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A Comparative Study on Mental Disorder Conceptualization: A Cross-Disciplinary Analysis

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Abstract
The conceptualization of mental disorders varies among professionals, impacting diagnosis, treatment, and research. This cross-disciplinary study aimed to understand how various professionals, including psychiatrists, psychologists, medical students, philosophers, and social sciences experts, perceive mental disorders, their attitudes towards the disease status of certain mental states, and their emphasis on biological versus social explanatory attributions. A survey of 371 participants assessed their agreement on a variety of conceptual statements and the relative influence of biological or social explanatory attribution for different mental states. Our findings revealed a consensus on the need for multiple explanatory perspectives in understanding psychiatric conditions and the influence of social, cultural, moral, and political values on diagnosis and classification. Psychiatrists demonstrated balanced bio-social explanatory attributions for various mental conditions, indicating a potential shift from the biological attribution predominantly observed among medical students and residents in psychiatry. Further research into factors influencing these differing perspectives is necessary.

Keywords Conceptualization · Disorder · Disease status · Biological attribution · Social attribution

Introduction

Formulating the concept of "mental disorder" involves examining how individuals and groups understand what mental disorders are in practice and how they are to be classified, explained, and treated (Harland et al., 2009). Lack of conceptual clarity has been observed to be a widespread and fundamental problem in psychology (Bringmann et al., 2022) and psychiatry (Aftab & Waterman, 2021). The concept of mental disorder is important since it influences how professionals, researchers, and the public approach mental health care and research. Different academic groups may hold different views of mental disorders due to their education, training, experiences, cultural backgrounds, and other factors.

The diagnostic manuals ICD and DSM, which strongly influence how professionals see mental disorders, have limited explanatory power and are open to various conceptualizations (Aftab & Ryznar, 2021). One possible consequence is diagnostic literalism, where mental health problems are conflated with their diagnoses, potentially leading to misdiagnosis and mismanagement of care (Fried, 2022). While diagnoses can be helpful in providing a common language and understanding of mental health problems (Sartorius & Maric, 2017) they are not necessarily equivalent to the actual experiences and symptoms of individuals (Fried, 2022; Kendler, 2016).

Despite the considerable literature on explanatory models in psychiatry (Kendler, 2008), there is a relative lack of empirical data on how mental disorders are conceptualized.

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Previous research performed at a US academic medical center (Aftab et al., 2020) which examined the attitudes of psychiatrists, non-psychiatrist physicians, medical students, nurses and social workers, found that distress and impairment were seen as essential features of mental disorder, and the presence of a biological abnormality was not considered necessary. A study evaluating the lay concept of mental disorder among US residents reported that judgments of mental disorder were primarily based on judgments of emotional distress and impairment, along with rare and aberrant nature of the condition (Tse & Haslam, 2023).

The aim of the current study was to look at how professionals from different educational backgrounds and levels of expertise conceptualize mental disorders, namely psychiatrists, residents in psychiatry, medical students, psychologists, philosophers, non-psychiatrist physicians and experts in social science disciplines. Furthermore, we investigated how individuals perceive a range of mental states when they are labeled as a disease. Finally, we aimed to assess potential differences between professionals in emphasizing biological vs. social attribution to various mental states. Looking at attitudes towards relative contributions of biological and social factors as explanatory attributions can help identify potential differences and similarities between professionals from various backgrounds and provide insights into how these differences may influence mental health care and research. We hypothesized that professionals with different backgrounds would differ with regard to a range of conceptual issues, as well as in their biological vs. social attribution.

Method

Targeted participants included psychiatrists, residents in psychiatry, medical students, psychologists, philosophers, experts in social science disciplines (consisting of sociologists, historians and political theorists), and non-psychiatrist physicians. Participants were recruited through convenience sampling via email invitations, social media and via snowball sampling, in which respondents were asked to distribute the survey to other colleagues. The survey was conducted online using a secure platform.

The study was approved by the Ethical Board of the University Clinical Centre of Serbia. All participants were informed about the purpose of the study and provided informed consent prior to completing the survey. Confidentiality and anonymity were ensured throughout the study.

