Psychologists’ Judgements of Diagnostic Activities: Deviations from a Theoretical Model

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In this article, we describe an investigation into the diagnostic activities of practicing clinical psychologists. Two questionnaires were filled in by 313 psychologists. One group of psychologists (N = 175) judged the necessity of diagnostic activities; the other group (N = 138) selected the activities they would actually perform. Results showed that more participants thought that diagnostic activities were necessary than there were participants who intended to actually perform those activities. Causal analysis, by generating and testing diagnostic hypotheses to form an integrated client model with an explanation for the problem, was judged least necessary and would not be performed. We conclude that a discrepancy exists between the number and types of activities psychologists judged to be necessary and they intend to actually perform. The lack of attention for causal analysis is remarkable as causal explanations are crucial to effective treatment planning. Copyright © 2008 John Wiley & Sons, Ltd.

INTRODUCTION

The goal of psychodiagnosis is to understand the complaints of a client and to provide an indication for their treatment. In the psychodiagnostic process, information about the client’s complaints, problems and environment is gathered in interviews and through tests, until a classifying and explanatory diagnosis is reached and treatment decisions can be made (De Bruyn, Rujsenaars, Pamijer, & Van Aarle, 2003; Ruiter & Hildebrand, 2006). The goal of the psychodiagnostic process is to form an integrated picture of the client, with a problem description and an explanation for the problem, and to propose a possible treatment for the problem based on this integrated picture. Psychologists may use several methods to collect relevant information, such as diagnostic interviews, tests or questionnaires. The final diagnosis is the result of an integration of the information gathered and the decisions made along the way. Theoretical models have been developed to aid psychologists in organizing and judging the importance of client information. These models usually contain several sequential phases—from describing the problem to selecting a treatment method (De Bruyn et al., 2003; Vertommen, Ter Laak, & Blijtebieir, 2005). This paper focuses on the question of which diagnostic activities are considered theoretically necessary in diagnosing a client and which would be actually used. As further treatment planning depends on an accurate diagnosis and an effective diagnostic process, research into diagnostic activities can be used to improve both the diagnostic process and the diagnosis.

Since Meehl (1954) challenged the value of intuitive clinical judgement, prescriptive methods for collecting and interpreting information in psycho
mental resources efficiently. Psychologists often and time limitations force psychologists to use their too late to be effective. In clinical practice, cognitive generate, and if they receive feedback it is often lacking (Dawes, 1996; Garb, 1989). Psychologists receive minimal feedback on the accuracy of their diagnoses or on the quality of the hypotheses they generate, and if they receive feedback it is often too late to be effective. In clinical practice, cognitive and time limitations force psychologists to use their mental resources efficiently. Psychologists often generate mental short cuts (heuristics) to quickly diagnose a client (see Garb 1998, for an extensive review of the use of heuristics in clinical psychology). Using short cuts in reasoning is not uncommon in other fields. Research on solving chess and medical problems showed that chess players and physicians do not always adhere strictly to theoretical problem-solving models to solve the problems they face (Boshuizen & Schmidt, 1992; Patel, Arocha, & Zhang, 2005). Several studies have compared the theoretical problem-solving approach with the actual practice of chess players (see Ericsson & Lehmann, 1996, for a review). Results showed that successful chess players do not extensively search for possible moves, as prescribed by the theoretical model but rather selected moves based on cued recall from memory. In the medical field, it was assumed that physicians use some form of hypothesis testing in diagnostic problem solving (Elstein & Schwarz, 2002). However, empirical studies showed that physicians’ diagnostic reasoning is also influenced by rapid pattern-recognition processes (Lesgold et al., 1988). Deviations from a theoretical model are related to clinical experience. The reasoning strategies used by experienced professionals differ from those used by novices (Shanteau, 1988). Reasoning strategies, thus, seem to change as clinical experience increases and new ways to cope with time and cognitive limitations are created.

