

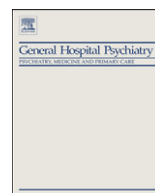
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## Psychiatry and Primary Care

Recent epidemiologic studies have found that most patients with mental illness are seen exclusively in primary care medicine. These patients often present with medically unexplained somatic symptoms and utilize at least twice as many health care visits as controls. There has been an exponential growth in studies in this interface between primary care and psychiatry in the last 10 years. This special section, edited by Jürgen Unutzer, M.D., will publish informative research articles that address primary care-psychiatric issues.

# Different answers to different questions Exploring clinical decision making by general practitioners and psychiatrists about depressed patients



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## ARTICLE INFO

### Article history:

Received 14 June 2013

Revised 15 January 2014

Accepted 5 February 2014

### Keywords:

Primary care

Psychiatry

Clinical decision making

Depression

Mental health care

## ABSTRACT

**Purpose:** Exploring three perspectives on differences between general practitioners (GP) and psychiatrists in clinical decision making about depressed patients. The gold standard perspective focuses on differences in decisions (output) as a result of lack of expertise, the input perspective relates differences to different information use and to other roles, and the throughput perspective attributes differences to other information processing.

**Methods:** Twenty-six psychiatrists and 25 GPs gave their clinical judgment on four on-line vignettes of increasingly severely depressed patients. Supplementary information on 15 themes could be asked for by clicking on underlined phrases. Dependent variables were the amount and type of extra information used, time needed and judgments of the severity of symptoms, appropriate treatment and health care providers.

**Results:** Compared to psychiatrists, GPs were more reluctant to refer to specialized care, they needed less supplementary information and reached their conclusion in less time. Their processing of information appeared to be more contextual. Psychiatrists used a more stable procedure in which information inspection took place independently of differences in the vignettes.

**Conclusions:** GPs and psychiatrists not only give different answers (treatment advices) because they have different expertise, but also because they have different questions due to other roles, and they use different clinical decision procedures. Insight in these differences can be useful for ameliorating collaborative mental health care.

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## 1. Introduction

Differences in clinical decisions between the generalist GP and the specialist psychiatrist are a much debated topic in (mental) health care. GPs and psychiatrists differ in the recognition of symptoms, in their use of diagnoses, as well as in the treatment they opt for. This is especially true for depression: GPs observe fewer depressive symptoms, are more reluctant to use the diagnosis depression, and opt for different interventions [1–3]. Three perspectives on understanding these differences can be distinguished.

If the *DSM* and evidence-based guidelines are seen as the gold standard, GPs under-recognize depression and underestimate its severity [1,4,5], make less adequate treatment decisions by opting for less intensive and more cursory treatments [6–10] and provide less evidence-based interventions [1,11,12]. From this gold standard perspective, it seems as if GPs lack knowledge and experience. Therefore they need more and better training in mental disorders and additional training in recognition and treatment of depression [8].

From a second perspective it could be argued that the differences between GPs and psychiatrists are due to “input” differences. The patients they see are different [1,3,13,14]; psychiatrists see patients with more severe and long-term psychiatric disorders [11,12], while GPs see patients with a number of undifferentiated psychological and somatic complaints. Because a large proportion of the problems presented to GPs is self-limiting, GPs have to judge whether the

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complaints are “suspicious” or not.<sup>1</sup> If complaints are judged not to be suspicious, GPs will make use of “watchful waiting” and empower the patients’ own healing capacities [15]. As gatekeepers to specialised care they avoid unnecessary referrals, not only because specialised care is more expensive, but also because of larger risks of iatrogenic complications such as nocebo effects [16].

Literature suggests a third alternative: differences in the way of processing information (the “throughput” perspective). Specialists (i.e. psychiatrists) apply exclusion procedures – elaborate hypothesis testing and excluding alternatives until only the “true” diagnosis is left. Generalists (i.e. GPs) on the other hand proceed according to a more including scheme: scanning information and forming a meaningful picture or gestalt of what is happening with the patient [17]. In generalist practice the decision process is more person-focused than disease-focused, in specialist practice the reverse [18].

