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ORIGINAL ARTICLE

The medical model and its application in mental health

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ABSTRACT

This article provides a conceptual overview of the medical model and its application to psychiatry, understanding the medical model in psychiatry as a biopsychosocial model. The article discusses basic concepts relevant to the medical model (illness, disease, disorder, condition, etc.), the nature of medical knowledge and diagnostic construct, medical classifications in psychiatry, and the medical model within multidisciplinary practice. Salient criticisms of the medical model are discussed and addressed at relevant points. It is recognized that concepts such as disease and illness lack uncontested definitions and are not free from value judgements even in general medicine. Diagnostic constructs used in psychiatry are often descriptive heterogenous categories which can nonetheless offer clinical utility. The medical model co-exists with non-medical approaches and perspectives, and psychiatrists work in an interdisciplinary context with other models and professionals. Criticism of the medical model in psychiatry often fail to recognize the continuities between psychiatry and the rest of medicine, and the persistence of these controversies may be a result of fundamental disagreement over values.

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Introduction

It has been argued that physicians were put in charge of the asylums in 18th and 19th century by virtue of the fact that they were the only major professional alternative to religious healers (Burns, 2006; Bynum 2008).If psychologists or social workers had existed as highly developed professions with professional authority during the asylum era, then perhaps they would have become asylum superintendents instead of doctors (Burns, 2006; Bynum, 2008). To the extent that contemporary psychiatry is a child of alienism, the primary involvement of medical professionals with what we consider to be psychiatric conditions, and therefore the application of medical model to mental health, may arguably be a product of historical contingency.

The medical model dominates healthcare provision including mental health. Given the scarcity of trained psychiatric professionals, the bulk of psychiatric care around the world is provided by primary care physicians. In specialized secondary and tertiary care settings, psychiatric professionals have to provide care to a large volume of patients and tend to have larger caseloads than their other professional colleagues (Tyrer et al., 2001). Provision of medical services typically relies on health-related remuneration, whether through private health insurance or through government programs. These aspects of our systems of practice are not inherent to the medical model but shape the provision of medical care in a profound manner.

The medical model conceptualizes problematic thoughts, feelings and behaviours as mental *health* problems or as mental *disorders*. Such a conceptualization has many critics both within psychiatry (Szasz, 1960) and as well as allied professions (Bentall, 2009). This leads some to argue that the medical model could, in principle, be eliminated. However, even if primary psychiatric conditions were to be excluded from the medical model, many psychiatric disorders are undisputedly caused by medical conditions such as hypothyroidism and stroke (Lishman, 1997). This means that medical professionals have an essential role in the assessment and management of at least some psychiatric conditions, and therefore the involvement of the medical model remains unavoidable even from a radically eliminative position.

What is the medical model?

From a pragmatic perspective, 'medical model' refers to any system that medical professionals (referred to as 'physicians') use in clinical work and research. This system comprises two mutually influencing models of

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practice and explanation. Models of practice involve how physicians interact with their patients – how they assess and classify their presenting problems and what interventions they offer to help with them. Models of explanation are used to describe the nature of these problems and how these problems came about. This definition can broadly also include psychodynamic and CBT models (both developed by physicians) but this article will restrict itself to the medical model as it exists in general medicine and its extension into the realm of mental health.

The biomedical model vs the biopsychosocial model

The 'biomedical' model frequently serves as a target of philosophical criticisms and the term largely has negative connotations within a philosophical context. However, there are few contemporary physicians who are avowedly 'biomedical' in orientation, leading to some confusion as to what the term exactly refers to. The traditional understanding of the biomedical model is along reductionist and physicalist lines, such that biological processes are seen as underlying causes of psychiatric disorders and to the extent that social and psychological factors have a role to play, they do so via biological means (Guze, 1992). Along historical lines, this is equivalent to Griesinger's view that mental illnesses are brain diseases.

For several decades psychiatry – as well as other specialties such as public health and primary care – have explicitly adopted the *biopsychosocial* model (Engel, 1981) as their guiding framework in which psychological and social factors are recognized as important and independent causal factors in their own right. An example of a biopsychosocial conceptualization or formulation of a case is given in Table 1 in a format that is commonly used in UK psychiatric training; such a formulation is combined with a summary of relevant clinical findings, preferred and differential diagnosis and further investigations. The whole is combined to inform the suggested management plan of interventions.