Empirical studies suggest that the same is true for clinical psychologists. As experience increases, clinical psychologists approach the psychodiagnostic process in a more flexible way, based on the clinical knowledge they have acquired in practice (Brammer, 1997; Bus & Kruizenga, 1989; Hillerbrand & Claiborn, 1990). Bus and Kruizenga (1989) showed that diagnosing a client becomes a routine process. They expected that the diagnostic process would follow the same procedure as scientific problem solving. However, the psychologists in their study seemed to gather information without any hypotheses or explicit goal. Also, recommendations could not be traced back to the diagnoses the psychologists formulated. This finding was confirmed by Witteman and Koele (1999), who found that there was no relation between the psychologists’ arguments and the treatment proposals. Hillerbrand and Claiborn (1990) claimed that this routine process of psychologists is based on their knowledge organization. They argued that the psychologists’ organization of their knowledge base changes through clinical knowledge they acquire in practice, which would result in clearer and more accurate problem representations. A more accurate problem represen-
tation could increase diagnostic accuracy. A study by Brammer (1997) confirms these findings. It found that more experienced psychologists asked fewer questions but that these questions were more often related to diagnostic categories. Brammer argued that these questions were based on implicit theories psychologists had formed about the clients and that they used these questions to fill up the gaps in their theories. However, in these studies, it remains unclear which steps are actually performed in the diagnostic process.

We aim to fill in the gap in the existing knowledge about clinical psychologists’ diagnostic reasoning by comparing their actual diagnostic process, from registration to treatment selection, with the activities described in the theoretical models they are taught during training. The little research there is has mainly focused on the personal descriptions of psychologists about their diagnostic process, for example through verbal protocols (De Kwaadsteniet, Krol, & Witteman, 2008; Witteman & Kunst, 1997). A drawback of these studies is that the terms used by the psychologists to describe their diagnostic activities cannot be directly compared. Providing psychologists with a common language as a frame of reference has been advocated by Beutler (1991) to overcome these limitations. This is what we undertake in this study. To be able to identify and compare the diagnostic activities, we used lists of diagnostic activities prescribed by theoretical models as frames of reference for the psychologists to make their diagnostic process explicit.

The current study aims to establish which diagnostic activities clinical psychologists judge to be theoretically necessary and which activities they intend to actually perform themselves. A distinction is made between judgements of the necessity of diagnostic activities and the intention to actually perform these activities to control for possible social desirability effects. Several review and meta-analytical studies (Ajzen, 2001; Ajzen & Fishbein, 1977; Glasman & Albarracin, 2006) have shown that there is a difference between what people consider necessary and what they actually do. Although measuring the intention to perform activities is not equal to measuring the actual behaviour, it approximates the actual behaviour best.

METHOD

Participants

Participants for both questionnaires were 313 members of the Dutch Institute of Psychologists (NIP) mental health care division. The mean age of the participants was 44.29 years (Standard Deviation [SD] = 11.21, range = 23–79 years). The majority of the participants had completed post-graduate education (87%), were registered mental health care psychologists (32%), had a BIG-registration1 (78%), worked part time (53%) and were employed in mental health care (48%). The theoretical orientation of the majority of the participants was cognitive–behavioural (55%). They worked with adult clients (50%) and with clients with personality disorders. On average, the participants spent most of their time treating clients, next on diagnosing clients, then on executive tasks, and they spent least time on scientific research.

A total of 175 psychologists filled in the Questionnaire Necessary Activities (the NA-group) and 138 psychologists filled in the Questionnaire Performed Activities (the PA-group; see Materials). Except for clinical setting, with more psychologists working in a hospital in the NA-group than in the PA-group (\(\chi^2 = 16.70\), degree of freedom = 7, \(p = 0.019\)), the groups did not differ in any other background variable.

Procedure

By email we invited all members of the NIP mental health care division to take part in the study. Participants who accepted the invitation were sent a second email with a hyperlink to one of the two web-based questionnaires (see Materials; Cope, 1993). The participants were randomly assigned to one of the two questionnaires.