The survey consisted of three sections. The first section collected sociodemographic information, including profession, age, gender and years of clinical experience. The second section contained questions related to the participants' conceptualization of mental disorders. Participants were presented with statements related to mental disorders and asked to rate their level of agreement on a five-point Likert scale. These statements were selected based on ongoing conceptual debates in psychiatry and modeled after previous research of Aftab et al. (2020). The corresponding author of the original study was consulted on the selected items and back-to-back translation of all replicated statements was performed. We added several additional statements, which targeted attitudes toward pluralistic perspectivism, neurobiologically-exclusivist explanation, the necessity of considering subjective experiences of the patient and recognition of mental disorders as a primarily social construct. We also refined the original survey's statement on diagnostic practicalities, separately addressing benefits like improved electronic health coding and professional communication, and service reimbursement based on diagnosis. All conceptual statements were further discussed among a team consisting of a psychiatrist, philosopher, psychologist, and a medical student to ensure clarity and avoid any potential confusion.

In the third section of the survey, participants were asked to assess the disease status, biological and social etiology attribution of 14 conditions. For each condition, three statements were provided. The first statement was "[This state of being] is a disease." The second statement was "[This state of being] can best be understood and explained in terms of brain/body dysfunction." The third statement was "The occurrence and maintenance of [this state of being] is predominantly determined by social factors." The 14 conditions included in this section of the survey were based on previously published studies by Tikkinen et al. (2019) and Aftab et al. (2020). The list of conditions included in the survey was: absence of sexual desire, alcoholism, binge eating, gambling addiction, grief, homosexuality, narcissistic personality, with the addition of attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). These conditions were chosen as they have been the subject of ongoing debate and considered controversial in the field of psychiatry. The inclusion of these conditions was intended to further explore how different professions conceptualize and understand these specific states. The selection of the statement regarding brain/body dysfunction was inspired by Aftab et al. work and aimed to capture the idea of explanatory biological reductionism, where biological explanations are viewed as preferred. The statement on social factors was intended to capture how much an individual subscribed to the model of social determinants of different mental states.

In this context, it is important to clarify our intention regarding "biological" and "social" explanatory attributions. While these terms are often used in an opposing manner in the context of etiological explanations of psychiatric conditions, we are cautious not to imply and endorse any strong

dualistic claims. We recognize that complex, multi-level causality appears to be the rule in psychiatry. In our view, the relationship of the "biological" and "social" is describable with reference to levels of explanation and organization (Eronen, 2021), such as that social phenomena are mediated by and made possible by biological phenomena (by complex interactions of two brains). The social domain requires a distinct vocabulary pertaining to elements of intersubjective relations, different from the vocabulary which we use to describe the neurophysiological. The epistemological and ontological aspects of these debates are, however, complicated, and for the purposes of a survey study such as this, we considered it best to leave the terms undefined, so that respondents can rely on their intuitive understanding of these phenomena.

Statistical Analysis

Descriptive statistics were used to summarize the sociodemographic characteristics of the sample. Responses to the conceptual statements and statements on mental illness and its attribution to biological and social factors were quantified as follows for statistical analyses: strongly disagree = -2, disagree to some extent = -1, neither agree nor disagree = 0, agree to some extent = 1, and strongly agree = 2. Mean values were then calculated.

To analyze the balance between biological and social determinants of selected mental states, a "balance score" was calculated for each respondent and each mental state. The balance score was estimated by calculating the absolute difference between the mean scores for the questions on biological and social determinants. A smaller absolute difference (close to zero) indicates that the respondent considered biological and social determinants for a particular mental state to be comparable. A large absolute difference reflects skewness towards biological (positive values) or social determinants of a mental state (negative values).

To examine differences among professions, we first conducted SPSS Ordinal Regression, including age, gender, and years of clinical experience as covariates. If the ordinal regression revealed a significant difference among fields of work for a specific response, we followed up with Kruskal-Wallis test and Bonferroni post hoc pairwise comparisons to determine which groups exhibited significant differences from one another.

