Conceptualizations of Mental Disorder at a US Academic Medical Center

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Abstract: How health care professionals conceptualize mental illness has received relatively little attention in existing literature. This survey explored how health care professionals, academic faculty, and trainees at a US academic medical center (departments of psychiatry, neurology, family medicine, and geriatric medicine, as well as medical students, nurses, and social workers) conceptualize the notion of mental disorder. Respondents (N = 209) were asked to rate their agreement or disagreement with a variety of conceptual statements. Overall, distress and impairment were seen as essential features of mental disorder, and the presence of a biological abnormality was not considered necessary. There was significant correlation between disease status and biological etiology attribution for all conditions except homosexuality. Psychology trainees and psychologists were significantly less likely to call a condition a disease compared with other groups. There was a general lack of consensus regarding conceptual issues fundamental to psychiatry. Conceptualizations of mental disorder held by respondents were complex and did not fit easily within the "biological psychiatry" paradigm.

Key Words: Biological psychiatry, concepts, survey, mental disorder, paradigm, philosophy of psychiatry

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How best to conceptualize mental disorders is a subject of fierce debate both within and outside of psychiatry (Aftab et al., 2020; Bolton, 2008; Frances, 2013; Gardner et al., 2019; Karter, 2019; Murphy, 2015; Phillips et al., 2012; Steingard, 2019). Theoretical and philosophical questions (Zachar et al., 2007)—such as whether psychiatric disorders are categories defined by their underlying nature or by practical concerns (essentialism versus nominalism), and whether the distinction between normal and disordered is a factual matter or a value-laden judgment (objectivism versus evaluativism)—are highly relevant to how psychiatric disorders are understood, classified, and managed in clinical settings (Aftab et al., 2020).

Research has shown that biomedical explanations can lessen public stigma by diminishing blame, but conversely, they can increase stigma by inducing pessimism, avoidance, and the belief that affected people are dangerous or unpredictable (Haslam et al., 2015). A body of literature on "folk psychiatry" reveals that lay conceptions of mental disorder in many societies seem to rely on factors such as judgments of infrequency, perceptions of incomprehensibility, and internal attribution (*i.e.*, the behavior is unexpected, unfamiliar, hard to understand and explain, and does not seem to be a response to external conditions) (Haslam et al., 2007). In contrast, relatively few studies have sought to characterize and examine the views held by health care professionals. This lack of evidence is alarming given that concepts of health and disease may have an impact on various aspects of clinical encounters, ranging from clinical presentation, treatment, patient adherence, and stigma (Aftab et al., 2020; Conrad, 2007; Haslam et al., 2015; Lebowitz et al., 2019; Sedler, 2016; Steingard, 2019). Examples of such impact include the way clinicians understand the distress of their patients and how they explain it to them, the degree to which clinicians pay attention to the value-laden nature of their judgments and to the values and preferences of their patients, and the manner in which they balance the clinical needs of the patients and the pragmatic functions of the diagnostic process. For example, a clinician who views a patient's distressing sadness as part of an episode of major depressive disorder with an underlying biological abnormality may be more likely to prescribe an intervention with a biological mechanism of action, like a serotonin reuptake inhibitor, whereas a clinician who views the patient's distressing sadness as the result of marital discord might be more likely to recommend marital therapy. In addition, depending on the patient's insurance, reimbursement for care might be easier to obtain if the sadness is identified as a symptom of major depressive disorder rather as the result of conflict with a spouse. These differences in insurance authorization and reimbursement, in turn, may bias individuals (patients and providers) to understand distressing sadness as a disorder with a biological abnormality.

A limited body of literature, primarily from the United Kingdom and Finland, offers some guidance. In the United Kingdom, Harland et al. (2009) used the Maudsley Attitude Questionnaire to assess the attitudes of 76 psychiatry trainees across eight models of mental illness applied to four psychiatric disorders (schizophrenia, major depressive disorder, generalized anxiety disorder, and antisocial personality disorder). Although they found that no single model was universally endorsed by all respondents, overall the biological model was most strongly endorsed, particularly with regard to schizophrenia. When the same questionnaire was used with psychology trainees by Read et al. (2017), low endorsement of the biological model was found, and instead, the trainees favored various psychosocial models for all four disorders. In 2010, the Finnish Disease (FIND) survey asked more than 3000 psychiatrists, physicians, nurses, legislators, and laypeople to what extent they considered 60 conditions to be "diseases" (Tikkinen et al., 2012), of which 20 were related to mental health concerns (Tikkinen et al., 2019). The FIND study revealed that there is large disagreement among the public, health professionals, and legislators regarding the classification of states of being as diseases and whether these states should be treated with public tax revenue. The survey included only a list of conditions and did not include any conceptual statements that could help tease out aspects of conceptualization other than disease attribution.

