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Physical Illnesses Underlying Psychiatric Symptoms

Key Words

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Abstract

The authors reviewed 21 studies dealing with the rate of diagnosed and undiagnosed physical illnesses in the psychiatric patient population. These studies performed by different authors in variable clinical settings with diverse methodology in different locations over a period of 45 years yielded a close concordance. Approximately half of the patients (50.1%) suffered from significant physical illnesses, of these 58.2% were previously undiagnosed. A substantial portion of the physical illnesses (27.1%) produced symptoms showing direct relation to the psychopathology of the patient. These numbers are quite close to those found by authors in earlier research.

Symptoms of aberrant behavior, mood, perception and thinking modalities are observed not only within the domain of psychiatry proper. They regularly accompany the widest varieties of physical illnesses and toxic states as well. In many instances such symptoms can represent the first manifestation of a physical illness and can precede other signs or clinical display by years. Thus, such symptoms can be entirely unspecific in nature. This is why it happens so many times that patients with an underlying and unrecognized physical illness are shunted to psychiatric clinics or to private psychiatrists or are mistakenly self-

diagnosed by the patients themselves, while the hidden physical pathology remains unknown [1]. It should be sufficient to leaf through any textbook of internal medicine, neurology or a pharmacopeia to discover that prominently emotional symptomatology – ranging from depression, anxiety, uncontrolled behavior, sleep disorder, sexual dysfunction, hallucinations to change in customary personality features – share the boundaries of all medicine with the classical field of psychiatry. In fact, no psychiatric symptoms exist that at times cannot be caused or aggravated by a variety of medical illnesses [2, 3].

Clinical Presentations

Given that all symptoms, whether physical or psychiatric, occur within the context of a patient's total life situation, at times the psychosocial consequence of the symptom may result in a misleading clinical presentation. For example, a very high proportion of patients with adult-onset diabetes will gradually develop sexual dysfunction before other, more pathognomonic, symptoms appear [4]. This will not only take the form of an erectile impotence but can lead to regressive sexual behavior with disastrous marital and social consequences as the patient resorts to more esoteric sexual stimuli. Numerous cases like that have been referred to us for marital therapy [1]. There is no obligation on the patient to pronounce his symptoms in compliance with the current textbook of medicine, to the contrary, being a layman, he is free to judge and evaluate his symptoms and presumptions entirely subjectively. Not so the physician.

Psychiatric manifestations almost regularly accompany cases of systemic lupus erythematosus [5-7] and they are in fact one of the official diagnostic criteria of that condition. A variety of thyroid diseases [8-10] are notoriously chaperoned by disordered mood or behavior while there may be a paucity of physical signs at the early stages of the disease. Psychiatric manifestations of temporal lobe epilepsy [11-13], the most common form of epilepsy, are often not recognized. Numerous drugs can cause bona fide psychiatric symptoms such as hallucinations, depression, and cognitive impairment [14-17]. A depression caused by administration of reserpine or by lupus erythematosus is not distinguishable clinically from a sui generis endogenous depression.

With failure to detect the hidden somatic pathology, the treatment will be exclusively psychopharmacological or psychotherapeutic

and therefore futile. Such instances will only lend a bad reputation to psychiatry and psychosomatic medicine.

So far nothing new has been stated here. The rate of undiagnosed physical illnesses in the psychiatric patient population has been well studied for decades. Appreciation of the findings, however, regrettably remains insufficient.

Keeping with the principles of some of the ancient medical literature, Osler [18] always emphasized the emotional components accompanying medical illnesses, and writing on the issue of neurasthenia he raises the important question to decide: 'has the patient an organic disease?' Bonhoeffer [19] discussing organic pathology frequently portrayed the emotional aspects of the disease and highlighted that physical morbidity and mortality rates were disproportionately high in psychiatric patients. Malzberg's [20] study confirmed this observation some two decades later. Subsequently, Rorsman [21] found two and Babigian and Odoroff [22] three times higher rates of mortality among psychiatric patients. In a study on large ambulatory patient population Koranyi [23] found that all modalities of death, including accidents, suicides and natural causes, were indeed remarkably higher when compared to that in the general population and that life expectancy of psychiatric patients was some 20 years shorter than in the population at large.