Psychodiagnostic Model

Lists of diagnostic activities used in this study as frames of reference for responding were derived from the DC (De Bruyn et al., 2003). The DC was chosen because it provides a clear specification of the diagnostic activities that a psychologist ought to perform. The wording used in the DC is based on generic terms recognizable both for participants educated with the DC and for participants educated with the BIG Act, known through the Dutch acronym as the BIG Act, regulates the provision of care by health care professionals. Only registered individuals may use the legally protected title. The register enables the expertise of the registered practitioners to be recognized by all.

1 The Individual Health Care Professions Act, known through the Dutch acronym as the BIG Act, regulates the provision of care by health care professionals. Only registered individuals may use the legally protected title. The register enables the expertise of the registered practitioners to be recognized by all.
Judgements of Diagnostic Activities

Based on De Bruyn et al.’s (2003) DC, we distinguished six main categories and 63 diagnostic activities within the main categories (see Appendix A). The first main category, Registration (11 activities), has the objective of deciding whether the assessment process is continued. The goal of the second main category, Complaint analysis (11 activities), is to identify and summarize the client’s complaints and describe them in behavioural terms. In the third main category, Problem analysis (10 activities), the problematic behaviour of the client is explored and the problem is stated in objective, testable terms. In the fourth main category, Explanation analysis (11 activities), alternative diagnostic hypotheses are generated and tested so that an integrated picture of the client with an explanation for the problem can be formed. After that, a method of treatment is selected in the fifth main category, Indication analysis (15 activities). The final and sixth main category, Diagnostic scenario (5 activities), has the objective of formulating a plan to answer the client’s diagnostic questions.

Materials

We developed two web-based questionnaires. One questionnaire asked participants to judge the necessity of the diagnostic activities derived from the DC (the Questionnaire Necessary Activities), and the other questionnaire asked participants to select the diagnostic activities they actually intend to perform in diagnosing a client (the Questionnaire Performed Activities), to be referred to as the NA-group and the PA-group, respectively.

Each questionnaire started with a description of the purpose of the study and the structure of the questionnaire. Then a case description was presented (see Appendix B). This case was selected to be recognizable for every participant and was checked with three experienced psychologists. The participants had to keep this particular client in mind while filling in the questionnaires. The participants could also consult a list with explanations of the concepts used in the questionnaire.

The next part was different for the two questionnaires. The main categories and the diagnostic activities within the main categories were both presented in a fixed randomized order to the participants. The NA-group was asked to ‘indicate, for each activity, to what extent you deem that activity necessary in diagnosing the client described in the case vignette’ on a four-point Likert scale ranging from ‘absolutely unnecessary’ to ‘absolutely necessary’. The PA-group was asked to ‘select the diagnostic activities from each main category that you actually intend to perform with the client described in the case vignette’. Activities the participants did not intend to perform could be skipped.

Both questionnaires contained 14 open-end and multiple-choice questions about the background and job characteristics of the participant. These questions asked about gender, age, work experience, BIG-registration, part-time/full-time appointment, clinical setting, theoretical orientation, client population, specialization in disorders, post-graduate education, and time spent on diagnosis, treatment, executive tasks, and scientific research. Each questionnaire ended with a request to participate in future research and a statement thanking the participants for their cooperation.

Analysis

To facilitate the comparison of the results of the two questionnaires, the measurement scale of the Questionnaire Necessary Activities was adjusted. For this purpose, the response options ‘absolutely unnecessary’ and ‘unnecessary’ were recoded into ‘(absolutely) unnecessary’. Likewise, ‘absolutely necessary’ and ‘necessary’ were recoded into ‘(absolutely) necessary’.