By contrast, how US medical trainees and professionals consider mental illness has not been systematically explored. To address this knowledge gap, the authors designed a survey study to explore how health care professionals, academic faculty, and trainees at a US academic medical center understand the notion of mental disorder, with a particular emphasis on contemporary themes related to "biological psychiatry," the boundary between normal and abnormal, and concerns about medicalization of everyday distress. Following the survey design of the FIND study, 12 psychiatric conditions were included in the survey, and the degree to which respondents consider these conditions to be diseases was examined.

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Although it is common to see references to biological psychiatry in the conceptual and scientific literature, understanding of what it means varies tremendously, even by those who may self-identify as being "biologically oriented" (Guze, 1989; van Praag, 2008; Walter, 2013; Wyatt et al., 2006). This is complicated by two additional ways in which biological psychiatry can be understood: a) a research agenda that is focused on uncovering the neurobiology of mental illness without necessarily making any philosophical claims that mental illness is best understood in terms of neurobiology, or b) a set of philosophical assumptions about the nature of mental illness, with common assumptions being that mental disorders have underlying biological abnormalities, that mental disorders are brain diseases, that judgments of pathology are primarily a scientific matter, and that mental disorders should best be understood in terms of biological mechanisms. Our survey focused on the second understanding of biological psychiatry, with the full appreciation that these assumptions represent a certain popular understanding of biological psychiatry and are by no means representative of the full spectrum of nuanced and philosophically elaborate ways in which a biological approach to psychiatry may be used.

METHODS

The authors conducted a cross-sectional study consisting of a voluntary, anonymous, online survey at University of California San Diego (UCSD) Health, a large teaching hospital system in San Diego. The participants were medical students enrolled at the UCSD School of Medicine; trainees (including medical residents, trainee psychologists, and other research trainees) and individuals holding faculty appointments in the departments of psychiatry, neurology, family medicine, and geriatric medicine; nurses working on the inpatient psychiatry units; and social workers in the department of psychiatry.

The survey had the following structure:

1. Items related to demographic information, including years in practice and percentage of time spent in direct clinical work.
2. Nine conceptual statements intended to explore respondents' understanding of mental disorders. Respondents were asked to rate their agreement or disagreement using a 5-point Likert scale (strongly disagree, disagree to some extent, neither agree nor disagree, agree to some extent, and strongly agree). These statements were selected based on relevance to ongoing conceptual debates in American psychiatry and familiarity with philosophy of psychiatry literature (Aftab et al., 2018). Selected items were then further revised iteratively based on internal discussion and consultation with other psychiatrists, a family medicine physician, a neurologist, a nurse, and a social worker. Because of concerns about confusion or misunderstanding, the use of specific philosophical jargon (such as pragmatic, problems in living, objectivism, reductionism, etc.) was avoided given the authors' belief that many respondents were unlikely to have prior exposure to these terms.
3. A list of 12 conditions accompanied by the statements "[This state of being] is a disease" and "The etiology of [this state of being] is best explained in terms of biological mechanisms." Respondents were asked to rate their agreement or disagreement using the same 5-point Likert scale. The statements "[This state of being] is a disease" were adopted from Tikkinen et al. (2019). In addition, many of the conditions in the survey were also conditions used by Tikkinen et al. The statements "The etiology of [this state of being] is best explained in terms of biological mechanisms" were intended to capture explanatory biological reductionism, where biological explanations of etiology are viewed as preferred or more fundamental to psychological/social explanations or complex biopsychosocial explanations in which no single level of explanation is seen as more preferred.

Given that we were restricted with regard to the number of conditions we could include in the survey, our aim was to select conditions that would be most conceptually informative and would generate an array of responses. Similar to Tikkinen et al. (2019), conditions included in the survey were selected with the anticipation that some would be classified by the majority of survey participants as a disease and as best explained in terms of biological mechanism, some would be categorized by the majority as not a disease and not well explained in terms of a biological mechanism, and others would be categorized with neither explanation prevailing. The 12 conditions included in our survey were as follows: absence of sexual desire, alcoholism, binge eating, gambling addiction, grief, homosexuality, narcissistic personality, occupational burnout, pedophilia, schizophrenia, social anxiety, and transgender identity.

Of 12 states, 9 (absence of sexual desire, alcoholism, gambling addiction, grief, homosexuality, occupational burnout, schizophrenia, social anxiety, transgender identity) were selected from Tikkinen et al.'s FIND survey so that illustrative comparisons could be made with their findings. Tikkinen et al. included the general "personality disorder" category, which was replaced here with a specific personality type, "narcissistic personality." To avoid implicit bias, we avoided using the word "disorder" in our survey. Tikkinen et al. included anorexia and bulimia in their survey; this study replaced both with "binge eating," which was included in *Diagnostic and Statistical Manual of Mental Disorders, 5th Edition* (*DSM-5*) as a new category. We anticipated that almost no one in our sample would consider homosexuality to be a disease given the history of its exclusion from the *DSM*, and we also anticipated that a majority would disagree with characterization of transgender identity as a disease given the emerging scientific and political consensus with regard to its diagnostic status. Pedophilia was included as an additional example of a condition involving sexual behavior.