Table 1 Sociodemographic characteristics of primary study groups

Psychiatry resident, n = 53	
Years of age, mean ± SD	32.4 ± 5.2
Female, %	75.5
Clinical experience, mean ± SD	4.8 ± 3.2
Psychiatrist, n = 78	
Years of age, mean ± SD	46 ± 9.8
Female, %	69.2
Clinical experience, mean ± SD	16.4 ± 9.3
Medical student, n = 68	
Years of age, mean ± SD	23.5 ± 3.2
Female, %	79.4
Philosopher, n = 38	
Years of age, mean ± SD	34.2 ± 7.3
Male, %	47.4
Psychologist, n = 78	
Years of age, mean ± SD	33.46 ± 10.7
Female, %	82.1
Students, %	24.3
Clinical experience, mean ± SD	9.5 ± 9
Physician, non-psychiatrist, n = 35	
Years of age, mean ± SD	40.8 ± 11.2
Female, %	68.6
Clinical experience, mean ± SD	15.1 ± 10.6
Expert in social science disciplines (sociologist, political theorist etc.), n = 21	
Years of age, mean ± SD	35.4 ± 13.2
Female, %	52.4

Results

Survey responses were received from 371 respondents. The mean age of the sample was 35.02 years (SD = 11.4). A total of 71.4% of participants were female. Table 1 shows sociodemographic characteristics of previously defined primary subgroups.

Conceptual Statements

In Table 2, the responses to conceptual statements are summarized and ranked by standard deviation (SD) from lowest to highest. The level of "consensus" (which may be positive or negative with regards to the statement) among respondents is emphasized by this ranking method: stronger consensus is indicated by a lower SD (less variability in responses), while greater diversity of opinion is shown by a higher SD (more variability). At the top of the table, statements with most convergence among experts are listed, and those with the least convergence are placed at the bottom. This ordering, when considered in conjunction with the mean values, provides insights into the extent of agreement or disagreement on each statement. For example, a strong consensus in disagreement is suggested by a low SD with a high negative mean, while a polarized view with no clear consensus is indicated by a high SD with a mean around zero. By arranging the statements in this manner areas of common agreement and those warranting further discussion are highlighted.

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
A complete understanding of psychiatric conditions requires taking into account multiple explanatory perspectives.	1.57	0.665
Diagnoses of mental disorders have certain advantages because they are easy to code in the electronic health system and communicate with other mental health workers.	0.67	0.974
Current systems of classification of mental disorders (International Classification of Disorders) approach leads to the medicalization/pathologization of ordinary life.	0.13	0.976
Classification of mental disorders should be predominantly based on characteristic disturbances in the subjective experience of those who have the disorder.	-0.02	1.085
The diagnosis and classification of mental disorders is influenced by social, cultural, moral, and political values.	0.89	1.090
Mental disorders are predominantly social constructs.	-0.49	1.091
The difference between what is normal and what is disordered can be determined by objective, scientific facts.	0.08	1.092
Reimbursement of provided health services based on a diagnosis of a mental disorder is of equal importance for defining a diagnosis of a mental disorder as is scientific evidence.	-0.17	1.097
Distinctions between conditions in psychiatric classification, such as the diagnostic distinction between major depression and generalized anxiety, have more to do with how useful these distinctions are in our clinical and scientific work rather than how well they capture objective reality.	0.02	1.104
If we had perfect knowledge of neurobiology, it would be theoretically possible for us to eliminate psychological and social explanations for psychiatric conditions and rely only on neurobiological explanations.	-0.68	1.181
I am concerned about the way psychiatry currently understands and classifies mental disorders.	0.01	1.129
For a condition to be a mental disorder, there must be an underlying biological abnormality.	-0.66	1.132
Mental disorders must cause distress or functional impairment to be considered disorders.	0.83	1.150
All mental disorders are diseases.	-0.62	1.229
Physicians should not treat commonplace, negative experiences of human living, such as loneliness or relationship difficulties.	-0.76	1.294

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

Respondents overall agreed with the following statements:

- "A complete understanding of psychiatric conditions requires taking into account multiple explanatory perspectives" (mean = 1.57, SD = 0.665).
- "The diagnosis and classification of mental disorders is influenced by social, cultural, moral, and political values." (mean = 0.89, SD = 1.090).
- "Mental disorders must cause distress or functional impairment to be considered disorders." (mean = 0.83, SD = 1.150).
- "Diagnoses of mental disorders have certain advantages because they are easy to code in the electronic health system and communicate with other mental health workers." (mean = 0.67, SD = 0.974).