Which perspective one prefers depends on one’s profession as well as on the organization of the system of mental health care. GPs decisions are more likely to be understandable from the second perspective, in which differences in outcome are the result of specific roles and tasks in the health care system. Psychiatrists’ decisions will more likely be understandable from the first perspective, in which differences are mainly attributed to level of expertise. The way health care is organized of course also influences the decisions’. In the Netherlands for example where the present study has been executed, a rather strong distinction is made between primary care and specialized (mental) health care. GPs are considered to be the gatekeepers of specialized care with as explicit task to minimize the number of referrals. The contrast between primary and specialized care will further increase due to the introduction of a new structure of health care in 2014 in which a more explicit and more strict distinction between general care, basic mental health care and specialized health care will be introduced.

Although the three perspectives on differences between GPs and psychiatrists do not exclude each other, they stem from three different research traditions, apparently without much interaction or mutual influence [19]. The gold standard-approach relies for a large part on outcomes of efficacy trials in combination with output from epidemiological surveys, the second “input” vision more often uses results from effectiveness studies in the field of primary care with special focus on the need- and demand characteristics of the patients [20], and the third information processing perspective is mostly based on qualitative studies of clinical reasoning [21]. These perspectives are seldom brought together in one study, with as a consequence that it is difficult to determine their unique as well as their incremental explanatory power. In the present paper these three approaches are brought together in one study.

This paper addresses the question how GPs and psychiatrists make clinical decisions about depressed patients: what decisions do they make, what information do they use for it, and what kind of heuristic do they follow? From the gold standard perspective, hypothesis 1, we expect to find differences in decisions about the severity and proposed treatment of the patients’ depression (output). Hypothesis 2 concerns the input perspective, we expect differences in information used. From the throughput perspective, i.e. our third hypothesis, we expect that psychiatrists and GPs consistently differ in their information processing. Special focus will be on the relative strength of each perspective, as well as on possible interactions between output-, process and input variables.

Exploring the differences in clinical decisions between GPs and psychiatrists may contribute to the ongoing debate between generalists and specialists in mental health care. The present study may reveal new insights in the relation between the use of specific

diagnostic information, the heuristics used and the final decision. The results could have practical consequences for better training programs as well as the organization of health care such as the allocation of patients to GPs and specialists.

## 2. Methods

We performed an online vignette study to compare the judgments and decisions of GPs and psychiatrists about depressed patients for whom they were asked to give a treatment advice.

### 2.1. Procedure

Participants received an internet link and were asked to read four vignettes (see Materials below). In the vignettes phrases of themes were underlined on which participants could click to get more information, which would then appear in a new window. The order of presentation of the vignettes was randomized over participants. After each vignette questions followed about the severity of the symptoms on a 1 to 5 Likert scale (ranging from low to high), the appropriateness of four types of increasingly intrusive treatment options (psycho-education, structure and support, psychological intervention and/or medication), and the appropriateness of increasingly specialized health care providers (general practitioner, social worker, clinical psychologist, and/or psychiatrist). As a proxy measure of the judgment process, the computer registered what and how much extra information participants looked at and how much time they spent studying the vignettes and the extra information. In the vignettes no specific reference was made to the treatment context in which this patient was seen.

### 2.2. Participants

Participants were recruited through a snowball method. We approached GPs participating in the academic GP-network of the Radboud University Nijmegen and asked them to give the names of colleagues elsewhere in the country. Starting point for the recruitment of psychiatrists was the local mental health center in Arnhem, then we asked them too to give names of colleagues. All doctors were contacted by telephone, email or letter.

Participants were 26 GPs (20 male and 6 female,  $M=20.31$  (S.D.=8.93) years of experience, range=6–34) and 25 psychiatrists (17 male and 8 female;  $M=17.72$  (S.D.=7.51) years of experience, range=7–37). Due to incomplete assessments (incorrect procedures), 2 psychiatrists and 1 GP had to be excluded from data-analysis.

### 2.3. Materials

Four vignettes describing depressed patients were constructed by members of a research group consisting of a psychiatrist, a GP and two (clinical) psychologists, in four steps.

First, the themes in the vignettes were decided upon. Based on a previous Delphi study that had determined which information about patients is necessary for adequate treatment decision making [22] fifteen themes were selected: 1. “recent health history”, 2. “psychiatric symptoms”, 3. “personality traits”, 4. “suicidal ideation”, 5. “history of symptoms”, 6. “history of treatment”, 7. “provoking factors”, 8. “genetic vulnerability factors”, 9. “vulnerability factors in the development”, 10. “relations”, 11. “social functioning”, 12. “somatic factors”, 13. “motivation for treatment”, 14. “biography”, and 15. “use of addictive substances”.