A biomedical formulation of this case would focus on a person being vulnerable to depression at times of social stress, in the example above because of a genetic vulnerability and biological changes in the brain caused by prior depressive episodes. The biopsychosocial model would regard these various biological, psychological and social factors interacting to produce problematic thoughts, feelings and behaviours not necessarily via final common pathway of brain disease.

This model has been criticized for theoretical sterility by providing no explanation for how biological, psychological and social factors interact to effect health problems (Ghaemi, 2007). In response to such criticisms, there have been philosophical attempts to bolster the biopsychosocial model with an inbuilt theory of causal interactions(Bolton & Gillett, 2019), however the impact of such philosophical developments with regards to the practice of medical model remain to be seen. Some psychiatry critics claim the biopsychosocial is really 'bio-bio-bio' in practice (Read, 2005) but such critics often have a mistaken understanding of how psychiatry understands illness and disease, and ignore the multidisciplinary nature of psychiatric practice where physicians can and do refer for psychotherapy, even if they do not provide formal psychotherapy themselves, and can and do offer social interventions such as support for housing or welfare benefits in collaboration with social workers (Huda, 2019).

Concepts related to the medical model

Terms like health, disease and illness are problematic to define but easily recognized in obvious examples. The problems with definitions will be briefly described as relevant to the problem of deciding what suitable problems for psychiatrists to be involved with are. Arthur Kleinman in his seminal work proposed that illness refers to the innately human experience of

Table 1. Example biopsychosocial formulation.

	Biological	Psychological	Social
Predisposing factors	Family History of depression (genetic factors)	Low self-esteem; Anxieties around social interaction – other people are dangerous Previous history of depression	Bullying in childhood
Precipitating factors		Rejection	Separation from partner; having to leave house
Perpetuating factors	Heavy drinking	Single with continued rejection	Lack of housing
Protective factors	Antidepressants	Previous CBT with notes on how to prevent and manage negative mood	Supportive family

symptoms and suffering, and contrasted it with disease, which refers to the practitioner's concern with biological structure and functioning (Kleinman, 1978). When individuals experience 'illness', they interpret their experiences through the lens of folk notions of health and disease, and through sociocultural ideas of what conditions are thought to be suitable for help from healthcare professionals (Pendleton et al., 1984).

The disease perspective relies on the initial identification of disvalued illness states suitable for medical attention followed by discovery of associated changes in structure and/or processes that lead to these illness states. Illness can occur in the absence of identified disease. There have been naturalist attempts to define disease in value-free terms such as changes in structure processes likely to reduce lifespan or reproductive capability (Boorse, 1975; Kendell, 1975). It has been argued that these definitions still rely on implicit values (Fulford, 1989). There is variation in agreement in people and health professionals as to which health states should be regarded as medical problems. This disagreement is greater for mental health problems than general medical conditions especially addictions (Tikkinen et al., 2012) and such disagreement has been reported in studies in many different Western countries (Aftab et al., 2020; Tikkinen et al., 2019).

Jerome Wakefield has proposed the harmful dysfunction concept according to which disorder is a hybrid state with a factual and normative component. According to Wakefield, 'dysfunction' is to be understood objectively and scientifically as failure of a mechanism to perform the function which it was naturally selected to perform in evolution, and 'harm' is to be understood as a value judgement of dysfunction causing harm within a particular social context (Wakefield, 1992). However, Wakefield's proposal has been subject to considerable critique and its application to psychiatry remains highly contested. Our lack of scientific knowledge with regards to the evolutionary history of brain aside, the validity of the philosophical distinction between dysfunction and harm has been questioned (Bolton, 2008). Furthermore, for many psychiatric conditions, relational and enactive perspectives challenge the notion that a 'dysfunction' can be said to be present *inside* the individuals given that many psychiatric conditions emerge at least partly in response to external contextual factors (Huda, 2019).

The term 'condition' may be preferable for states associated with distress, impaired functioning and/or increased risk and regarded as appropriate for healthcare staff attention (Huda, 2019) but this normativist concept lacks value-free boundaries to delineate appropriate medical problems (Kendell, 1975) and may apply even if intervention is unhelpful. Notions of health are even more nebulous. The WHO definition of 'a complete state of physical, mental and social well-being, and not merely the absence of disease or infirmity' has been criticized as nothing could be 'comprehensive than that or more meaningless' (Lewis, 1953). This definition of health does not apply to many people. A syndrome is a collection of clinical features that are associated with each other and are distinct from other syndromes and from healthy states. A syndrome can have many causes and a condition can be associated with different syndromes.