Physical Illness in Psychiatric Patients

The first author dealing specifically with physical illnesses found concurrently in psychiatric patients was Phillips [24] in 1937. He investigated 164 psychiatric patients and found a rate of 45% with medical illnesses. Furthermore, in 24% of the instances the presenting psychiatric symptoms could be ex-

plained by the patient's physical condition. In a preliminary prospective study on 100 consecutive ambulatory psychiatric patients in a large general hospital, Koranyi [25] found a total of 49 patients who suffered from a variety of medical illnesses. Analyzing the missed diagnoses and the source of referrals, this study highlighted that referring physicians other than psychiatrists were unaware of these conditions in 30% of the cases while psychiatrists and psychiatric institutions missed the physical diagnoses in 50% of their patients. Social agency and self-referred patients remained undiagnosed as to their medical conditions in 86% of the instances. In a larger study at the same institution involving 2,090 psychiatric clinic patients Koranyi [1] found that 43% suffered from at least one significant medical condition and 46% remained undiagnosed by the referring source. Nonpsychiatric medical practitioners failed to diagnose the physical illnesses in 32% of cases in this sample, psychiatrists 48%, while social agencies and self-referrals failed to suspect the presence of an underlying physical disorder in 83 and 84%, respectively, of the instances. A substantial proportion of the physical illnesses, 18%, appeared to have a causative relation to the psychiatric symptoms. In other instances the medical condition aggravated the psychiatric illness (51%) while in some others (31%) it merely coincided with the psychiatric morbidity.

Since 1937 some 21 epidemiological studies have appeared in the literature in Canada, the United States and in Europe on the subject embracing a combined population of over 9,199 patients (one early paper did not provide the sample size). I find it useful to present the relevant data on table 1.

In the 19 studies that list exactly the rate of physical illnesses, an average of 50.1% was found. Of these, 16 studies yielded a rate between 33 and 60%; a single study showed a

low rate of 17% and two of them as high as an 80% rate. Despite the different geographical locations and times, involving a multiform demographical population and unequal methodology, there is significant concordance concerning the high rates of medical illnesses in the psychiatric patient population.

There are two questions to be addressed. Why are medical illnesses so often missed in psychiatric patients? Why is the rate of medical illnesses higher in the psychiatric patient population?

There appear to be a number of factors responsible for the missed medical diagnoses. Medical practitioners may not insist on physical examination of cases that appear to be overtly psychiatric in nature or in some instances where the patient has poor hygiene. They may find patients poor communicators, particularly those with organic illness or with schizophrenia [40]. Patients may focus more on the psychosocial consequences of his or her illness rather than the actual symptoms [1]. Physicians often find it difficult to separate the medical complaints from the symptoms of mood and behavior. Patients having had previous psychiatric treatment may prejudice the clinical judgement of the physician. When psychiatric patients are referred to medical specialists for 'routine' consultation, the workup often remains insufficient and the physician may perceive the situation to rule out contra-indications for psychiatric treatment or for psychotropic medications.

Psychiatrists are frequently used by unscreened patients as primary physicians. Some psychiatrists are of the opinion that the patient's somatic condition is not their concern. They may fail to raise the question 'what else than the "obvious" may be responsible for the patient's symptoms?' Some psychiatrists do not like to perform a physical examination or they feel that they have lost their competence to do so. In some settings psy-

Table 1. Comparative results of 21 studies

Authors	Year	Number of patients	Rate of physical illnesses, %	Direct relation to psychopathology, %	Priorly undiagnosed %
Phillips [24]	1937	164	45	24	?
Marshall [26]	1949	?	44	?	?
Herrige [27]	1960	209	50	?	?
Davies [28]	1965	36	58	42	?
Maguire and Granville-Grossman [29]	1968	200	33	?	49
Johnson [30]	1968	250	60	12	80
Koranyi [25]	1972	100	49	20	71
Burke [31]	1972	202	43	?	?
Eastwood [32]	1975	124	? 'high'	?	?
Etamad [33]	1978	3,542	50	?	?
Burke [34]	1978	133	50	?	?
Hall et al. [35]	1978	658	?	9	46
Koranyi [1]	1979	2,090	43	18	46
Buckley et al. [36]	1980	200	52	?	?
Hall et al. [37]	1980	100	80	46	46
Ferguson and Dudleston [38]	1986	650	17	?	?
Marcil et al. [39]	1987	50	56	?	?
Pary and Barton [40]	1988	110	54	?	?
Honig et al. [41]	1989	218	80	46	46
Knutsen and DuRand [42]	1991	78	56	?	56
Mahendru et al. [43]	1991	85	32	?	84
Total		9,199	50.10	27.12	58.22