The survey was created using Qualtrics, a secure online survey platform. An e-mail containing the URL for the survey with a brief description of the survey and request for participation was sent to all potential study subjects. Data were collected from March 2019 to May 2019. The survey was approved by the institutional review board.

The survey was aimed at a sample of convenience, with no predetermination of a specific sample size or response rate. It was understood in advance that precise response rate would be difficult to determine because in many cases we had to rely on existing departmental e-mail distribution lists for which the exact number of recipients was not available. At times, overlap existed between lists as faculty members may have had appointments in multiple departments (for instance, both psychiatry and neurology). In addition, the listserv included individuals from fields such as neuroscience, anthropology, sociology, and statistics who held academic appointments in the relevant departments. Because there was no easy way to exclude faculty members whose background did not involve clinical training or direct patient care from the listserv, they were included in the study.

Statistical Analysis

To perform statistical analyses, agreement and disagreement in responses to the conceptual statements were quantified as follows, and then mean values were calculated: strongly disagree = −2; disagree to some extent = −1; neither agree nor disagree = 0; agree to some extent = 1; strongly agree = 2.

Correlations between variables were made using Spearman correlations. The associations between disease status and biological etiology attribution were analyzed further using the SPSS Ordinal Regression procedure or PLUM (Polytomous Universal Model), which is an extension of the general linear model to ordinal categorical data, controlling for age, sex, race, field of work, years in practice, and percentage of time spent in clinical work.

Differences among groups were calculated using Kruskal-Wallis test. For differences among different fields of work with regard to survey responses, we first conducted SPSS Ordinal Regression, controlling for age, sex, race, years in practice, and percentage of time spent

in clinical work. If the ordinal regression indicated that there was a significant difference among the fields of work with regard to a specific response, we conducted Kruskal-Wallis test and Dunn's post hoc pairwise comparisons to determine which groups were different from each other. Only those responses for which there was a significant difference among the fields of work are reported in this article.

Two composite scores from the aggregate respondent data were created: a disease status attribution composite score (DSA-CS) and a biological etiology attribution composite score (BEA-CS). The DSA-CS was created by giving strong disagreement to strong agreement numerical values of 1 to 5, respectively, for the disease status of each of the 12 conditions, and then summing the values, resulting in a range of 12 to 60. Similarly, the BEA-CS was created by giving strong disagreement to strong agreement numerical values of 1 to 5, respectively, for the biological etiology rating for each of the 12 conditions, with the summed values also having a range of 12 to 60.

Because this was a sample of convenience, the study was not designed to oversample or undersample any particular group of respondents. Missing values were rare (aside from age, for which 4% of values were missing, for all other variables, missing values were less than 1%).

RESULTS

Survey responses were received from 209 respondents in total, with an estimated overall response rate of 17% to 18% (209/~1200).

The mean age of the sample was 36.48 years (SD = 11.64). Table 1 shows other demographic features of the survey respondents. Respondents in the fields of psychiatry and psychology together constituted about half of the sample, and about half of the sample was still in training. Relatively few responses were received from individuals with nonmedical backgrounds.

Responses to all items in the survey—with one exception—spanned the full range from strongly disagree to strongly agree. The one exception to this was the item for biological etiology of schizophrenia, which ranged from disagree to some extent to strongly agree.

TABLE 1. Demographic Characteristics of Respondents

Demographics	*N* (%)	
Sex		
Male	78 (37.3)	
Female	130 (62.2)	
Other	1 (0.5)	
Race/ethnicity		
Caucasian	118 (56.5)	
Asian-American	48 (23.0)	
African-American	6 (2.9)	
Hispanic	16 (7.7)	
Other	20 (9.6)	
Field of training/work		Trainees (% within field)
Psychiatry	46 (22.0)	16 (34.8)
Psychology	48 (23.0)	30 (62.5)
Family medicine	13 (6.2)	2 (15.4)
Geriatric medicine	5 (2.4)	—
Neurology	16 (7.7)	6 (37.5)
Neuroscience	6 (2.9)	3 (50.0)
Medical student	44 (21.1)	—
Social work	18 (8.6)	—
Nursing	9 (4.3)	—
Other	3 (1.4)	—
Years in practice		
Student/trainee	101 (48.3)	
0–5 yr	34 (16.3)	
6–10 yr	22 (10.5)	
11–20 yr	22 (10.5)	
>20 yr	29 (13.9)	
Percentage of time in direct clinical work		
0% to 25%	74 (35.4)	
26% to 50%	16 (7.7)	
51% to 75%	42 (20.1)	
76% to 100%	76 (36.4)	

Conceptual Statements

Table 2 summarizes the results, ranking them by standard deviation, with lowest variability (most consensus) at the top and greatest variability (least consensus) at the bottom. Detailed description of responses is available from the authors upon request.

Respondents overall agreed with the following statements:

- "The diagnosis and classification of mental disorders is influenced by social, cultural, moral, and political values." (mean = 1.48, SD = 0.84) This was also the statement with the least variability in responses.
- "Mental disorders must cause distress or functional impairment to be considered disorders." (mean = 0.76, SD = 1.26).