There was overall disagreement with regard to the following:

- "Physicians should not treat commonplace, negative experiences of human living, such as loneliness or relationship difficulties." (mean = -0.76, SD = 1.294).
- "If we had perfect knowledge of neurobiology, it would be theoretically possible for us to eliminate psychological and social explanations for psychiatric conditions and rely only on neurobiological explanations." (mean = -0.68, SD = 1.181).
- "For a condition to be a mental disorder, there must be an underlying biological abnormality." (mean = -0.66, SD = 1.132).
- "All mental disorders are diseases." (mean = -0.62, SD = 1.229).

Disease Status, Biological and Social Etiology Attribution

Table 3 summarizes the results of disease status attribution of selected conditions. Overall, the following conditions were considered diseases with more than 75% of the respondents in agreement (strongly agree or agree to some extent): gambling addiction, pedophilia and schizophrenia. Only grief was considered not a disease by more than 75% of the respondents. Table 4 summarizes responses to brain/body and social etiology attribution.

Endorsement of Biological vs. Social Perspectives

Table 5 presents the means and standard deviations, distinguishing between biological (indicated by positive values) and social (indicated by negative values) explanatory skewness for selected conditions. It reveals that conditions such as schizophrenia, autism spectrum disorder, and pedophilia have a pronounced biological explanatory skewness,

Table 3 Summary of responses to disease status attribution

	Mean	SD	% of Subjects in Agreement or Disagreement	
"[This state of being] is a disease"				
Grief	-1.14	1.131	75.2	Disagreement
Homosexuality	-0.87	1.305	64.7	
Absence of sexual desire	-0.69	1.134	60.6	
Occupational burnout	-0.43	1.239	48.2	Neutral
Transgender identity	-0.08	1.429	39.9	(% disagreement)
Social anxiety	0.44	1.238	51.2	Agreement
ADHD	0.61	1.182	56.6	
Narcissistic personality	0.55	1.239	57.1	
Binge eating disorder	0.90	1.089	70.9	
Alcoholism	0.98	1.070	72	
Autism spectrum disorder	1.04	1.118	73	
Gambling addiction	1.14	1.029	79	
Pedophilia	1.31	1.051	80.6	
Schizophrenia	1.80	0.535	84.9	

Table 4 Summary of responses to brain/body etiology attribution and social etiology attribution

	Mean	SD	% of Subjects in Agreement or Disagreement	
"[This state of being] can best be understood and explained in terms of brain/body dysfunction"				
Grief	-1.01	1.093	70.1	Disagreement
Homosexuality	-0.72	1.297	58.2	
Occupational burnout	-0.49	1.202	50.1	
Absence of sexual desire	-0.38	1.157	47.2	
Narcissistic personality	-0.25	1.148	41.2	
Social anxiety	0	1.090	39.8	Neutral (% disagreement)
Gambling addiction	0.09	1.136	37.5	Agreement
Alcoholism	0.05	1.197	38.3	
Binge eating disorder	0.25	1.135	43.7	
Transgender identity	0.32	1.251	45.3	
ADHD	0.58	1.066	56.4	
Pedophilia	0.59	1.269	56.6	
Autism spectrum disorder	1.01	1.096	71.2	
Schizophrenia	1.28	0.938	80.1	
"The occurrence and maintenance of [this state of being] is predominantly determined by social factors"				
Autism spectrum disorder	-0.67	1.096	57.7	Disagreement
Homosexuality	-0.66	1.214	57.4	
Pedophilia	-0.56	1.185	51.8	
Schizophrenia	-0.55	1.026	55.5	
Absence of sexual desire	-0.44	1.013	48.8	
ADHD	-0.24	1.125	41.2	
Transgender identity	-0.34	1.189	41.2	
Grief	-0.19	1.198	41	Neutral (% disagreement)
Narcissistic personality	-0.02	1.090	35	
Binge eating disorder	0.14	1.031	39.1	Agreement
Alcoholism	0.38	1.026	48.2	
Social anxiety	0.53	1.069	51.5	
Gambling addiction	0.44	1.047	52.5	
Occupational burnout	0.82	1.107	67.7	

Table 5 Summary biological/social balance scores

	Mean	SD
Schizophrenia	1.83	1.474
Autism spectrum disorder	1.68	1.534
Pedophilia	1.15	1.739
ADHD	0.82	1.663
Transgender identity	0.66	1.557
Binge eating disorder	0.10	1.510
Absence of sexual desire	0.06	1.493
Homosexuality	-0.06	1.312
Narcissistic personality	-0.23	1.486
Alcoholism	-0.33	1.572
Gambling addiction	-0.36	1.536
Grief	-0.82	1.432
Occupational burnout	-1.31	1.566

Note. Positive values reflect skewness towards biological attribution. Negative values reflect skewness towards social attribution

whereas conditions like grief and occupational burnout are characterized by a significant social explanatory skewness.