The second step consisted of constructing four different vignettes. The severity of the depressive symptoms increased over the vignettes. Vignette 1 presented a man who suffers from depressed mood and grief over the loss of his wife. Vignette 2 presented a woman with depressed mood, somatic problems, loneliness and a strong child

<sup>1</sup> “Suspicious” refers to diseases that will get worse without specialized medical intervention; “not suspicious,” to situations in which complaints are symptoms of self limiting diseases.

wish. Vignette 3 presented a man with an anti-social personality disorder, dependency traits and addiction. Vignette 4 presented a severely depressed and highly suicidal woman.

In the third step information was added about each of the fifteen themes, on three levels. The first level was the description of the theme in the vignette itself, the second level a more detailed description and the third level test results. The second and third level became visible by clicking on the themes, which were presented as hyperlinks (for example for the theme suicidal ideation, first level: “he wouldn’t mind *being dead*”). A click on this cue activated a textbox with the second level information: “In the last month he made two serious *suicide attempts* and formulated quite concrete plans for a third time”. With a third click on suicide attempts another textbox was shown with in this case the *Outcome Questionnaire 45* scores concerning suicidal ideation.

The fourth step concerned writing out the vignettes and complementing them with socio-demographic information. The vignettes had equal lengths of 220 words. Also a computer program was developed, which registered the treatment decisions (the answers to closed questions about treatment, treatment provider and severity of the complaints), as well as the use of extra information (the number of clicks) and the time participants spent studying the vignettes. The whole program, with vignettes and questions, was pilot-tested with four GPs and four psychiatrists, and adapted in reaction to their feedback.

#### 2.4. Data analysis

The first hypothesis, that there would be differences in output, as well as the second hypothesis, that there would be differences in input, were tested using multivariate analyses of variance with profession as between-subject factor and severity rating per vignette and health care provider, treatment and cues examined over the four vignettes taken together as dependent variables. Since decision time was not normally distributed (skewness=3.08, kurtosis=10.56), this variable was log-transformed. We tested the third hypothesis, that there would be differences in throughput that is: decision times, using pair-wise comparisons (t-test) between each pair of vignettes for each profession separately with decision times as dependent variables.

### 3. Results

#### 3.1. Output

Participants agreed about the severity of the problems in the vignettes; no differences were found between the professions (GP versus psychiatrist) in these severity ratings [ $F(1, 39)=.63, ns$ ] (see first row in Table 1 below). On a 5 point scale vignette 1 was scored  $M=2.17$  (S.D.=.80), vignette 2  $M=2.98$  (.82), vignette 3  $M=3.34$  (.86) and vignette 4  $M=4.61$  (.62).

**Table 1**

Mean severity ratings, treatment decisions and health care provider chosen by GPs and psychiatrists summed over the four vignettes

	GPs	Psychiatrists	F
Severity [1–5] ( $df=1,39$ )	3.46	3.28	.63
Treatment ( $df=1,173$ )			
Psycho-education	.11 (.31)	.28 (.45)	9.34***
Supportive therapy	.45 (.50)	.49 (.50)	.38
Psychotherapy	.51 (.50)	.47 (.50)	.29
Medication	.23 (.43)	.51 (.50)	15.03***
Health care provider ( $df=1,173$ )			
General practitioner	.38 (.49)	.17 (.38)	9.84***
Social worker	.27 (.44)	.11 (.32)	6.85***
Psychologist	.07 (.26)	.28 (.45)	14.39***
Psychiatrist	.31 (.46)	.49 (.50)	6.41**

\*\*  $p<.05$ .

\*\*\*  $p<.01$ .

As shown in rows 3 through 6 of Table 1, GPs and psychiatrists differed in their judgments of the suitability of two of the four types of treatment. Psychiatrists were more in favor of medical treatment and of psycho-education.