There was overall disagreement with regard to the following:

- "For a condition to be a mental disorder, there must be an underlying biological abnormality." (mean = −0.6, SD = 1.21).
- "Physicians should not treat commonplace, negative experiences of human living, such as loneliness, heart break, and relationship difficulties." (mean = −0.68, SD = 1.14).
- "Practical considerations (such as related to billing/reimbursement or ease of use) are as important as scientific evidence in determining how mental disorders should be classified." (mean = −0.69, SD = 1.23).

It should be noted that despite overall agreement or disagreement, there was still high variability as to the strength of their agreement or disagreement, as indicated by the wide standard deviations above.

The conceptual statement with the least consensus was "All mental disorders are diseases." Opinions were almost equally split, resulting in overall neither agreement nor disagreement (mean = −0.1, SD = 1.28).

Among those who agreed or strongly agreed with "all mental disorders are diseases," 57% (43/57) disagreed or strongly disagreed with "For a condition to be a mental disorder, there must be an underlying biological abnormality." That is, the presence of biological abnormality was not seen by many respondents as a necessary criterion for calling a condition a disease. Among those who agreed/strongly agreed that *DSM* medicalizes ordinary life, 70% (68/97) stated that physicians should treat commonplace, negative experiences of human living.

Disease Status and Biological Etiology Attribution

Table 3 summarizes the results of disease attribution and biological etiology attribution components of the survey. A detailed description of responses is available from the authors upon request.

The following conditions were considered diseases with more than 75% of the respondents in agreement (strongly agree or agree to some extent): schizophrenia, alcoholism, gambling addiction, binge eating, social anxiety, and pedophilia. Only homosexuality and transgender identity were not considered diseases by more than 75% of respondents.

Conditions considered biological in etiology by more than 75% were schizophrenia and alcoholism. Disagreement regarding biological etiology did not reach more than 75% for any of the conditions.

TABLE 2. Summary of Responses to Conceptual Statements, With Statements Ranked From Lowest Standard Deviation (Top Row) to Highest Standard Deviation (Bottom Row)

	Mean	SD
The diagnosis and classification of mental disorders is influenced by social, cultural, moral, and political values.	1.48	0.845
I am concerned about the way psychiatry currently understands and classifies mental disorders.	0.39	1.064
Physicians should not treat commonplace, negative experiences of human living, such as loneliness, heart break, and relationship difficulties.	−0.68	1.138
The *DSM* (*Diagnostic and Statistical Manual of Mental Disorders*) approach to psychiatric classification leads to the medicalization/pathologization of ordinary life.	0.07	1.156
The difference between what is normal and what is disordered can be determined by objective, scientific facts.	−0.41	1.178
For a condition to be a mental disorder, there must be an underlying biological abnormality.	−0.6	1.213
Practical considerations (such as related to billing/reimbursement or ease of use) are as important as scientific evidence in determining how mental disorders should be classified.	−0.69	1.23
Mental disorders must cause distress or functional impairment to be considered disorders.	0.76	1.256
All mental disorders are diseases.	−0.1	1.28

Negative values reflect overall disagreement; positive values reflect overall agreement.

Occupational burnout and grief were the only two conditions in which most of the respondents disagreed with biological etiology (66.1% and 55.9%, respectively).

Correlations Between Disease Status Attribution and Biological Etiology Attribution

The mean DSA-CS score was 39.07 (SD = 6.65), and the mean BEA-CS score was 39.14 (SD = 7.92). Figure 1 shows the distribution of DSA-CS and BEA-CS in the survey sample.

Table 4 shows Spearman correlations between disease status and biological etiology attribution for each of the specific conditions included in the survey. There was a statistically significant correlation between the two for all conditions except homosexuality and transgender identity. The strength of the correlations ranged from weak to moderate. In the ordinal regression analysis controlling for age, sex, race, field of work, years in practice, and percentage of time spent in clinical work, these associations remained statistically significant, with the one difference being that the association between disease status and biological etiology attribution was now also significant for transgender identity.

Relationship to Training Status and Clinical Work

Trainees more strongly agreed with the statement "I am concerned about the way psychiatry currently understands and classifies mental disorders" (mean = 0.63 *vs.* 0.16; mean rank = 118.40 *vs.* 92.47, $df = 1$, Kruskal-Wallis $H = 10.8$; $p < 0.001$), and there was also a significant negative Spearman correlation between years in practice and agreement with the statement ($r = -0.249$; $p < 0.001$). No significant differences were found among individuals based on the proportion of time spent in direct clinical work.