To establish which diagnostic activities psychologists considered necessary and which activities they intended to actually perform, percentages were calculated. An independent samples t-test was performed to test for differences between the answers on the two questionnaires. To test for differences between main categories within each questionnaire, analyses of variance (ANOVAS) were performed. A Bonferroni procedure was used to maintain an overall significance level of 0.05.

Also, background characteristics considered theoretically relevant were selected and their influence on the selection of activities was investigated. Work experience, training, theoretical orientation and setting were entered into a multiple regression analysis.

RESULTS

Figure 1 shows the percentage of participants in the NA-group who considered an activity (absolutely)
necessary (dotted line) and the percentage of participants in the PA-group who actually intended to perform that activity (straight line).

The percentages of participants differed for the two questionnaires, as can be seen in Figure 1. Percentages of the NA-group are, on average, higher than percentages of the PA-group (76% and 65%, respectively). This means that, for any activity, about three-fourths of the NA-group judges that activity (absolutely) necessary, while about two-thirds of the PA-group intends to perform that activity.

To compare main categories of activities, results from Figure 1 were comprised into an overview of these categories. Table 1 shows the percentages of participants for each main category, per questionnaire.

First, an independent samples $t$-test with percentages of the main categories as dependent variables and questionnaire type as a grouping factor was performed to test for differences between the two questionnaires. Significant differences were found for Registration ($t(299) = 6.64, p < 0.001$), Complaint analysis ($t(307) = 2.61, p = 0.01$), Problem analysis ($t(309) = 3.31, p = 0.003$), and Indication analysis ($t(306) = 6.48, p < 0.001$). It can be seen in Table 1 that the percentages of the NA-group are higher than those of the PA-group. This means that for the activities of these main categories, a significantly larger part of the participants judged these activities necessary than participants from the other group who intended to actually perform them.

Second, two ANOVAs were performed, one for each group, to test for differences between the main categories. The percentage of participants was the dependent variable and the main category was the fixed factor (six levels). The results for the two groups will be discussed separately.

For the NA-group, a significant effect of main category was found ($F(5, 10944) = 72.22, p < 0.001$). Post hoc analyses showed that Complaint analysis (83%), Registration (82%) and Indication analysis (80%) did not differ significantly from each other. Problem analysis (79%) differs significantly from Complaint analysis but not from Registration and Indication analyses. Diagnostic scenario (69%) and Explanation analysis (62%) differ significantly from every other main category. As can be seen in Table 1, the activities from the Complaint analysis, Registration and Indication analysis were judged necessary by more participants than activities from the other main categories. The activities from the
main categories Diagnostic scenario and Explanation analysis were judged necessary by the lowest percentage of participants.

For the PA-group also, a significant effect of main category was found ($F[5, 8688] = 30.34, p < 0.001$). *Post hoc* analyses showed that Complaint analysis (76%) differed significantly from every other main category. Next, Problem analysis (69%) and Diagnostic scenario (68%) differed significantly from every other main category but not from each other. Indication analysis (62%), Registration (61%), and Explanation analysis (58%) also differed significantly from the other three main categories but not from each other. Table 1 shows that activities from the Complaint analysis would be performed by the largest part of the participants. Activities from the Indication analysis, Registration and Explanation analysis would be performed by the least number of participants.

It should be noted that the participants gave the activities from the Explanation analysis the lowest score on both questionnaires. This means that these activities were judged least necessary and that participants intended to actually perform them least often.

A multiple linear regression analysis was performed to investigate the influence of work experience, training, theoretical orientation and setting on the percentages of participants selecting an activity. These predictors accounted for 10% of the variance in percentages for the Questionnaire Necessary Activities ($R^2 = 0.099$), which was statistically significant ($F(17, 7164) = 34.35, p = 0.001$).

### CONCLUSIONS AND DISCUSSION

With the current study, we aimed to investigate the diagnostic activities that psychologists in practice judge necessary and would actually perform. Results shows that activities considered necessary and to be actually performed differ in number and kind.