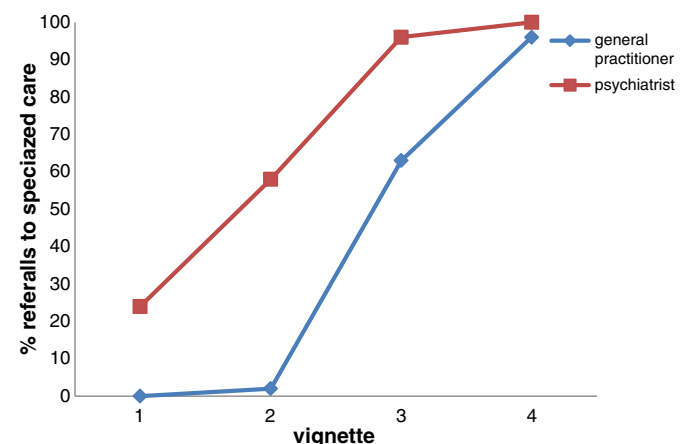
Overall GPs thought a GP was more suitable than a psychiatrist to provide care, while psychiatrists preferred psychiatrists over GPs (see the final four rows in Table 1). A larger percentage of psychiatrists than GPs thought that treatment by a clinical psychologist was suitable, while GPs chose treatment by a social worker more often. An example of such a difference between GPs and psychiatrists is shown in Fig. 1, presenting the percentage of referrals to specialized care by GPs and psychiatrists. Both disciplines agree when the problems are not considered as severe (vignette 1) – referral to specialized care is not considered appropriate – or on the contrary when the problems are very severe (vignette 4) when referral is always considered appropriate. Disagreement occurs in between: psychiatrists earlier refer to specialized care (vignette 2) as do GPs, who are still reluctant to refer vignette 3 to specialized care.

#### 3.2. Input

Each vignette contained 15 cues, presented as text with a hyperlink that the participants could click on to get more information. Overall, additional information was asked for with 44% of the cues. The most popular hyperlinks were “recent illness history” (64%), “suicide risk” (60%) and “substance use” (52%), the less often asked for were “biography” (33%) and “genetic vulnerability” (30%). Significant differences between vignettes were found for six cues (personality, history of complaints, treatment history, genetic vulnerability, social functioning, and substance use). The differences between the two disciplines in asking for additional information were even larger than the differences between vignettes, but no significant interaction effects between vignette and discipline were found. Table 2 displays the percentages of GPs and psychiatrists who chose each type of extra information.

Differences between the two disciplines were most obvious in the total number of cue-clicks (last row in Table 2). Of the GPs 39% clicked on cues for additional information, versus 51% of the psychiatrists. The largest differences were related to “health history”, “history of symptoms” and “(co-morbid) somatic factors”.

GPs looked most at “suicide risk”, “recent health history”, “addictive substances”, “social functioning” and “motivation” (see first column Table 2). Most of these cues were also often chosen by psychiatrists, except “motivation” (second column Table 2). The cue “history of symptoms” was more popular among psychiatrists. GPs did not pay much extra attention to “genetic factors”, “somatic factors”, “biography”, “relations”, and “provoking factors”, whereas psychiatrists paid less attention to “developmental factors”.



**Fig. 1.** Referrals to specialized mental health care by general practitioners and psychiatrists (% of total referrals).

**Table 2**

Percentages of GPs and psychiatrists looking at the fifteen types of additional information summed over the four vignettes

	GPs %	Psychiatrists (%)	F, <i>df</i> =(1,175)
Psychiatric symptoms	33	46	3.04*
Recent health history	53	77	11.59***
Provoking factors	32	45	3.02*
Personality	41	46	0.33
Suicide risk	55	66	2.21
History of symptoms	40	65	11.28***
History of treatment	41	52	1.89
Vulnerability factors, development	40	43	1.62
Vulnerability factors genetic	23	37	4.14**
Social functioning	45	58	3.07*
Relations	33	35	0.75
Somatic factors	31	51	7.38***
Motivation	44	39	0.46
Biography	32	34	0.67
Addictive substances	46	59	3.12*
Total (15 cues)	39	51	33.54***

\*  $P < .10$ .

\*\*  $P < .05$ .

\*\*\*  $P < .01$ .