TABLE 3. Summary of Responses to Disease Status Attribution and Biological Etiology Attributions

	Mean	SD	% of Subjects in Agreement or Disagreement	
"[This state of being] is a disease"				
Homosexuality	−1.86	0.47	97.1	Disagreement
Transgender identity	−1.33	0.955	79.4	
Grief	−0.98	1.125	71.8	
Occupational burnout	−0.69	1.279	58.4	
Absence of sexual desire	−0.49	1.116	55	
Narcissistic personality	0.6	1.212	65	Agreement
Social anxiety	0.94	1.048	77.1	
Pedophilia	0.99	1.141	76.1	
Binge eating	1.23	0.923	85.1	
Gambling addiction	1.28	0.884	87	
Alcoholism	1.56	0.692	95.2	
Schizophrenia	1.83	0.553	96.2	
"The etiology of [this state of being] is best explained in terms of biological mechanisms"				
Occupational burnout	−0.8	1.061	66.1	Disagreement
Grief	−0.59	1.145	55.9	
Narcissistic personality	−0.05	1.1	36.4	Neutral
Homosexuality	0.02	1.431	44.5	(percentages reflect agreement)
Pedophilia	0.06	1.093	41.2	
Transgender identity	0.07	1.315	41.6	
Absence of sexual desire	0.28	1.002	48.4	
Binge eating	0.5	0.933	61.8	Agreement
Gambling addiction	0.61	0.983	66	
Social anxiety	0.63	0.979	64.6	
Alcoholism	0.88	0.872	78.5	
Schizophrenia	1.58	0.655	93.8	

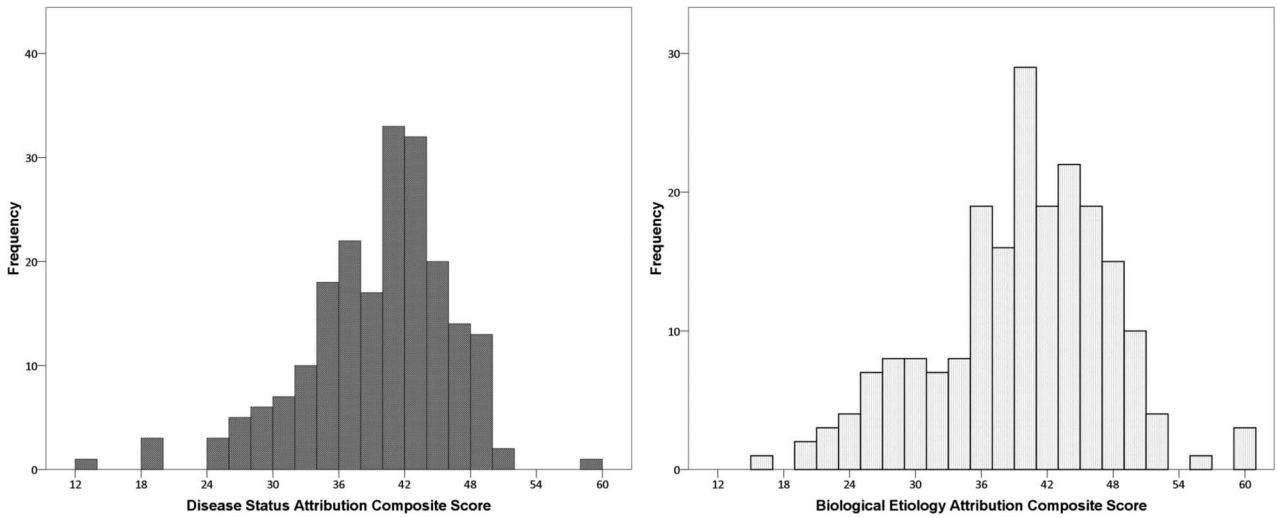

FIGURE 1. Distributions of DSA-CS and BEA-CS in survey sample.

Differences Between Fields of Training/Work

Fields of training/work were consolidated as follows for the purpose of analysis: psychiatry, psychology, other medical fields (family medicine, geriatric medicine, neurology; combined due to small numbers), nursing and social work (combined due to small numbers), and medical students. Individuals of nonmedical backgrounds were not included in this comparison because of small numbers.

Table 5 reports the results for those survey responses for which significant differences were found between respondents of various fields on ordinal regression and Kruskal-Wallis test. The trends were generally similar for all fields with statistically significant differences in some areas:

- Respondents from psychology showed significantly greater degree of agreement that "distress" is a necessary criterion for disorder compared with respondents from other medical fields. Respondents from psychiatry had similar mean response to psychology, but their difference with other groups did not reach statistical significance.
- Respondents from psychology were significantly different from respondents from other fields with regard to the statement "all mental disorders are diseases." Psychology respondents showed overall disagreement, and respondents from other fields were overall neutral or showed weak overall agreement.
- Responses to the statement "I am concerned about the way psychiatry currently understands and classifies mental disorders" revealed that medical students (overall agreement) significantly differed from other medical fields (overall disagreement), and psychology respondents (overall agreement) differed significantly from nurses and social workers and respondents from other medical fields (overall disagreement).
- Respondents from psychology had significantly lower DSA-CS scores compared with medical students and respondents from psychiatry.