An essentialist view of medical practice (Szasz, 1960) is that physicians identify and treat 'diseases' with clearly identifiable lesions or biological abnormalities (pathological states clearly separate from health and from each other). However, it is well-recognized now that such a view is not reflective of the medical model even in general medicine. Many common general medical conditions such as hypertension lie on a spectrum with healthy states and may or may not be considered diseases depending on how stringently one defines disease. Pregnancy is neither disease nor illness. Conditions such as hypertension and pregnancy are nonetheless suitable for medical attention because of associated risks of developing problems including diseases that can benefit from healthcare attention.

Not all illnesses have identified disease mechanisms or lesions and are described as 'functional' (such as irritable bowel syndrome). These 'functional' medical conditions demonstrate that the complexities of assessing and treating medical conditions in the absence of knowledge of biological aetiology are not just limited to psychiatry. Indeed at some point most illnesses had unclear disease mechanisms so current illness states with unclear mechanisms may have these mechanisms discovered in future (but no guarantee that they will be). This may be especially the case with conditions involving highly complex systems such as the mind/brain. There is an element of ritual to healthcare which was the main therapeutic effect of physicians for millennia. This social role of healers is not the major explanation of current medical effectiveness as therapeutic 'placebo' effects are often overestimated (Kienle & Kiene, 1997).

Over medicalization is an issue that concerns all of medicine (Sackett et al., 1991) not least because of the risk of iatrogenic harm for little chance of benefit (Treadwell & McCartney, 2016) and some critics of

psychiatry have highlighted this as a particular issue in psychiatry due to lack of clear differentiators between health and purported mental disorder (Kinderman et al., 2013). If clear rules for defining medical disorders existed this would help focus medical care on appropriate problems avoiding over-medicalization, but naturalist models so far have not been able to successfully carve out notions of dysfunctions in a value-free manner. Normativist models also do not provide any clear boundary with regards to the domain of medicalization (Bortolotti, 2020). In the absence of such a philosophical boundary, 'medicalization' often ends up as a rhetorical or political manoeuvre rather than as a useful scientific concept (Pies, 2013).

In both psychiatry and medicine the concepts of illness and disease are hard to define but can be applied easily in obvious cases especially where the values of doctor and patient are in agreement. In psychiatry disagreement in values is more frequently encountered leading to controversies regarding what should be an appropriate target for medical attention. An approach using multiple stakeholders (including patients) informed by both values and empirical evidence is the best way to resolve these issues (Cooper, 2018).

The nature of medical knowledge

Much of medical knowledge – including psychiatric knowledge – is based on degrees of confidence based on evidence that ranges from clinical experience to the randomized, controlled trials (Greenhalgh, 2010; Sackett et al., 1991).

Dividing health problems into categorical diagnostic constructs aids acquiring knowledge of health problems through research, learning this information and recalling it in clinical practice and communicating information to other professionals. Physicians often work under a variety of pressures such as limited time or in emergencies. For this reason a simplified categorical system supplemented by additional information is preferred by many physicians for its clinical utility (Graber et al., 2002; Croskerry, 2009). Other professionals working under different circumstances may prefer more exact and time consuming classifications.

Diagnostic constructs carry probabilistic information. These include associated range of clinical pictures (symptoms, signs, typical course or lab test results), likely prognostic outcomes, treatments and their chances of success, potential causes, likely co-occurring conditions, complications and differential diagnosis to be aware of (Huda, 2019). Diagnosis is best viewed as an opinion on the optimum information set for the patient's predicament, is always provisional and should be changed in the light of disconfirmatory information. Diagnosis also has additional societal functions (such as supporting access to welfare benefits) and organizational/administrative/statistical functions (Rose, 2013).

Physicians identify the diagnosis by several methods. These include prototype matching (recognizing a clinical picture as fitting a diagnostic construct), following decision trees/protocols, exhaustively gathering all the information including test results before deciding on the diagnosis or hypothetico-deductive method of thinking of the most likely diagnosis then looking for confirmatory information (Sackett et al., 1991). In clinical practice a combination of prototype matching and hypothetico-deductive methods are commonly used. Exhaustive methods are commoner in research (such as standardized interview followed by diagnostic algorithm).

