

# Do my feelings fit the diagnosis? Avoiding misdiagnoses in psychosomatic consultation services

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**Objective:** Misdiagnoses are a major concern with far-reaching consequences, which have rarely been studied systematically. Therefore, the present study evaluated factors causing misdiagnoses identified by psychosomatic consultation services.

**Methods:** Over a period of 5 years, all patients referred to the psychosomatic consultation services of a large university hospital were analyzed consecutively for misdiagnoses. We analyzed the reasons for suspecting a misdiagnosis through systematic introspection during peer supervision and evaluated the causes during semistructured interviews with the referring physician.

**Results:** In 165 psychosomatic consultations, 24 disorders were misdiagnosed (15%). The reasons for questioning the initial diagnoses were the consulting physician's feelings and thoughts resulting from the patients' inappropriate behavior during the consultation and unusual clinical features. In eight cases, the misdiagnosis resulted from availability bias, and in three cases each it resulted from confirmation bias, search satisfaction bias, and framing effect and attribution bias. However, lack of medical knowledge played only a minor role.

**Conclusion:** This study highlights the nonrational elements of the diagnostic process. In the context of psychosomatic consultation services, introspection and intuitive thought processes are helpful in identifying misdiagnoses. Self-satisfaction (availability bias) and overconfidence (confirmation bias) are most likely to result in misdiagnoses.

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## INTRODUCTION

According to the World Alliance for Patient Safety, which was founded by the World Health Organization, misdiagnoses are a major concern and have more severe consequences than incorrect treatment.<sup>1,2</sup> In their guidelines,<sup>3</sup> the Alliance states that the risk of misdiagnosis can be reduced by a systematic recording and structured analysis of errors. For this reason, health care systems implemented the Critical Incident Reporting System (CIRS or CIRSmed),<sup>4-7</sup> which has become well established. The aspect of patient safety management<sup>4</sup> calls for improvements in diagnostic safety.<sup>8,9</sup> Although diagnostic errors are known to occur, the cause is less clear and studies identifying reasons for misdiagnoses are lacking.<sup>8,10,11</sup>

The frequency of misdiagnosis in medicine has remained unchanged for decades and ranges from 10% to 15%.<sup>12</sup> It was long assumed to be much higher (up to 30%) in patients with suspected psychosomatic disorders,<sup>13</sup> but this number was later revised because of methodological errors in the previous research.<sup>14</sup> The frequency is now assumed to be about 4%.<sup>15</sup>

The best method for investigating reasons for misdiagnosis is case analysis.<sup>10,16,17</sup> One of the few recent studies on this topic retrospectively investigated the causes of misdiagnosis in 20 patients in a psychosomatic outpatient clinic.<sup>18</sup> The causes were the insufficient attention paid to the development of symptoms, lack of critical evaluation of the coherency of the symptoms and diagnosis, and incomplete medical examinations. These causes are in line with the findings of an older study.<sup>19</sup> Another recent publication<sup>20</sup> lists the most common organic diseases misdiagnosed as psychogenic disorder and the various cognitive biases leading to the misdiagnoses as follows: (a) availability bias (the immediate suspected diagnosis is reluctantly corrected), (b) confirmation bias (information that supports the suspected diagnosis is valued more highly than information that contradicts it), (c) search satisfaction bias (further information is no longer looked for once the first plausible solution is found), (d) framing effect (diagnostics are influenced by the framework in which patients are seen), (e) attribution bias (a diagnosis is favored due to the appearance of or sympathy for a patient), (f) premature closure (a diagnosis is confirmed although not all relevant information is available), (g) base rate neglect (common diagnoses are ignored in favor of rare but spectacular diagnoses), and (h) action bias (if the diagnosis is unclear, acting is preferred over waiting).<sup>20-25</sup>

Diagnoses are the result of clinical reasoning. According to the dual process theory,<sup>24,26</sup> two different modes are involved in the diagnostic thought process: (a) an unconscious, rapid, automatic, experience-based (so-called intuitive) thought process and (b) a conscious, slow, and deliberative (so-called analytical) thought process.<sup>27-29</sup> The intuitive process is assumed to be more important than the analytical process when making a diagnosis,<sup>26,30</sup> and a lack of medical knowledge is assumed to play only a minor role as a cause of misdiagnoses.<sup>1,22</sup>

The present study systematically evaluated the causes of and reasons for suspecting misdiagnoses identified by psychosomatic consultation services.