TABLE 4. Association Between "[This State of Being] Is a Disease" and "The Etiology of [This State of Being] Is Best Explained in Terms of Biological Mechanisms"

	Spearman		Ordinal Regression Analysis[a]			
Condition	***R***	***p***	**Estimate**	**SE**	**Wald**	***p***
Absence of sexual desire	0.283	<0.001	0.743	0.149	24.89	<0.001
Alcoholism	0.370	<0.001	1.053	0.211	25.01	<0.001
Binge eating	0.316	<0.001	0.691	0.165	17.66	<0.001
Gambling addiction	0.354	<0.001	0.830	0.167	24.75	<0.001
Grief	0.458	<0.001	0.900	0.147	37.39	<0.001
Homosexuality	0.039	0.574	0.249	0.189	1.73	0.188
Narcissistic personality	0.209	0.002	0.434	0.130	11.05	0.001
Occupational burnout	0.442	<0.001	0.821	0.148	30.91	<0.001
Pedophilia	0.212	0.002	0.451	0.137	10.892	0.001
Schizophrenia	0.266	<0.001	1.711	0.421	16.541	<0.001
Social anxiety	0.445	<0.001	0.998	0.163	37.614	<0.001
Transgender identity	0.085	0.222	0.330	0.124	7.10	0.008

[a]Using "[This state of being] is a disease" as dependent variable and controlling for age, sex, race, field of work, years in practice, and percentage of time spent in clinical work.

DISCUSSION

Our survey of health care professionals, academic faculty, and trainees at a major academic institution in the United States reveals a number of new findings: Responses to nearly all items in the survey spanned the full range from strongly agree to strongly disagree, indicating the unsettled nature of these assertions and the general lack of consensus. Respondents generally leaned toward disease attribution; however, it was also clear that many respondents had a broad notion of disease where the presence of an underlying biological abnormality was not considered necessary for disease attribution. Conceptualizations of mental disorder held by our respondents were complex and multifaceted and do not fit easily within the biological psychiatry paradigm. There was widespread concern regarding medicalization of ordinary life, yet this concern coexisted with the desire to see commonplace, negative experiences of human living as legitimate targets of medical attention. Psychologists and psychology trainees overall had a relatively lower tendency to call a condition a disease compared with some of the other groups. Most respondents considered distress or impairment to be essential features of mental disorder, consistent with the current *DSM* conceptualization (American Psychiatric Association, 2013). This view is also compatible with the general claim that "disease" is best conceptualized as a state of significant suffering and incapacity (Pies, 1979).

TABLE 5. Comparison of Responses of Individuals From Different Fields of Training/Work

	Specialty Groups of Respondents	Significantly Different From[a]	Mean	SD	Mean Rank	*df*	Kruskal-Wallis *H*	Sig.[b]
Mental disorders must cause distress or functional impairment to be considered disorders.	Other medical fields	Psychology	0.294	1.315	80.29	4	14.6	0.006
	Med students	—	0.659	1.328	97.35			
	Nurses and social workers	—	0.370	1.245	80.11			
	Psychiatry	—	1.065	1.104	113.53			
	Psychology	Other medical fields	1.042	1.220	114.60			
All mental disorders are diseases.	Other medical fields	Psychology	0.147	1.184	111.12	4	16.08	0.003
	Med students	Psychology	0.114	1.262	109.31			
	Nurses and social workers	—	0.074	1.542	105.67			
	Psychiatry	Psychology	0.130	1.376	108.90			
	Psychology	Other medical fields, med students, psychiatry	−0.750	0.911	71.88			
The *DSM* approach to psychiatric classification leads to the medicalization/pathologization of ordinary life.	Other medical fields	—	−0.647	0.950	87.53	4	10.96	0.027
	Med students	Psychology	−0.773	1.008	117.64			
	Nurses and social workers	—	0.037	1.372	111.81			
	Psychiatry	—	−0.130	1.310	100.83			
	Psychology	Med students	−0.479	1.091	85.23			
I am concerned about the way psychiatry currently understands and classifies mental disorders.	Other medical fields	Med students, psychology	−0.147	1.048	72.65	4	24.99	<0.001
	Med students	Other medical fields	0.568	0.818	108.64			
	Nurses and social workers	Psychology	−0.148	1.262	74.80			
	Psychiatry	—	0.413	1.107	101.74			
	Psychology	Other medical fields, nurses and social workers	0.854	0.772	123.97			
DSA-CS	Other medical fields	—	39.85	6.204	104.24	4	11.74	0.019
	Med students	Psychology	40.64	5.017	109.73			
	Nurses and social workers	—	39.22	7.944	99.76			
	Psychiatry	Psychology	40.51	5.655	109.27			
	Psychology	Med students, psychiatry	35.85	7.752	74.90			

[a]Dunn's post hoc test for pairwise comparisons.

[b]Kruskal-Wallis test.