This system converts the patient's own descriptions and physical and mental characteristics into standardized medical terminology such as symptoms and diagnosis (of course this terminology may have influenced the patient). This assumes that there are common elements between such disparate patient experiences, descriptions and characteristics. This assumption allows the use of natural science methods to gather useful and reliable nomothetic information (i.e. information based on a similarity between different people such as a common disease process) to guide clinical care. Critical psychiatrists have doubted this is possible for mental health and some have suggested instead using qualitative research or the application of hermeneutic methods (Middleton & Moncrieff, 2019). Whilst these can provide useful information they cannot replace natural science methods for providing necessary information such as prognosis or treatment effectiveness. The medical model in practice combines nomothetic information with idiographic information (information that is unique to that individual) – such as patient values or life experiences – into a broader diagnostic formulation used to guide clinical decision making.

Classification of medical conditions

Patients' attributes are a mix of unique characteristics, those shared with some other patients and those shared with all patients (Kendell, 1983). Focussing on

attributes shared with all patients means we cannot differentiate outcomes or research causes and we offer the same treatments to everyone (Keeley, 2015). Focussing on unique attributes of patients means we cannot learn from one patient to help other patients (Hill, 1952). Medical classification therefore relies on classifying similarities between some patients into diagnostic constructs.

Medical practice – whether it is psychiatry or another specialty such as cardiology – is not a 'disease-based model' identifying diseases clearly separate from each other and healthy states. It is instead a 'pattern recognition model' for diagnostic constructs that may be nominalist or essentialist (Zachar & Kendler, 2007). An essentialist diagnostic construct is where every individual with that diagnosis shares underlying properties that explains the features associated with the diagnosis and which differentiates them from other diagnostic constructs and healthy states. Nominalist diagnostic constructs are practical categories that serve useful purposes for clinical practice. Conditions are classified into categories with key identifying features even though many health problems exist on spectrums (or dimensions) with health and/or with other medical conditions. This is because people try to match what they encounter to prototypes of likely categories (Keeley, 2015; Rosch & Mervis, 1975).

Diagnostic constructs based only on external 'manifestations' such as symptoms, course or lab test results are often nominalist by attaching unitary labels to often heterogenous conditions. These are descriptive constructs based on a family resemblance of a clinical picture with many biopsychosocial causes and processes involved but may have clinical utility by carrying useful attached information (Kendell & Jablensky, 2003). Diagnostic constructs based on common mechanisms (such as changes in structure or processes) or causes are more likely to be useful in acquiring useful information than nominalist constructs. This information includes more accurate prognosis, more targeted treatments (so potentially more effective) and perhaps even effective prevention. There are many definitions of validity for diagnostic constructs. One commonly used definition is a diagnostic construct with clear cut boundaries with other diagnostic constructs (Kendell & Jablensky, 2003).

It is an oft expressed concern that a categorical diagnostic system such as the DSM encourages false assumptions about the nature of mental health problems; for example that they exist in neat categories or that these constructs carry more information than they actually do (Hyman, 2010). Similar conceptual problems occur in general medicine (see the debate about the nature of hypertension in the 60 s). Psychiatric diagnostic manuals often make explicit statements that they do not assume mental health problems exist in neat categories but use categories to represent them for the practical reasons outlined in this article (American Psychiatric Association, 1994; World Health Organization, 1992). A solution to improve conceptual clarity is to be explicit about how the diagnostic construct is classified and the nature of the condition being classified (Huda, 2019).

Similarities used as basis of classification may be one or more of the clinical picture (external manifestations), changes in structure/processes (mechanisms) and causes. Many psychiatric conditions (and also general medical conditions) are based on similarities of clinical picture. Medical conditions' nature can display one or more of the following characteristics as described in Table 2. Diagnostic constructs are categories but many medical conditions in general and mental health do not exist as neat categories.

Criticisms of various aspects of psychiatric diagnostic constructs such as their reliability (agreement between different observers as to the correct diagnosis) and validity (Kinderman et al., 2013) often do not

Table 2. Classifying medical conditions.