## METHODS

Over a period of 5 years, all cases in which patients were referred to the psychosomatic consultation services of the Department of Psychiatry and Psychotherapy of the Ludwig-Maximilians-University Munich, Germany, were analyzed consecutively. Patients were referred to the services for confirmation of a suspected psychosomatic or psychogenic disorder. Other reasons for referral were ambiguous test results or a lack of efficacy of pharmacological treatment. In this study, misdiagnoses were defined as diagnoses made or suspected by the referring physician that differed from the final diagnosis in the discharge report. All patients were assigned diagnoses commonly used in psychosomatic medicine,<sup>31-33</sup> and the diagnoses were coded according to ICD-10.<sup>34</sup>

As a specialist for internal medicine and psychoanalysis, one author of this article (OS) attended all cases himself as the consulting physician. In all cases, the treating physician made or suspected an initial diagnosis before referring the patient to the consulting physician. If the consulting physician suspected a misdiagnosis, they followed a stepwise evaluation process. First and most importantly, they heeded inappropriate, “unpleasant” feelings and ideas triggered by the patient’s symptoms or unusual behavior and the patient’s reactions during the evaluation. Second, they evaluated these often vague and barely conscious inner processes by systematic introspection and self-reflection, which in some cases resulted in a valid cause of doubt about the initial diagnosis. In the final step, they discussed the suspected misdiagnosis with the referring physician; further examinations were then initiated, if necessary.

The consulting physician composed a report about the inner processes that led to the first doubts and analyzed them during the so-called peer supervision, which is broadly used in psychoanalysis. In semistructured interviews, to determine the cognitive bias leading to the misdiagnosis the consulting physician, a second psychoanalyst and specialist in psychosomatic medicine, and the referring physician then evaluated the reasons why the referring physician had given the initial diagnosis. All results were determined by consensus. All participants provided informed consent to participate in the study.

## RESULTS

During the 5-year study period, 165 psychosomatic consultations were conducted, and the consulting physician identified 24 (15%) patients who were misdiagnosed. The referring providers were internists, neurologists, orthopedic surgeons, dermatologists, and general surgeons. Ten of the 24 patients had an organic disease but were misdiagnosed as having a psychosomatic disorder; these misdiagnoses were mainly related to rare or tropical diseases (nine cases; Table 1). The remaining 14 patients had a psychosomatic disorder but were misdiagnosed as having an organic disease; conversion disorder was the most common underlying psychosomatic disorder (eight cases; Table 2).

The most frequent cognitive errors (Table 3) were availability bias (eight cases), followed by confirmation bias, search

