosed substance use disorder correctly.

Substance use disorder criteria proposed	Number of residents having selected the corresponding criterion $n = 249$
Withdrawal Signs	240 (96.4%)
Tolerance	173 (69.5%)
Loss of Control	167 (67.1%)
Quantity Used	149 (59.8%)
Craving	131 (52.6%)
Harmful Consequences	92 (36.9%)
Somatic Complains	50 (20.1%)
Professional Context	24 (9.6%)
Age and Sex of the Patient	23 (9.2%)
Medical History	21 (8.4%)

minimum: −9; maximum: 3). Table 3 describes the AMIQ score results. The mean AMIQ score was −3.98 (SD 2.47) in the 249 residents who correctly diagnosed SUD and −3.59 (SD 2.27) for those who did not diagnose SUD; $p = .2860$. The mean AMIQ score was −4.50 (SD 2.27) in the 242 residents studying in medical schools devoting four hours or fewer to SUD teaching and −3.76 (SD 2.46) for the 60 residents studying in medical schools devoting at least six hours to SUD teaching ($p = .0354$).

Illness representations of substance use disorder and comparison with type 2 diabetes

When presented with the clinical vignette of an intravenous heroin user, 235 residents (77.6%) strongly agreed that SUD is a disease; 64 agreed (21.1%); two (0.6%) were neutral and two (0.6%) disagreed. Table 4 describes and compares representations about SUD (clinical vignette of an intravenous heroin user) and type 2 diabetes.

Discussion

Main findings

In this study, more than 80% of responding French final year residents in general practice diagnosed SUD correctly. Nevertheless, stigma towards people with SUD was found and SUD was less represented as a chronic disease than type 2 diabetes. Residents having received at least six hours of teaching in SUD stigmatized less than those with less training did. We found no correlation between correctness of diagnosing SUD and stigmatization.

Strengths and limitations

With a response rate of less than 25%, selection bias probably exists in this study, which might improve diagnosis rate, AMIQ score and illness representations of SUD. We could not collect complete demographic data of all French residents in general practice to compare to our respondent sample. Collecting data only from medical schools that transmitted the questionnaires to their residents could have introduced a recruitment bias, as medical schools that took the decision to disseminate the questionnaire may be those which were the most interested in SUD teaching. Nevertheless, 12 medical schools participated, representing a sample of more than 300 residents. The aim of the questionnaire was hidden to limit selection bias by choosing a situation of SUD to painkillers (tramadol) and by presenting it as a questionnaire focused on mental illness. We cannot exclude that residents' feeling they have a good understanding of mental health issues were overrepresented.

Table 3. Results of the AMIQ score about the clinical vignette of an intravenous heroin user named Jean ($n = 303$ French final year residents in general practice answering).

	Strongly agree n (%)	Agree n (%)	Neutral n (%)	Disagree n (%)	Strongly disagree n (%)	Don't know n (%)
Do you think that this would damage Jean's career?	194 (64.0)	101 (33.3)	8 (2.6)	0 (0)	0 (0)	0 (0)
I would be comfortable if Jean were my colleague at work.	6 (2.0)	34 (11.2)	74 (24.4)	130 (42.9)	47 (15.5)	12 (4.0)
I would be comfortable with inviting Jean to a dinner party.	27 (8.9)	94 (31.1)	88 (29.0)	63 (20.8)	16 (5.3)	15 (5.0)
	Very likely n (%)	Quite likely n (%)	Neutral n (%)	Unlikely n (%)	Very unlikely n (%)	Don't know n (%)
How likely do you think it would be for Jean's wife to leave him?	52 (17.2)	139 (45.9)	74 (24.4)	9 (3.0)	1 (0.3)	28 (9.2)
How likely do you think it would be for Jean to get in trouble with the law?	93 (30.7)	164 (54.1)	33 (10.9)	8 (2.6)	1 (0.3)	4 (1.3)

In the text accompanying the questionnaire, we explicitly asked residents not to scroll back and stated that the questionnaire was for research purposes and not for evaluation purposes. However, we cannot exclude those participants scrolled forward and later backward to get an idea of the correct diagnosis in the first stage. Therefore, the proportion of residents diagnosing SUD correctly might be overestimated.