Basis of classification	Examples
Clinical picture including polythetic symptoms/signs	Depression, hypertension, chronic fatigue syndrome
Mechanisms – differences in structures/processes	Alzheimer's disease, type 1 diabetes,
Causes	Drug induced psychosis, pneumococcal pneumonia
Nature of condition	Examples
Disease/syndrome – clear evidence of pathological mechanisms or clear clinical syndromes	Alzheimer's disease, myocardial infarction,
Spectrum of health with no clear division between healthy states and diagnostic constructs	Depression, hypertension
Spectrum of illness/condition subdivided into separate conditions without discrete boundaries between them	Arguably psychosis; acute coronary syndrome
Spectrums of illnesses/conditions with different aspects of these conditions being given different diagnostic labels	Internalizing disorders (depression, anxiety), metabolic syndrome
Injuries /trauma – events that adversely affect the individual	Traumatic events causing PTSD, fractures
Other situations of interest to health professions	Grief reaction, pregnancy, plastic surgery

take into account that these same criticisms can also be made of many general medical diagnostic constructs (Huda, 2019). There are more commonly no biomarkers for many psychiatric conditions (Kapur et al., 2012) with some exceptions such as the dementias. Psychiatric diagnostic constructs are often descriptive labels for heterogeneous conditions combined with poor understanding of the biology of mind/brain. Many general medical conditions such as irritable bowel syndrome do not have diagnostic biomarkers Biological abnormalities do not always cause medical illness such as 'incidentalomas' discovered on medical imaging or orthostatic proteinuria (Huda, 2019). Those who wish the use of diagnosis to be eliminated from mental health for its imperfections do not appear to realize that many general medical diagnostic constructs would also be discarded.

Medical model within multidisciplinary practice

For psychiatry both scientific explanation and psychological understanding is important for conceptualizing people's problems (Jaspers, 1963). 'Promiscous realism' is the view that there are multiple ways of viewing problems (Dupré, 1993) such as mental health. There are multiple models of conceptualizing mental health problems (Tyrer & Steinberg, 2006). Given the complexity of mental health a single model will not be adequate to conceptualize all that is important about every individual's case. The varied needs of patients mean that psychological models and interventions complement and enhance the medical approach. In depression and anxiety for example, a combination of antidepressants and psychotherapy is more effective than just antidepressants (Cuijpers et al., 2014). Psychotherapy's treatment objectives can expand beyond traditional medical objectives to more personalized and existential issues including personal growth (Grosse & Grawe, 2002).

Tensions exist within multidisciplinary teams as mental health services like physical healthcare tend to be organized around medical-dominated hierarchies at clinical (but not managerial) level (Read, 2015). These inter-professional conflicts are not unique to mental health, for example occasional tensions exist between obstetricians and independent midwives.

Conclusion

The medical model in psychiatry is best understood as a biopsychosocial model which combines nomothetic information (such as diagnosis) with idiographic information to understand patients' problems and offer interventions, and utilizes both scientific explanation as well as psychological understanding. It is recognized that concepts such as disease and illness lack uncontested definitions and are not free from value judgements even in general medicine. Diagnostic constructs used in psychiatry are often descriptive heterogenous categories rather than identifying mechanisms or causes but can still offer clinical utility. The medical model co-exists with non-medical approaches and perspectives, and psychiatrists work in an interdisciplinary context with other models and professionals. Criticism of the medical model in psychiatry often fails to recognize the continuities between psychiatry and the rest of medicine, and the persistence of these controversies may be a result of fundamental disagreement over values and assumptions.

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References

Aftab, A., Joshi, Y., & Sewell, D. (2020). Conceptualizations of mental disorder at a US Academic Medical Center. *The Journal of Nervous and Mental Disease*, *208*(11), 848–856. https://doi.org/10.1097/NMD.0000000000001227

American Psychiatric Association. (1994). *Diagnostic and Statistical Manual of Mental Disorders 4th Edition' (DSM-IV)*. American Psychiatric Association Publishing.

Bentall, R. P. (2009). *Doctoring the mind: Why psychiatric treatments fail*. Penguin Books.

Bolton, D. (2008). *What is mental disorder?: An essay in philosophy, science, and values*. Oxford University Press.

Bolton, D., & Gillett, G. (2019). *The biopsychosocial model of health and disease: New philosophical and scientific developments*. Springer Nature.

Boorse, C. (1975). On the distinction between disease and illness. *Philosophy & Public Affairs*, *5*(1), 49–68.

Bortolotti, L. (2020). Doctors without 'Disorders. Aristotelian Society Supplementary Volume. *94*(1), 163–184. https://doi.org/10.1093/arisup/akaa006

Burns, T. (2006). *Psychiatry a very short introduction*. Oxford University Press.