**Table 1: Misdiagnosed psychosomatic disorders**

Case	Age, years	Sex	Symptoms	Suspected diagnosis	“Cause of doubt”	Further testing	Correct diagnosis
1	39	M	Back pain	Psychogenic pain disorder	Patient's profession (skipper in the South Pacific) and personality (robust)	Scintigraphy (normal X-ray) and identification of pathogenic agent	Typhoid spondylodiscitis
2	42	M	Cramps and unsteady gait	Psychogenic movement disorder	Newly developed speech disorder at follow-up	Clinical course	Amyotrophic lateral sclerosis
3	25	M	Neck pain	Stress-related disorder	Increasing symptoms at second consultation	X-ray and identification of pathogenic agent	Tuberculous spondylodiscitis
4	40	M	Wounds with “worms”	Delusional parasitosis, factitious disorder	Humorous behavior on the psychiatric ward	Skin biopsy and identification of pathogenic agent	Leishmaniasis
5	43	F	Uncontrolled movement of the neck and back	Conversion disorder with arcus hystereticus	Massive discomfort caused by symptoms	Detailed exploration of pre-treatment (injection of haloperidol)	Tardive dyskinesia
6	21	M	Seizures	Psychogenic seizures	Desperate patient	Holter monitor	Sick sinus syndrome
7	26	F	“Worms like from corpses”	Cotard delusion, “walking corpse syndrome”	Patient's discontent, remarking “Nobody believes me!”	Pathogenic agent seen during physical examination that had initially been missed	Myiasis
8	28	M	Bizarre movements	Psychogenic movement disorder	Patient asking, “May I show you the symptoms?”	Characteristic symptoms, clinical response to anticonvulsant treatment	Paroxysmal kinesigenic dystonia
9	54	M	Fatigue after wedding	Chronic fatigue syndrome	Discomfort caused by symptoms, eosinophilic granulocytes at the upper limit	Endocrinological testing	Hypopituitarism
10	28	M	Aggressive behavior	Personality disorder	New, unprovoked aggressive behavior	X-ray	Craniopharyngioma

Abbreviations: M, male; F, female.

**Table 2: Misdiagnosed organic illnesses**

Case	Age, years	Sex	Symptoms	Suspected diagnosis	“Cause of doubt”	Further testing	Correct diagnosis
11	35	F	Recurrent massive anemia	Colitis ulcerosa	Feeling of border-crossing by the consulting physician and patient’s professional caregiver (nurse)	Patient’s confession	Factitious disorder (self-venesection), PTSD
12	29	F	Hemiplegia	Stroke	Striking <i>la belle indifférence</i> (patient’s lack of concern about the symptoms)	Clear psychodynamic correlation (feeling of guilt after mother’s death after a stroke)	Conversion disorder
13	42	F	Chronic stomachache	Stomachache of unknown origin	Patient’s exclamation that the pain was “like giving birth”	Clear psychodynamic correlation (feeling of guilt after abortion)	Conversion disorder
14	37	F	Recurring ileus	Obstructive ileus	Mysterious feeling	Patient’s confession	Factitious disorder (medication)
15	51	F	Chronic stomach ache	Stomachache of unknown origin	Recurrent nightmare of an accident	Clear psychodynamic correlation (traumatic miscarriage) and successful psychotherapy	Conversion disorder
16	35	F	Recurrent syncope	Cardiac arrhythmia	First syncope while watching television program on adultery	Clear psychodynamic correlation (committing adultery) and normal organic testing (Holter monitor)	Psychogenic syncope
17	31	F	Neural and skin atrophy	CRPS	Hospital visits only at night	Patient’s confession after limb amputation	Factitious disorder (limb self-strangulation)
18	40	M	Muscle weakness	Myopathia	Patient’s exclamation that “Now my daughter is affected as well” and rejection of the consulting physician	Normal biopsy	Conversion disorder

*Continued*

**Table 2: Continued**

Case	Age, years	Sex	Symptoms	Suspected diagnosis	“Cause of doubt”	Further testing	Correct diagnosis
19	35	F	Recurrent skin abscesses	Immunodeficiency	Strange feeling, and patient’s professional caregiver (nurse)	Patient’s confession after experiencing pulmonary embolism after surgery	Factitious disorder (feces injection), PTSD
20	37	M	Auditory hallucinations	Schizophrenia	Patient’s recurrent exclamation that “I am mentally ill,” and lack of “precox feeling”	Statements from other psychiatric hospitals across Germany	Factitious disorder (Munchhausen Syndrome)
21	33	M	Muscular cramps	Stiff-person syndrome	Symptoms began after patient started being unfaithful to his wife	Clear psychodynamic correlation (committing adultery) in concert with normal organic testing (EMG, autoantibodies)	Psycho-genic movement disorder
22	41	M	Recurrent renal colic	Kidney stones	Recurrent self-release from hospital when referred to the second psychosomatic council	Arrival of a “Get well soon card” at the hospital long before patient was admitted as an inpatient	Factitious disorder (Munchhausen syndrome)
23	43	F	Recurrent diminished field of vision	Multiple sclerosis	Daughter always accompanied patient to psychosomatic councils	Clear psychodynamic correlation (suspected abuse of her daughter) and conclusive psychodynamic trigger	Conversion disorder, PTSD (sexual abuse)
24	26	M	Persistent diarrhea	Colitis ulcerosa	Striking collection of gifts from the mother and girlfriend on the nightstand, and clear psychodynamic correlation triggering recurrent colitis	Clear psychodynamic correlation (conflict of loyalty)	Neglect of the psychodynamic aspect of ulcerative colitis