Differences Between Fields of Training/Work on Conceptual Statements

In Table 6, differences are reported among various professional groups in their conceptualization of mental disorders, as revealed by ordinal regression and Kruskal-Wallis test results.

Our analysis showed that psychologists were significantly more likely to disagree with the notion that a mental disorder must include an underlying biological abnormality, a stance that was less pronounced but still present among psychiatrists and residents in psychiatry. In contrast, the idea that physicians should not treat commonplace negative experiences like loneliness or relationship difficulties was more prevalent among medical students, residents in psychiatry, and non-psychiatrist physicians, compared to psychologists. Notably, medical students held a neutral view on mental disorders being predominantly social constructs, which sharply contrasted with the disagreement expressed by psychiatrists and residents in psychiatry. This divergence extended to the influence of social, cultural, moral, and political values in the diagnosis and classification of mental disorders, with psychologists and medical students strongly acknowledging this influence, unlike non-psychiatrist physicians, who only slightly agreed.

The necessity of distress as a criterion for a disorder was more strongly affirmed by psychologists, compared to medical students, non-psychiatrist physicians, and experts in

Table 6 Comparisons of responses to conceptual statements 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]
For a condition to be a mental disorder, there must be an underlying biological abnormality.	Residents in psychiatry	Psychologists	-0.36	1.128	213.55	6	16.6	0.011
	Psychiatrists	Psychologists	-0.46	1.136	203.55			
	Medical students	/	-0.81	1.123	172.03			
	Philosophers	/	-0.58	1.266	191.37			
	Psychologists	Residents in psychiatry, Psychiatrists	-1.03	1.051	150.90			
	Non-psychiatrist physicians	/	-0.66	0.873	192.06			
	Expert in social science disciplines	/	-0.52	1.289	196.60			
Physicians should not treat commonplace, negative experiences of human living, such as loneliness or relationship difficulties.	Residents in psychiatry	Psychologists	-1.00	1.271	164.26	6	25.772	< 0.001
	Psychiatrists	/	-0.59	1.253	201.45			
	Medical students	Psychologists	-1.22	1.056	149.58			
	Philosophers	/	-0.47	1.289	210.89			
	Psychologists	Residents in psychiatry, Medical Students, Non-psychiatrist physicians	-0.31	1.453	217.66			
	Non-psychiatrist physicians	/	-1.11	1.132	156.91			
	Expert in social science disciplines	/	-0.95	1.203	169.43			
Mental disorders are predominantly social constructs.	Residents in psychiatry	Medical students	-0.81	1.110	154.68	6	18.284	0.006
	Psychiatrists	Medical students	-0.68	0.979	169.84			
	Medical students	Residents in psychiatry, Psychiatrists	-0.03	1.146	228.16			
	Philosophers	/	-0.53	0.951	183.51			
	Psychologists	/	-0.49	1.071	183.77			
	Physicians, non-psychiatrist	/	-0.51	1.040	182.83			
	Expert in social science disciplines	/	-0.43	1.287	188.19			
The diagnosis and classification of mental disorders is influenced by social, cultural, moral and political values	Residents in psychiatry	/	0.62	1.228	162.76	6	21.072	0.002
	Psychiatrists	/	0.86	1.136	183.05			
	Medical students	Non-psychiatrist physicians	1.19	0.868	210.44			
	Philosophers	/	1.00	0.972	190.86			
	Psychologists	Non-psychiatrist physicians	1.10	0.988	203.79			
	Non-psychiatrist physicians	Medical students, Psychologists	0.26	1.245	129.27			
	Expert in social science disciplines	/	0.79	0.976	168.37			
Mental disorders must cause distress or functional impairment to be considered disorders.	Residents in psychiatry	/	0.77	1.120	176.67	6	34.998	< 0.001
	Psychiatrists	Medical students	1.06	0.972	202.06			
	Medical students	Psychiatrists, Psychologists	0.44	1.365	157.10			
	Philosophers	/	0.78	1.058	174.80			
	Psychologists	Medical students, Non-psychiatrist physicians, Expert in social science disciplines	1.33	0.848	230.87			
	Non-psychiatrist physicians	Psychologists	0.40	1.265	147.03			
	Expert in social science disciplines	Psychologists	0.26	1.195	129.87			