Bynum, W. (2008). *The history of medicine a very short introduction*. Oxford University Press.

Cooper, R. (2018). *Diagnosing the diagnostic and statistical manual of mental disorders*. Routledge.

Croskerry, P. (2009). A universal model of diagnostic reasoning. *Academic Medicine: Journal of the Association of American Medical Colleges*, *84*(8), 1022–1028. https://doi.org/10.1097/ACM.0b013e3181ace703

Cuijpers, P., Sijbrandij, M., Koole, S. L., Andersson, G., Beekman, A. T., & Reynolds, C. F. (2014). Adding psychotherapy to antidepressant medication in depression and anxiety disorders: A meta-analysis. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA)*, *13*(1), 56–67. https://doi.org/10.1002/wps.20089

Dupré, J. (1993). *The disorder of things: Metaphysical foundations of the disunity of science*. Harvard University Press.

Engel, G. L. (1981). The clinical application of the biopsychosocial model. *The Journal of Medicine and Philosophy*, *6*(2), 101–124. https://doi.org/10.1093/jmp/6.2.101

Fulford, K. W. M. (1989). *Moral theory and medical practice*. Cambridge University Press.

Ghaemi, S. N. (2007). *The concepts of psychiatry: A pluralistic approach to the mind and mental illness*. John Hopkins University Press.

Graber, M., Gordon, R., & Franklin, N. (2002). Reducing diagnostic errors in medicine: What's the goal? *Academic Medicine*, *77*, 981–992.

Grosse, M., & Grawe, K. (2002). Bern inventory of treatment goals: Part 1. Development and first application of a taxonomy of treatment goal themes. *Psychotherapy Research: Journal of the Society for Psychotherapy Research*, *12*(1), 79–99. https://doi.org/10.1080/713869618

Greenhalgh, T. (2010). *How to read a paper: The basics of evidence based medicine*. BMJ Books.

Huda, A. S. (2019). *The medical model in mental health: An explanation and evaluation*. Oxford University Press.

Hyman, S. E. (2010). The diagnosis of mental disorders: The problem of reification. *Annual Review of Clinical Psychology*, *6*, 155–179. https://doi.org/10.1146/annurev.clinpsy.3.022806.091532

Guze, S. B. (1992). *Why psychiatry is a medical specialty*. Oxford University Press.

Hill, A. B. (1952). The clinical trial. The *New* England *Journal of Medicine*, *247*(4), 113–119. https://doi.org/10.1056/NEJM195207242470401

Jaspers, K. (1963). *General psychopathology*. (J. Hoenig & M. W. Hamilton, Trans). Manchester University.

Kapur, S., Phillips, A. G., & Insel, T. R. (2012). Why has it taken so long for biological psychiatry to develop clinical tests and what to do about it? *Molecular Psychiatry*, *17*(12), 1174–1179. https://doi.org/10.1038/mp.2012.105

Keeley, J. W. (2015). The background assumptions of psychological assessment and psychiatric diagnosis. In P. Zachar, D.S. Stoyanov, M. Aragona, & A. Jablensky (Eds.), *Alternative perspectives on psychiatric validation – DSM, ICD, RDoC, and beyond* (pp. 94–111). Oxford University Press.

Kendell, R. E. (1975). The concept of disease and its implications for psychiatry. *The British Journal of Psychiatry: The Journal of Mental Science*, *127*(4), 305–315. https://doi.org/10.1192/bjp.127.4.305

Kendell, R. E. (1983). Chapter 7 The principles of classification in relation to disease. In M. Shepherd & O.L. Zangwill (Eds.), *Handbook of psychiatry 1: General psychopathology* (pp. 191–198). Cambridge University Press.

Kendell, R. E., & Jablensky, A. (2003). Distinguishing between the validity and utility of psychiatric diagnoses. *The American Journal of Psychiatry*, *160*(1), 4–12. https://doi.org/10.1176/appi.ajp.160.1.4

Kienle, G. S., & Kiene, H. (1997). The powerful placebo effect: Fact or fiction? *Journal of Clinical Epidemiology*, *50*(12), 1311–1318. https://doi.org/10.1016/s0895-4356(97)00203-5

Kinderman, P., Read, J., Moncrieff, J., & Bentall, R. (2013). Drop the language of disorder. *Evidence-Based Mental Health*, *16*(1), 2–3. https://doi.org/10.1136/eb-2012-100987

Kleinman, A. (1978). Clinical relevance of anthropological and cross-cultural research: concepts and strategies. *The American Journal of Psychiatry*, *135*(4), 427–431. https://doi.org/10.1176/ajp.135.4.427

Lishman, W. A. (1997). Organic *psychiatry. The psychological consequences of cerebral disorder* (3rd ed.). Blackwell Science.