Abbreviations: M, male; F, female; CRPS, complex regional pain syndrome; PTSD, posttraumatic stress disorder; EMG, electromyography.

**Table 3: Cognitive bias as reason for misdiagnoses**

Cognitive bias	Case
Availability bias	3, 5, 8, 11, 13, 17, 20, 22
Confirmation bias	2, 14, 9
Search satisfaction bias	5, 19, 21
Framing effect	4, 7, 13
Attribution bias	1, 3, 10
Premature closure	4, 6
Base rate neglect	21
Action bias	4

**Table 4: Reasons for misdiagnoses**

Symptoms and behavior of the patient	Case
Suspected life-threatening symptoms	9, 12, 13, 14, 16, 17, 19
Suspected “classical” symptoms	12, 5, 6, 7, 8, 20
Bizarre or unusual symptoms	4, 7, 21
Dysfunctional physician-patient relationship	10
Patient’s “unbearable” whining	1
Physician’s thought process	
Suspected psychodynamic correlation	2, 3, 5, 8
Fascination with symptoms	5, 21
Trust in organic reasons causing the symptoms	11, 24
Lack of medical knowledge	8

satisfaction bias, framing effect, and attribution bias (three cases each), premature closure (two cases), and base rate neglect and action bias (one case each). The reasons for a cognitive bias were attributed to the presenting symptoms, the patients’ behavior, and the physician’s thought process (Table 4).

The reasons causing the consulting physician to doubt the initial diagnosis were most frequently inappropriate feelings and ideas triggered by the patient (13 cases), the patient’s behavior during the consultation (10 cases), the way the patient dealt with the symptoms (nine cases), and unusual clinical courses (six cases) (Table 5).

## DISCUSSION

In this study, we analyzed cases of misdiagnoses over 5 years of psychosomatic consultation services and evaluated the reasons for the misdiagnoses and the methods used in the psychosomatic consultation that led to doubts about the diagnoses, as well as to their correction. In line with previous studies, we found that the rate of misdiagnoses was 15%<sup>12</sup> and

that lack of medical knowledge did not play an important role.<sup>1,16</sup> However, our study identified several interesting, novel aspects that we would like to highlight.

A frequent cause for misdiagnosis was insufficient medical testing if the disorder clearly appeared to be psychosomatic (cases 7, 8, and 9) or the symptoms were so bizarre that no suitable diagnostic scheme (illness script)<sup>20</sup> was available (cases 2, 5, 6, and 10). A psychosomatic disorder was initially excluded mostly by mistake if the symptoms were considered life threatening for the patient (cases 11, 12, 13, and 14).