chiatrists do not have adequate facilities for a physical examination. Women are often not examined by psychiatrists because of fear of false accusations or of sexual improprieties. Elderly patients may take too long to dress or undress. Despite these concerns, Dercole et al. [44] found that women and the elderly still have a higher rate of physical illnesses.

Psychiatric Patients and Physical Illness Susceptibility

Do psychiatric patients have a higher susceptibility to physical illness? The answer is unequivocally yes. Fink [45] found high utili-

zation of medical hospital beds in a psychiatric patient population. The mechanism as to why psychiatric patients show increased morbidity from medical causes is not well understood. One of several contributing factors is probably the higher level of stress. Heightened stress deriving either from physical or from mental sources acts like a stone thrown upon the calm surface of a lake, the consequential ripples travel far into the lagoon.

Selye's [46] early research found that atrophy of the spleen and the thymolymphatic system in animals following physical stress was due to elevated corticosteroids. Not only do the cortisol levels rise in stress but also catecholamines, ACTH, prolactin, growth hor-

mone and other substances, each with their respective physiological and behavioral consequences. The elevation of these biologically active compounds occurs regardless as to whether the stress is psychogenic in origin or derived from physical illnesses or organic causes. A propensity to high cortisol levels is the cornerstone of the dexamethasone suppression test which will be abnormal in a proportion of cases of clinical depression. But the elevation of cortisol will patently suppress T lymphocyte immunocompetence in response to mitogenic stimulation. The anecdotal observation of Parkes et al. [47] that widows frequently die during the first year of bereavement ("broken heart syndrome") gained more scientific proof with the work of Bartrop et al. [48] who demonstrated proportional impairment of T cell competence and impaired immunity over the time during bereavement. Subsequent similar studies have well demonstrated the direct relationship between stress, elevated levels of corticosteroids and a reduction of immunocompetence [49-51]. Animal research on social stress and social isolation in mice was found to favor tumor growth by Sklar et al. [52]. Prolonged competition for basic life needs under difficult conditions or

in the face of predictable failure was found to heighten the risk for atherosclerosis, kidney failure, hypertension or cerebrovascular accidents in animals as described by Gottschalk [53]. Results of stress research were summarized recently [51]. It has been demonstrated that increased sympathetic activity will induce the rate-limiting enzyme, tyrosine hydroxylase and thus catecholamines in the brain. Stress-related elevation of antidiuretic hormone suppresses sodium levels, particularly in the elderly, and may lead to subclinical delirium.

Thus stress, or rather stress response may be one bridge whereby physical illnesses may cause psychiatric symptomatology on the one hand and disturbed emotions may result in medical illnesses on the other. These observations may explain only some but not all of the reasons why excess rates of physical illnesses occur in psychiatric patient populations. Further explanations, no doubt, will emerge with future research. Meanwhile, the need for careful medical scrutiny of all psychiatric patients can only be strongly emphasized along with the fact that the evaluation of psychiatric patients is a medical responsibility.