Our survey results seem to undermine the often levied criticism of health care professionals for adopting an unreflective "biological" view of mental disorders as biomedical diseases primarily explained in terms of manifestations of genetic and neurobiological abnormalities (Lebowitz et al., 2019). Although critics and the general public have expressed dismay that the *DSM* has inspired medicalization/pathologization of ordinary life (Sedler, 2016), these findings indicate that many academic professionals and trainees are also in agreement with this sentiment. On the other hand, most of the respondents indicated that physicians should treat commonplace, negative human experiences, which, at face value, sits at odds with the desire to reduce medicalization and pathologization of ordinary life. One explanation for this apparent contradiction may be that the notion of "treatment" can be interpreted broadly to include recommendations by a physician for interventions such as supportive counseling or family therapy. Although these interventions may fall under the rubric of "treatment," their utilization may not be viewed as "medicalizing" the problem for which they are being recommended. It is important to consider that some commentators view "medicalizing" as more of a rhetorical/political maneuver than a useful scientific concept (Pies, 2013). Furthermore, many common negative human experiences, such as "loneliness," are medically and psychiatrically relevant because they serve as risk factors for morbidity and mortality (Holt-Lunstad et al., 2015).

Viewing the responses to the survey in the context of the current health care system in the United States may provide at least part of the explanation for this apparent contradiction. In the current health care environment, providers and hospitals face tremendous financial pressure to generate revenue. This incentivizes a mindset for overdiagnosis, so that conditions being seen in the medical settings can be coded, billed, and reimbursed. These system pressures can result in polarizing opinions as some health care professionals may adjust to the system by adopting this mindset, whereas others may respond with cynicism. This may also provide some speculative context for the finding that the degree of concern with current ways of understanding and classification was negatively correlated with years in practice. One can hypothesize that this may partly be a result of cognitive dissonance, that is, one is incentivized to believe that one is treating a disease after years of working within the current system of codes and diagnoses. Our health care system may be deincentivizing critical thinking and making it harder to adopt a structural and contextual approach to emotional distress.

Another explanation for the difference with regard to years in practice may be that our understanding of the role played by biological factors has undergone a maturation over these past decades from simple etiological mechanisms to more complex hypothesized interactions. For instance, in the 1990s, there was widespread enthusiasm surrounding genetic research in psychiatry with hopes that single genes with large effects might be discovered for specific disorders. Although the role of genetic factors remains unarguably important, prior expectations for single gene etiologies have not borne out, and there is a growing awareness that complex gene-environment interactions do not align with categorical constructs (Border et al., 2019; Kendler, 2013). These differences in biological attitudes may account for some of the

discordance. Furthermore, it can be argued that medical students and trainees may not have had much experience with the process of making diagnoses and therefore may underestimate the ways in which diagnostic criteria are applied in real-life practice within the context of "clinical judgment," and may lack awareness that many of the issues that cause concerns about psychiatric diagnosis also apply to general medical diagnoses, such as lack of clear-cut differences from the spectrum of normality (Huda, 2019).

Generally, the more a condition was perceived to have an etiology that was best explained in terms of biological mechanisms, the more likely that condition was considered to be a disease (or vice versa). It is likely that the association goes both ways. Impressions of biological etiology influence judgments of disease status, and impressions of disease status influence judgments of biological etiology. Homosexuality was the sole exception to this trend, and transgender identity had a very weak correlation, perhaps because over the past several decades, the general public's view of these conditions has been shifting from considering them diseases to viewing both as variations of normal human behavior. This shift in understanding by the general public has been accompanied by political and ideological efforts toward declassification of both as diseases, and the efforts to declassify these conditions, including the associated media coverage, may have influenced public understanding of them.

The specific conditions in the survey included many of the conditions from the Tikkinen et al. (2019) survey and were intentionally selected to yield varying viewpoints across the spectrum of agreement to disagreement. In general, however, responses leaned heavily toward disease attribution even in cases where greater disagreement was to be expected. For instance, 85% considered binge eating, 87% considered gambling addiction, 77% considered social anxiety, and 65% considered narcissistic personality to be diseases. Twenty-four percent even considered occupational burnout to be a disease, which the World Health Organization (WHO) has recently included in *ICD-11* as an "occupational phenomenon" but has specifically stated that it is not a "medical condition" (WHO, 2019).

Differences between professionals representing different fields were relatively minor with the exception that psychologists and psychology trainees were overall less likely to call a condition a disease compared with other groups. This may suggest that the psychologists and psychology trainees in our sample held a more restrictive conception of disease compared with their physician colleagues. This is possibly consistent with the findings of Read et al. (2017) from the United Kingdom, who reported that psychology trainees favored psychosocial explanations over biological explanations compared with psychiatry trainees. The differences in our sample, although significant, were not as dramatic as in that study where the two groups are described as being "polar opposites." These differences between US and UK psychology trainees may reflect differences in the educational content and attitudes toward psychiatry that are prevalent in the training cultures in these countries.