### 3.3. Throughput

There were significant differences between GPs and psychiatrists in processing time. Log-transformed time spent over the four vignettes together was .30 for GPs and .48 for psychiatrists [ $F(1,171)=9.86, p=.002$ ]. The (log-transformed) time it took participants to complete each of the four vignettes separately is shown in Fig. 2. Plausibly, the more information they gather (see Input above), the more time consuming the total decision process.

The (log-transformed) times in Fig. 2 also showed that the time GPs needed for information processing varied per vignette. Compared to the other vignettes, GPs needed most time for vignette 3 (the difference with vignette 1 was significant,  $t(22)=2.59, p=.017$ , as was the difference with vignette 2,  $t(22)=2.04, p=.05$ , and the difference was present but not significant with vignette 4,  $t(22)=1.76, p=.09$ ). Used time was related to disagreement. GPs agreed that the patients in vignettes 1 and 2 were best treated in primary care (87% resp. 70% of the GPs opted for treatment in primary care) whereas the patient in vignette 4 needed specialist care (90% of the GPs opted for specialist care). These decisions did not take much time.

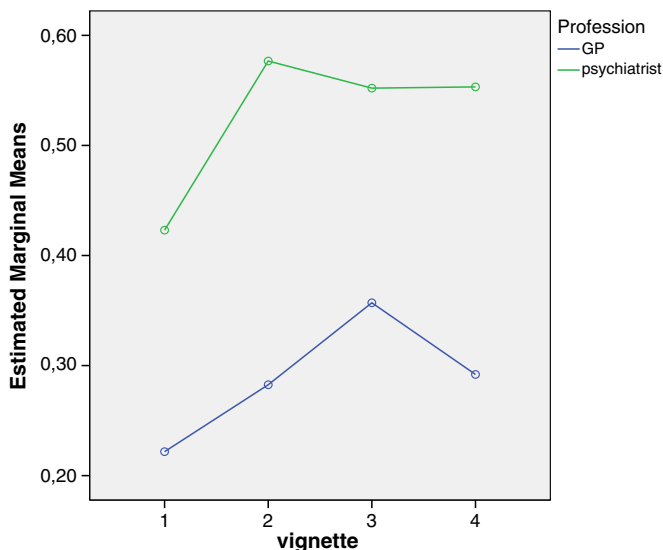


Fig. 2. Mean log-transformed decision times GPs and psychiatrist per vignette.

That was different with vignette 3. The decision here took more time; moreover GPs hesitated where to treat this patient (38% opted for specialist care by a psychiatrist, 25% for primary care; and 37% for another unspecified type of treatment. Disagreement occurred in the case where the GPs had to decide whether the symptoms were “suspicious” or not.

Psychiatrists worked in a different way. Although the decision time for vignette 1 was clearly lower, the average decision time needed by psychiatrists was quite stable and not significantly different between the vignettes. Once psychiatrists judged that the patient had a serious problem (vignettes 2, 3 and 4 with a severity score  $>2.5$ ) they opted for the same extra information and they almost always indicated that the patient had to be treated by a psychiatrist.

## 4. Discussion

The results of this study confirm the viability of the three perspectives described in the introduction. In line with hypothesis 1 we found that psychiatrists prefer a specialist health care provider who prescribes medication or gives psychotherapy, whereas GPs prefer primary care workers who offer supportive treatment. So, psychiatrists and GPs indeed give different answers.

In line with the second hypothesis we found that psychiatrists investigate much more information and are more interested in health and symptom history than GPs. GPs spend less time collecting information but look relatively more at motivation, relations and social functioning. They seem to focus more on subjective feelings of illness and the patients' functioning and their possibilities (empowerment). These differences between GPs and psychiatrists are related to their different positions and their roles in the health care system (primary care versus specialized care) [23]. As gatekeepers GPs tend to aim for a reduction in type 1 errors (false positives: erroneously detecting a mental disorder that needs treatment in specialized care), whereas psychiatrists, as the advocates of their own medical expertise, tend to reduce type 2 errors (false negatives: erroneously not detecting a mental disorder which needs treatment in specialized care). It is because they generally see different patients (questions), they give different answers. This second perspective does not exclude the first one.