Exposure to SUD during clinical rotation in a GP's office is difficult to investigate. The prevalence of patients with SUD is high in general practice if we consider all substances responsible for SUD (i.e. tobacco, alcohol, illicit drugs). However, not all GPs, even internship supervisors, are trained in screening and managing these patients, resulting in heterogeneous practical teaching. We did not collect data about interpersonal experience with SUD, nor analysed associations between demographic data and correct diagnosis of SUD or AMIQ score. In the US, in primary care physicians, interpersonal experience with SUD was common but not associated with attitudes, practices, or satisfaction [20]. Furthermore, teaching about SUD before residency was difficult to assess because it is sparse and spread out among different medical specialties (organ specialties, psychiatry). Clinical rotations in specialized SUD centres or psychiatric services are not mandatory but only proposed in some medical schools. It might concern only a small proportion of medical residents.

residents were taught a pharmacological vision of SUD related only to the psychoactive substance involved and not a medical vision of SUD as a disease with its specific clinical signs.

Stigmatization was present in our study, as the AMIQ score was around -3.91 ± 2.4. In the UK sample of the general population which aimed to validate the AMIQ, the AMIQ score for the clinical vignette of the intravenous heroin user was -5.38 ± 0.53 [17]. Thus, residents may stigmatize patients with SUD less than the general population. By contrast, the mean AMIQ score towards a recovering intravenous drug user was $+0.58$ in members of the general population [18]. Residents trained with at least six hours of SUD teaching were those less stigmatizing of patients with SUD.

The assessment of illness representation of patients with substance SUD and patients with type 2 diabetes revealed that SUD was considered as less of a chronic disease than type 2 diabetes. Recognizing SUD as any other chronic disease may decrease stigma. So far, type 2 diabetes patients were judged more responsible for their disease than addicted patients were and health expenditures were judged too high by more residents than for SUD. These findings revealed that individual responsibility is underlined in type 2 diabetes. Stigma towards patients with type 2 diabetes has been observed and results in sub-optimal clinical outcomes [21].

Interpretation of the study results

The correct diagnosis by most of the residents reflects their knowledge of SUD. Few residents chose diagnoses not related to SUD. Being capable of diagnosing SUD may result from specific academic training in SUD science. Nevertheless, the most retained criteria to diagnose SUD (withdrawal signs and tolerance) are not specific to this disease but reflect physical dependence on the drug used. Only half of the residents used craving as a sign. An explanation may be that these

Implications for education

SUD teaching in general medical practice is not available in some medical schools during residency and when available, ranges from two to 12 h (Table 1). In the US, a knowledge gap and a pervasive negative attitude towards SUD was resolved by a one-week intensive course for primary care internal medicine interns which resulted in a better confidence score [22].

In a study among American physician assistant students, an education intervention (three hours teaching

Table 4. Illness representations towards substance use disorder and type 2 diabetes (n = 303 French final year residents in general practice).

	Substance use disorder (clinical vignette of a 26-year-old intravenous user of heroin)					Type 2 diabetes (clinical vignette of a 47-year-old patient with type 2 diabetes)				
	Strongly agree n (%)	Agree n (%)	Neutral/ don't know n (%)	Disagree n (%)	Strongly disagree n (%)	Strongly agree n (%)	Agree n (%)	Neutral/ don't know n (%)	Disagree n (%)	Strongly disagree n (%)
The patient is partly responsible of his disorder	21 (6.9)	153 (50.5)	87 (28.7)	30 (9.9)	12 (4.0)	57 (18.8)	189 (62.4)	38 (12.5)	15 (5.0)	4 (1.3)
The patient has to be managed the same way as patients with chronic diseases	178 (58.8)	90 (29.7)	9 (3.0)	24 (7.9)	2 (0.7)	208 (68.7)	81 (26.7)	6 (2.0)	6 (2.0)	2 (0.7)
Health expenditures concerning these patients are too high in comparison to other medical disorders	2 (0.7)	15 (5.0)	76 (25.1)	120 (39.6)	90 (29.7)	2 (0.7)	40 (13.2)	73 (24.1)	113 (37.3)	75 (24.8)

about SUD and an interview with a patient with SUD) impacted AMIQ score moderately, but significantly [23].

Being in touch with SUD patients in a more prolonged way, as in specific clinical rotations, should be associated with less stigmatization. This exposure could occur within the context of primary care or in specific clinical rotations in specialized SUD centres. In 75 medical students, stigmatization scores towards patients with a psychiatric disorder decreased significantly after an eight-week clinical rotation in a psychiatric service [24]. No data exists to know if this change remains stable over time.

Conclusion

This study showed that residents in general practice are capable of diagnosing SUD. They, however, expressed stigma toward people with SUD. More SUD teaching for residents in general practice could help to reduce stigmatizing attitudes.

Disclosure statement

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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