Compared with Tikkinen et al. (2019), in our sample, alcoholism and gambling addiction were rated as diseases by a greater proportion of respondents. This may possibly be because of increased emphasis on conceptualizing substance use and related disorders as diseases in US culture, in general, and in US medical education, specifically (National Institute on Drug Abuse, n.d.). In the Tikkinen et al. (2019) survey, 85% to 90% of health care professionals did not view grief as a disease, in contrast to our survey where this figure was only 72%. This could be due to the recent exclusion of the bereavement clause from the diagnostic criteria of major depressive disorder in *DSM-5* (Zachar et al., 2017), leading some professionals to see more overlap between intense grief and depression than those who were studied by Tikkinen et al. Other conditions that were included in both surveys were generally rated similarly by health care professionals.

The importance of clinical utility to the validity of psychiatric nosology—and, consequently, validity of disease states—has been a long-standing issue for psychiatry, reflected in the evolution of the *DSM*, and in the debate surrounding the alternative dimensional classification for personality disorders in *DSM-5* (Gotzsche-Astrup et al., 2016). This focus gives rise to two related but distinct issues. First are issues of clinical utility as they relate to the ease of use: Are criteria difficult to identify or assess in contexts requiring limited time or high pressure (*i.e.*, emergency settings)? Second, clinical utility can also be understood in terms of administrative and financial relevance: Are specific disease states reimbursable by insurers/third parties or are easier to code in electronic medical record systems? In our study, we attempted to ask about both sorts of utility together; however, we concede that respondents may have had conflicting attitudes toward these two forms of utility. Insofar as financial/administrative considerations may be implicitly viewed negatively, we may have primed respondents to answer questions in a biased way. That being said, we suspect a majority of respondents would have admitted that practical considerations are indeed important, but perhaps not as important as scientific evidence.

Recognizing the importance of these conceptual issues in psychiatry, the official white paper on nomenclature (Rounsaville et al., 2002) released in 2002 by the *DSM-5* task force recommended that the research agenda include efforts to analyze the concept of mental disorder underlying *DSM* disorders and to elucidate the concepts used by clinicians in actual practice. Our survey and prior studies, such as the FIND survey, reveal a lack of consensus about how best to categorize various psychiatric conditions and problems and highlight the importance of future research in this area. In addition, this relative lack of consensus on fundamental conceptual issues among clinicians regarding how best to define and categorize mental disorders should be a topic of discussion in future revisions of diagnostic manuals. As we discussed in the introduction, conceptualizations of mental disorders are clinically relevant, and the wide range of responses in our survey suggest the need for clinicians to be more mindful of their own conceptualization.

This study has some notable limitations. The low response rate significantly limits the validity of the findings and makes it harder to accept the comparative analysis relating the different disciplines because the sample may not be representative. Although the response rate in our study is low, it is not atypical. Online survey studies often struggle with low response rates given the busy lives of professionals and trainees, the high volume of e-mails received, and the voluntary nature of the surveys. Examples of low response rates in recently published studies of online surveys include surveys of child and adolescent trainees across the United States, 8% (Hutchison et al., 2020); American and Canadian psychiatry residents, 7% (Isenberg-Grzeda et al., 2016); residents and fellows at University of California Davis, 8% (Haskins et al., 2016); and French psychiatric trainees, 16.4% (Leaune et al., 2019).

A significant limitation of the study is that the survey instrument developed by the authors is not yet validated, and therefore, the results may not necessarily capture the expected outcomes. Other limitations of the study include the self-report nature of the survey, responses from only a single institution, and the focus on biological psychiatry conceptualizations to the exclusion of others. These results may not be generalizable to other institutions and may reflect abstract attitudes rather than attitudes demonstrated in actual clinical encounters. As noted previously, the wording of the questions may have contributed to unintentional bias. For example, the opinion captured by the survey question that a condition may be properly considered a disease in the absence of a known biological factor may reflect the belief that for some conditions, the underlying biological factor has not yet been discovered but is expected in the future. Almost half of our respondents were students/trainees, and many had less than 5 years in practice. It is possible that trainees and early career professionals do not have established opinions on these topics and are open to external influence, which may have contributed to the variability in responses. Our survey, like many other similar instruments attempting to investigate the current subject matter, was

not able to account for personal or family experiences with mental illness, which is a relevant factor in how psychiatric states are conceptualized. Future studies that account for these important factors and collect qualitative feedback that allow participants to elaborate their reasons for why they viewed the survey conditions as being or not being diseases would be instructive.

Future research efforts would be strengthened by the creation of a validated questionnaire, larger multisite studies, comparison of conceptualizations of health care professionals with patients and the general public, and examination of how conceptualizations may affect clinical presentation, stigma, treatment options, and prognosis. Lastly, the use of qualitative studies may be helpful in delineating appropriate wording for future questionnaires.

CONCLUSIONS

Results of this survey highlight the general lack of consensus regarding conceptual issues fundamental to psychiatry. The conceptualizations of mental disorder held by respondents are complex, sometimes contradictory, and do not fit easily within the biological psychiatry paradigm. Consideration of distress/impairment as essential features of mental disorder is consistent with the *DSM* understanding of mental disorder and is also compatible with the general claim that "disease" is best conceptualized as a state of significant suffering and incapacity.

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DISCLOSURE

The authors declare no conflict of interest.

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