The most intriguing results of our study are the differences between psychiatrists and GPs in processing information, as predicted from the third hypothesis (throughput). Psychiatrists need more time, and once they consider specialized care as appropriate, they show consistent examination of the same information. Their approach seems more or less independent of the specific problems portrayed in the different vignettes. GPs tend to quickly scan the patient information, and not to ask for much supplementary information. GPs change their strategy when this global screening leads to doubt (the symptoms are suspicious or not). In case of doubt they need more time and more information to come to a conclusion. These structural differences in information processing between the two disciplines are directly related to their tasks; GPs seem to stop their enquiry as soon as they have made their referral decision. Psychiatrists do not have the option of referral, but they have to provide each patient with a complete assessment and treatment plan. The two groups need different skills, which makes their work very complementary. This complementarity explains that, even when the questions are identical (same patients), the answers are different. In other words: due to these differences in information processing GPs and psychiatrists perceive even the same patient as a different one.

The results of this study do not support all of our expectations. A first example is the judgment of severity: we had expected but did not find that GPs and psychiatrists would differ in their judgments of severity. We had also expected differences in “exclusion” or “inclusion” procedures in which GPs would show

a stable process of including information, but we found a contextual screening approach with variation in processing time and clicking on cues per vignette. And instead of excluding alternatives, psychiatrists gathered their diagnostic information, according to a well-structured format following some more or less explicit diagnostic protocol [24], exactly the way internists proceed [6]. A last example here is that we had expected a more or less linear relation between severity, use of cues and decision time. We found, however, that GPs needed the most time for vignette 3, which was not the most severe one, whereas with psychiatrists there were hardly any difference between vignettes in time and number of cues needed to decide. The fact that some of our predictions appear to be unsupported, not only suggests that our understanding of differences between generalist and specialist mental health care is still incomplete, it also shows that our study has provided us with figures that need further exploration and investigation. A replication of this study with more vignettes and more respondents outside The Netherlands will certainly lead to more generalizable insights.

The use of different ways of processing information may explain why training of GPs has only moderate effects on the number of correct classifications (*DSM*). As long as the information process itself is not targeted, GPs will, on the basis of the same information, continue to reach different conclusions than psychiatrists. If more correct *DSM* classifications are desired, training programs should lead to deeper and more structural changes. However, it is not evident that this goal is as desirable as it appears to be. On the basis of our data we would predict immediate consequences for GPs' role as gatekeepers, resulting in many more false positives (error type I). The same kind of argument also holds true for psychiatrists who overestimate the necessity of intrusive interventions such as medication and intensive psychotherapy [25–27]. Here too, this tendency is tied up with their way of information processing and could be interpreted as a side-effect of their strategy to keep the number of type II failures as low as possible.

The differences between GPs and Psychiatrists do not necessary lead to the conclusion that change is needed. On the contrary, if the two disciplines share a vision on collaborative care, the complementary roles of both disciplines could be further elaborated upon [28]. It could be fruitful to interpret our data in line with Stange and Ferrer's "Paradox of primary care" [29] These authors suggest that the differences between the two disciplines could have a positive effect on the quality of mental health care. Our data provide insight in these differences; what is still needed is insight in the conditions under which a positive effect of complementary perspectives could occur.

#### 4.1. Limitations

The results of this study should be interpreted with caution due to the small number of respondents and a possible bias in their selection. In both groups of GPs and psychiatrists younger women are underrepresented. We also expect, that our participants have more direct relations with the university, especially with the Nijmegen University. This bias has probably influenced the outcomes. Given the pilot character of this study, we have taken it for granted.

Also the design we used is not uncontested, because vignettes only represent real clinical situations to some extent. Yet vignettes present patients who are in all aspects identical [30], and it has been shown that vignettes are therefore uniquely suitable for comparative analyses between different professional groups [31], which is what we aimed to do. A third reason for caution is related to the rather small number of vignettes. Our study might thus be seen as a first attempt rather than as one giving final answers.

## 5. Conclusions

GPs and psychiatrists differ in clinical decision making by giving different answers to different questions. Because GPs are the gatekeepers of the specialized care provided by psychiatrists, they look for other patient information and are more inclined to less intensive interventions. We suggest that even if their clinical questions would be the same, GPs and psychiatrists would still give different answers, because they make use of different decision processes. These differences in decision making make it quite difficult for them to understand the answers of the other profession, or to appreciate it as complementary to their own decision. We argue that the quality of mental health care could be ameliorated by understanding these differences and making use of them when implementing collaborative care.

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