Lewis, A. (1953). Health as a social concept. *British Journal of Sociology*, *4*(2), 109–124. https://doi.org/10.2307/587206

Middleton, H., & Moncrieff, J. (2019). Critical psychiatry: A brief overview. *BJPsych Advances*, *25*(1), 47–54. https://doi.org/10.1192/bja.2018.38

Pendleton, D., Schofield, T., Tate, P., & Havelock, P. (1984). *The consultation: An approach to learning and teaching*. Oxford University Press.

Pies, R. (2013). Does psychiatry Medicalize normality? *Philosophy Now*. Retrieved September 30, 2020, from https://philosophynow.org/issues/99/Does_Psychiatry_Medicalize_Normality

Read, J. (2005). The bio-bio-bio model of madness. *Psychologist*, *18*(10), 596.

Read, J. (2015). Saving psychiatry from itself: Will young psychiatrists choose authoritarian power or authoritative respect? *Acta Psychiatrica Scandinavica*, *131*(1), 11–12. https://doi.org/10.1111/acps.12355

Rosch, E., & Mervis, C. B. (1975). Family resemblances: Studies in the internal structure of categories. *Cognitive Psychology*, *7*(4), 573–560. https://doi.org/10.1016/0010-0285(75)90024-9

Rose, N. (2013). 'What is Diagnosis For?' Lecture given at the Institute of Psychiatry (London). http://nikolasrose.com/wp-content/uploads/2013/07/Rose-2013-What-is-diagnosis-for-IoP-revised-July-2013.pdf

Sackett, D. L., Haynes, R. B., Guyatt, G. H., & Tugwell, P. (1991). *Clinical epidemiology: A basic science for clinical medicine* (2nd ed.). Little, Brown and Company.

Szasz, T. (1960). The myth of mental illness. *American Psychologist*, *15*(2), 113–118. https://doi.org/10.1037/h0046535

Tikkinen, K. A., Leinonen, J. S., Guyatt, G. H., Ebrahim, S., & Järvinen, T. L. (2012). What is a disease? Perspectives of the public, health professionals and legislators. *BMJ Open*, *2*(6), e001632. https://doi.org/10.1136/bmjopen-2012-001632

Tikkinen, K. A., Rutanen, J., Frances, A., Perry, B. L., Dennis, B. B., Agarwal, A., Maqbool, A., Ebrahim, S., Leinonen, J. S., Järvinen, T. L., & Guyatt, G. H. (2019). Public, health professional and legislator perspectives on the concept of psychiatric disease: A population-based survey. *BMJ Open*, *9*(6), e024265. https://doi.org/10.1136/bmjopen-2018-024265

Treadwell, J., & McCartney, M. (2016). Overdiagnosis and overtreatment: Generalists – It's time for a grassroots revolution. *British Journal of General Practice*, *66*(644), 116–117. https://doi.org/10.3399/bjgp16X683881

Tyrer, P., Al Muderis, O., & Gulbrandsen, G. (2001). Distribution of case-load in community mental health teams. *Psychiatric Bulletin*, *25*(1), 10–12. https://doi.org/10.1192/pb.25.1.10

Tyrer, P., & Steinberg, D. (2006). *Models for mental disorder*. John Wiley & Sons.

Wakefield, J. C. (1992). The concept of mental disorder. On the boundary between biological facts and social values. *The American Psychologist*, *47*(3), 373–388. https://doi.org/10.1037//0003-066x.47.3.373

World Health Organization (1992). *The ICD-10 classification of mental and behavioural disorders: Clinical descriptions and diagnostic guidelines'*. World Health Organization.

Zachar, P., & Kendler, K. S. (2007). Psychiatric disorders: A conceptual taxonomy. *The American Journal of Psychiatry*, *164*(4), 557–565. https://doi.org/10.1176/ajp.2007.164.4.557