References

- 1 Koranyi EK: Morbidity and rate of physical illnesses in a psychiatric clinic population. *Arch Gen Psychiatry* 1979;36:414-419.
- 2 Koranyi EK: Undiagnosed physical illnesses in psychiatric patients. *Annu Rev Med* 1982;33:309-316.
- 3 Koranyi EK: Introduction; in Koranyi EK (ed): *Physical Illnesses in the Psychiatric Patient*. Springfield, Charles C Thomas, 1982, pp 3-8.
- 4 Goldman JA, Schechter A, Eckerling B: Carbohydrate metabolism in infertile and impotent males. *Fertil Steril* 1970;21:397-401.
- 5 Denko JD: Problems in diagnosis and treatment of lupus psychosis. *Am J Psychother* 1977;1:125-136.
- 6 Feinglass EJ, Dorsch CA, Zizik TM, Stevans MB: Neuropsychiatric manifestations of systemic lupus erythematosus: Diagnosis, clinical spectrum and relationship to other features of the disease. *Medicine* 1976; 4:323-339.
- 7 Koranyi EK, Dewar A: Neuropsychiatric features of drug induced and spontaneous systemic lupus erythematosus. *The Psychiatr J Univ Ottawa* 1986;2:52-57.
- 8 Schiffer RB, Klein RF, Sider RC: *The Medical Evaluation of Psychiatric Patients*. New York, Plenum Med, 1988.
- 9 Carney MWP, MacLeod S, Sheffield BF: Thyroid function screening in psychiatric patients. *Br J Psychiatry* 1981;138:154-156.
- 10 Sandhu HS, Cohen LM: Endocrine disorders; in Charen S (ed): *Psychosomatic Medicine: Theory, Physiology and Practice*. Madison, International University Press, 1989, vol 2, pp 661-706.