Confirmation bias, availability bias, and search satisfaction were the cognitive biases that led to a misdiagnosis in more than two thirds of all cases. The common psychological basis of these biases is related to diagnostic narcissism, also known as overconfidence, and is associated with misplaced optimism.<sup>35</sup> One study found that “absolutely safe doctors” had a high error rate of up to 40%.<sup>36</sup>

Triggers for doubts about the initial diagnosis were internal perceptions of often seemingly trivial ideas, feelings, and impulses that were evoked in the consulting physician. These



**Table 5: Reasons triggering the “cause of doubt”**

Consulting physician’s feelings and ideas triggered by the patient	Case
Mysterious feelings	2, 17, 19, 20, 22
No signs of a psychogenic disorder	4, 7, 20
Discomfort because the initial diagnosis seemed too obvious	5, 10
Feeling of being rejected by the patient	11
Feeling of being clueless	6
Patient’s behavior during the consultation	
Distrustful and wary behavior	9, 14, 17, 22
Humorous behavior	4, 23
Demonstration of symptoms	8, 13
Use of inappropriate words	4, 13
Way patient dealt with the symptoms	
High degree of suffering and despair	5, 6, 8, 9
Humorous behavior	4, 24, 11, 12
Disgust caused by the symptoms	4, 7
Inappropriate morbid gain	13
Clinical features	
Clear psychogenic correlation	16, 21, 24
Unexpected clinical course	2, 3
Borderline laboratory test results	9

nonrational diagnostic elements follow different reasoning than rational elements—which use diagnostic algorithms, among other approaches—and represent the so-called “gut feeling,”<sup>37</sup> which has been systematically evaluated by psychoanalysts.<sup>38</sup> This systematic introspection on the part of the consulting physician proved to be correct in those cases in which an organic disease was present, even though the patient fulfilled the diagnostic criteria for a psychosomatic disorder (cases 2, 5, and 8). According to the literature, doubt about a diagnosis has a greater likelihood of being correct than certainty about a diagnosis.<sup>26,30</sup>

The intuitive thought process, as defined in the above-mentioned dual-process theory,<sup>24</sup> was helpful especially in cases of unrecognized factitious disorders because when patients manipulate symptoms they follow the same analytical thought process as the rational diagnostic process physicians follow. Doubts about the initial diagnosis arose when a patient’s behavior did not correspond with the diagnosis, as in the following cases: humorous behavior in a patient with a suspected delusional disorder (case 4), offer to demonstrate the symptoms during the consultation in a patient with a suspected conversion disorder (case 8), major suffering instead of relief in case of suspected conversion disorder (cases 5 and 9), and *la belle indifférence* in a patient with a suspected severe neurological diagnosis (case 12).

This study has several limitations. It was a single-center case series, and the total of 126 cases was rather small.

Nevertheless, because the diagnostic procedure was characterized by systematic introspection and self-reflection by the consulting physician, we believe that larger multicenter studies would be difficult to organize. In contrast to the CIRS, in our study misdiagnoses were not examined independently but by the people involved in the diagnostic processes themselves. Of note, rare (cases 2, 6, 8, and 9) and tropical diseases (cases 1, 3, 4, and 7) with sometimes bizarre symptoms were probably overrepresented in our study because it was performed at a university hospital.

Consultation services have a great responsibility. Years of misdiagnoses in a patient’s life are difficult to correct quickly, especially when suspected life-threatening conditions lead to medical interventions, for example numerous laparotomies because of suspected intestinal organic processes (case 13) or limb amputation because of a suspected complex regional pain syndrome (case 17). In another case, the consulting physician was able to prevent a planned invasive diagnostic test (muscle biopsy) in the daughter of a patient with a suspected inherited disease (case 18).

Self-satisfaction (availability bias) and overconfidence (confirmation bias) are the physician characteristics that are most likely to lead to a misdiagnosis. The high diagnostic value of an intuitive approach can be increased with a systematic, introspective thought process in which the physician questions the feelings and ideas a patient triggers; such a process is commonly used in psychoanalysis.

Physicians treating patients must therefore not only critically ask “Am I right when I am sure?”<sup>36</sup> but also “Do my feelings fit the diagnosis?”

## ACKNOWLEDGMENT

We thank Jacquie Klesing, Board-certified Editor in the Life Sciences (ELS), for editing assistance with the manuscript.

Open access funding enabled and organized by Projekt DEAL.

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