In general, activities are more often judged necessary than that people would actually perform them. More specifically, more participants judged the activities from Registration, Complaint analysis, Problem analysis and Indication analysis necessary than there were participants who intended to actually perform these activities. It appears that what is considered necessary in theory is not always performed in practice.

Furthermore, the results show that activities from Registration, Complaint analysis and Indication analysis were judged equally necessary, while activities from the Complaint analysis were most often intended to be actually performed. Activities from the Explanation analysis were judged least necessary and also least likely to be actually performed. It seems that psychologists mainly focus on deciding whether to continue the diagnostic assessment process (Registration), identifying and summarizing the client’s complaints (Complaint analysis), and selecting a treatment method (Indication analysis). Generating and testing alternative diagnostic hypotheses to form an integrated
model of the client with an explanation for the problem (Explanation analysis) receive much less attention.

The theoretical diagnostic model used as a frame of reference for the activities to be judged, the DC, assumes that each part of the diagnostic process is equally important. Results show that the relevance and intention to actually perform the diagnostic activities are judged differently.

More specifically, the lack of focus on the Explanation analysis is noteworthy. An integrated model of the client including possible causal explanations for the problem behaviour, i.e., the end result of the Explanation analysis, is an essential condition for further treatment planning (Kendjelic & Eells, 2007; Krol, Morton, & De Bruyn, 2004; Kuyken, Fothergill, Musa, & Chadwick, 2005). While this is true theoretically, explanation does not receive much attention from the participants in our study. A possible explanation could be that psychologists do not use causal reasoning to generate possible explanations of the problem behaviour. Psychologists could be building a schema with explanations directly upon seeing the symptoms (Mayfield, Kardash, & Kivlighan, 1999). Recognizing the pattern of these symptoms might activate the schemas of the disorders, which include diagnostic explanations. Explicit causal analysis about explanations then becomes unnecessary. An alternative explanation could be that the participants use causal analysis implicitly. This explanation is supported by research by Kim and Ahn (2002), who found that psychologists’ diagnostic reasoning is based upon personal, implicit causal theories about disorders. These causal theories may correspond to Brammer’s (1997) implicit theories. Based on a few observations, psychologists appear to form a theory about the client’s problem. They then use this theory to guide further information gathering (Brammer, 1997). These implicit theories preclude the necessity to explicitly reason causally. Thus, psychologists might use pattern recognition to see whether the pattern of complaints and problem behaviour of a specific client fits their personal, implicit, causal theory. If so, then explicitly generating and testing possible explanations would be redundant.

The regression analysis showed a significant influence of the background characteristics on the selection of activities and offers insight into the role of the psychologists’ background in the decision-making process. Nevertheless, this result needs to be regarded with some caution. The psychologists’ background characteristics do determine the diagnostic decision-making process to some extent. However, individual contributions of work experience, training, theoretical orientation and setting to the diagnostic decision-making process were not determined due to heterogeneity of the predictors used and limitations of the data collected. The influence of the individual predictors should certainly be explored further in future research.

It should be noted that there was a difference in clinical setting between the NA-group and the PA-group. That there were more psychologists working in a (general) hospital in the NA-group than in the PA-group may have resulted in differences in the decision-making process. For example, psychologists working in a hospital might be used to diagnosing more complex and severe problems.

Implications
Clinical psychologists do not seem to practise what they preach. By comparing their diagnostic activities to a theoretical model, the DC, we saw that one activity in particular seemed to be neglected: the explanation analysis. Since proper treatment planning depends on proper explanation, this activity should be the focus of further studies: when do psychologists engage in explanatory diagnosis, and what are the consequences for treatment planning both when they do and do not explicitly look for explanations of their clients’ problems? Also, more attention could be paid to designing educational aids to training psychologists to follow the prescriptions of a diagnostic process model and specifically to reason causally about their clients’ complaints.