- 11 Blumer D: Temporal lobe epilepsy and its psychiatric significance; in Benson FD, Blumer D (eds): *Psychiatric Aspects of Neurological Disease*. New York, Grune & Stratton, 1975, vol 1, pp 171-198.
- 12 Delgado-Escueta AV: The epilepsies: New developments of the 1980's; in Appel SH (ed): *Current Neurology*. Chicago, Year Book Medical Publication, 1986, pp 235-288.
- 13 Scheinberg P: *Modern Practical Neurology*. New York, Raven Press, 1981.
- 14 Shader RI: *Psychiatric Complications of Medical Drugs*. New York, Raven Press, 1972.
- 15 Lapierre YD, Oyeweumi LK: 'Psychiatric' adverse effects of psychotherapeutic drugs; in Koranyi EK (ed): *Physical Illnesses in Psychiatric Patients*. Springfield, Charles C Thomas, 1982, pp 101-118.
- 16 Hansten PD: *Drug Interactions*, ed 5. Philadelphia, Lea & Febiger, 1985.
- 17 Abramowitz M: *Drugs That Cause Psychiatric Symptoms*. *Med Lett* 1984;26:75-78.
- 18 Osler WM: *Selected aphorisms*. Birmingham, The Classics of Medicine Library, 1985.
- 19 Bonhoeffer K: *Die Psychosen im Gefolge von akuten Infektionen, allgemeinen Erkrankungen und inneren Erkrankungen*; in Aschaffenburg GL (ed): *Handbuch der Psychiatrie*. Leipzig, Deuticke, 1912, vol 3, pp 1-60.
- 20 Malzberg B: *Mortality Among Patients with Mental Disease*. Utica, New York State Hospital Press, 1934.
- 21 Rorsman B: *Mortality among psychiatric patients*. *Acta Psychiatr Scand* 1974;50:354-375.
- 22 Babigian HM, Odoroff CHP: *The mortality experience of a population with psychiatric illness*. *Am J Psychiatry* 1969;126:470-481.
- 23 Koranyi EK: *Fatalities in 2,070 psychiatric outpatients*. *Arch Gen Psychiatry* 1977;34:1137-1142.
- 24 Phillips RG: *Physical disorder in 164 consecutive admissions to a mental hospital: The incidence and significance*. *Br Med J* 1937;2:363-366.
- 25 Koranyi EK: *Physical health and illness in a psychiatric outpatient department population*. *Can Psychiatr Assoc J* 1972;17(suppl):109-116.
- 26 Marshall H: *Incidence of physical disorders among psychiatric inpatients*. *Br Med J* 1949;2:468-470.
- 27 Herrige CF: *Physical disorders in psychiatric illness*. *Lancet* 1960;ii:949-951.
- 28 Davies WD: *Physical illness in psychiatric outpatients*. *Br J Psychiatry* 1965;111:27-37.
- 29 Maguire GP, Granville-Grossman KL: *Physical illness in psychiatric patients*. *Br Med J* 1968;115:1365-1369.
- 30 Johnson DAW: *The evaluation of routine physical examination in psychiatric cases*. *Practitioner* 1968;200:686-691.
- 31 Burke AW: *Physical illness in psychiatric hospital patients in Jamaica*. *Br J Psychiatry* 1978;133:22-27.
- 32 Eastwood MR: *The Relation Between Physical and Mental Illness*. Toronto, University of Toronto Press, 1975.
- 33 Etamad B: *The role of medicine in psychiatric (letter)* *Arch Gen Psychiatry* 1978;35:904-905.
- 34 Burke AW: *Physical disorder among day hospital patients*. *Br J Psychiatry* 1978;133:22-27.
- 35 Hall RCW, Popkin MK, Devault RA: *Physical illness presenting as psychiatric disease*. *Arch Gen Psychiatry* 1978;35:1315-1320.
- 36 Buckley P, Karasu TB, Berkman I, Charles E: *Unrecognized physical illness and psychiatric care*, from Albert Einstein College of Medicine. Paper presented at the Annu Congr APA, San Francisco, May 1980.
- 37 Hall RCW, Gardner ER, Stickney SK, LeCann AF, Popkin MK: *Physical illness manifesting as psychiatric disease*. *Arch Gen Psychiatry* 1980;37:989-995.
- 38 Ferguson B, Dudleston K: *Detection of physical disorder in newly admitted psychiatry patients*. *Acta Psychiatr Scand* 1986;5:485-489.
- 39 Marcil R, Leung P, Bloom JD: *The use of DSM III axis III in recording physical illness in psychiatric patients*. *Am J Psychiatry* 1987;114:1484-1486.
- 40 Pary RJ, Barton SN: *Communication difficulty of patients with schizophrenia and physical illness*. *South Med J* 1988;4:489-490.
- 41 Honig A, Pop P, Tan ES, Philipson H: *Physical illness in chronic psychiatric patients from a community psychiatric unit: The implication for daily practice*. *Br J Psychiatry* 1989;155:58-64.
- 42 Knutsen E, DuRand C: *Previously unrecognized physical illnesses in psychiatric patients*. *Hosp Community Psychiatry* 1991;2:182-186.
- 43 Mahendru RK, Gupta AK, Bahal DK: *Physical illness in psychiatric patients*. *Indian J Psychiatry* 1987;3:269-273.
- 44 Dercole A, Scodol AE, Struening E, Curtis J, Millman J: *Diagnosis of physical illnesses in psychiatric patients using axis III and a standardized medical history*. *Hosp Community Psychiatry* 1991;4:395-400.
- 45 Fink P: *Physical disorders associated with mental illness, a register investigation*. *Psychol Med* 1990;4:829-834.
- 46 Selye H: *The Stress of Life*, ed 2. New York, McGraw-Hill, 1976.
- 47 Parkes CM, Benjamin B, Fitzgerald RG: *Broken heart: A statistical study of increased mortality among widowers*. *Br Med J* 1969;1:740-743.
- 48 Bartrop RW, Luckhurst E, Lazarus L, Kiloh LG, Penny R: *Depressed lymphocyte function after bereavement*. *Lancet* 1977;1:834-836.
- 49 Kiecolt-Glaser JK, Glaser R: *Stress and the immune system*; in Tassman A, Riba MB (eds): *Review of Psychiatry*. Washington, APA Press, 1992, vol 11, pp 123-238.
- 50 Irwin M, Patterson T, Smith TL: *Reduction of immune function in life stress and depression*. *Biol Psychiatry* 1990;27:22-30.
- 51 Koranyi EK: *Physiology of stress reviewed*; in Cheren S (ed): *Psychosomatic Medicine*, Madison, International University Press, 1989, vol 1, pp 241-278.
- 52 Sklar LS, Anisman H: *Stress and coping factors influence tumor growth*. *Science* 1979;513-515.
- 53 Gottschalk LA: *Vulnerability and immune response*. Paper presented at the 135th annual meeting of the APA, Toronto, 1982.