REFERENCES


APPENDIX A: DIAGNOSTIC ACTIVITIES (IN RANDOMIZED ORDER)

Registration

a01 Establish whether people involved are prepared to make arrangements about their contribution.
a02 Determine the follow-up procedure in writing.
a03 Establish whether diagnostic examination is necessary.
a04 Decide whether the registration procedure can be continued.
a05 Check the demands for the length of the treatment.
a06 Establish whether the diagnostician can perform the examination.
a07 Establish whether the formal positions are in conflict with legal provisions.
a08 Determine client’s motives and expectations.
a09 Make arrangements about the follow-up procedure.
a10 Determine who are involved at registration.
a11 Determine the follow-up procedure orally.

Complaint analysis

k01 Check whether complaints and diagnostic questions are complete.
k02 Formulate the goals of the complaint analysis.
k03 Order complaints and diagnostic questions in importance.
k04 Explain the importance of the complaint analysis to the client.
k05 Go over the arrangements from registration.
k06 Record the order of the complaints and diagnostic questions in writing.
k07 Check interpretation of the complaints against the client’s interpretation.
k08 Convert client’s experience of the complaints into diagnostic questions.
k09 Check that complaints and diagnostic questions are consistent.
k10 Formulate the complaints.
k11 Explain the methods of the complaint analysis.

Problem analysis

p01 Compare the clients’ behaviour to dysfunctional behaviour categories in the literature (e.g., DSM).
p02 Make an inventory of problem behaviours and the situations in which they occur.
p03 Discuss the problem analysis with colleagues.
p04 Establish the risk factors of the client’s behaviour.
p05 Assign disorders to a category with the help of a classification system.
p06 Assess the severity of the problems.
p07 Describe the problem behaviour.
p08 Explain the classification system to the client.
p09 Weigh the positive and negative behaviours.
p10 Order the disorders.

Explanation analysis

v01 Operationalize the hypotheses about the problem’s explanation into testable predictions.
v02 Evaluate the results of testing the diagnostic explanations.
v03 Test the diagnostic explanations.
v04 Split up the diagnostic reasoning schema into testable statements.
v05 Check whether there is knowledge that allows the testing of the diagnostic explanations.
v06 Determine the degree of certainty about the results of testing the diagnostic explanations.
v07 Order causal relations between problems and conditions into a preliminary diagnostic reasoning schema.
v08 Process the results of testing the diagnostic explanations into an integrated model.
v09 Perform a literature search on the causal relationships between problems and conditions.
v10 Establish the criteria for the testable predictions.
v11 Analyse the hypotheses about the explanations of the client’s problem.
APPENDIX B

Case Description

The case description below is based on the first conversation between a client and the psychologist who is treating her.

Case Description: Mrs. W.

Mrs. W. says that she feels she hasn’t gotten over the death of her mother. Her mother passed away 2 years ago. Since a year ago, Mrs. W. often cries suddenly, she talks to her mother in her thoughts, and she often visits her mother’s grave. Her mother’s death also keeps her preoccupied in other situations. At work, Mrs. W. finds it hard to distance herself from the stories she hears about accidents. She notices that she has become more sensitive. She feels that she has lost her joy of living. Furthermore, she talks about the strains of taking care of her sister who has multiple sclerosis and about the burden of her husband’s alcohol addiction. They separated 8 years ago but never got a divorce. She also feels weighed down by having to take care of her father after her mother’s death.

Three years ago, she was hospitalized in a psychosomatic clinic for 3 weeks because of her problems with her husband. This did not lead to the expected relief. Mrs. W. did not open herself up to the therapeutic possibilities. Mrs. W. is still married, but she does not live together with her husband, although they have three sons together. The eldest was born in 1972. Two years ago, Mrs. W. started a new relationship but she became less involved with her boyfriend the past few weeks. In the past years, she has been taking Oxazepam in stressful situations because of her restlessness and sleeping disorders. There is no regular intake.

For the past 15 years, Mrs. W. has been working in the administration department of a physical therapy practice. At the moment, she works 28 hours a week.