Table 6 (continued)

	Specialty Groups of Respondents	Significantly Different From[a]	Mean	SD	Mean Rank	df	Kruskal-Wallis H	Sig.[b]
I am concerned about the way psychiatry currently understands and classifies mental disorders.	Residents in psychiatry	/	0.00	1.00	185.17	6	27.224	< 0.001
	Psychiatrists	/	-0.03	1.151	179.75			
	Medical students	Philosophers, Psychologists	-0.51	1.086	140.04			
	Philosophers	Medical students	0.24	1.116	205/55			
	Psychologists	Medical students	0.42	1.026	222.82			
	Physicians, non-psychiatrist	/	-0.20	1.208	163.91			
	Expert in social science disciplines	/	0.21	1.134	200.87			
All mental disorders are diseases.	Residents in psychiatry	Medical students	-0.60	1.246	186.11	6	52.937	< 0.001
	Psychiatrists	Medical students	-0.86	1.125	165.24			
	Medical students	Residents in psychiatry, Psychiatrists, Psychologists, Expert in social science disciplines	0.18	1.269	248.37			
	Philosophers		-0.51	1.193	196.46			
	Psychologists	Medical students, Non-psychiatrist physicians	-1.15	0.854	141.16			
	Non-psychiatrist physicians	Psychologists	-0.23	1.308	216.57			
	Expert in social science disciplines	Medical students, Non-psychiatrist physicians	-1.26	1.046	126.03			
Diagnoses of mental disorders have certain advantages because they are easy to code in the electronic health system and communicate with other mental health workers.	Residents in psychiatry	Philosophers, Expert in social science disciplines	0.92	0.917	208.65	6	24.901	< 0.001
	Psychiatrists	Philosophers, Expert in social science disciplines	0.88	0.882	206.85			
	Medical students	/	0.53	1.029	170.99			
	Philosophers	Residents in psychiatry, Psychiatrists, Psychologists	0.22	0.854	131.84			
	Psychologists	Philosophers	0.82	0.802	199.26			
	Physicians, non-psychiatrist	/	0.49	1.121	165.44			
	Expert in social science disciplines	Residents in psychiatry, Psychiatrists	0.11	1.323	138.75			
Reimbursement of provided health services based on a diagnosis of a mental disorder is of equal importance for defining a diagnosis of a mental disorder as is scientific evidence.	Residents in psychiatry	/	-0.17	1.167	179.11	6	30.732	< 0.001
	Psychiatrists	Medical students, Non-psychiatrist physicians, Expert in social science disciplines	-0.67	1.136	138.74			
	Medical students	Psychiatrists	0.22	0.850	218.84			
	Philosophers	/	-0.19	0.938	183.62			
	Psychologists	/	-0.29	1.043	171.22			
	Non-psychiatrist physicians	Psychiatrists	0.26	1.172	215.66			
	Expert in social science disciplines	Psychiatrists	0.22	1.060	217.47			

Table 6 (continued)

	Specialty Groups of Respondents	Significantly Different From[a]		Mean	SD	Mean Rank	df	Kruskal-Wallis H	Sig.[b]
If we had perfect knowledge of neurobiology, it would be theoretically possible for us to eliminate psychological and social explanations for psychiatric conditions and rely only on neurobiological explanations	Residents in psychiatry	/		-0.49	1.171	202.52	6	37.720	< 0.001
	Psychiatrists	/		-0.69	1.166	184.15			
	Medical students	/		-0.29	1.160	219.64			
	Philosophers	/		-0.95	1.153	160.23			
	Psychologists	Non-psychiatrist physicians		-1.23	0.979	135.12			
	Non-psychiatrist physicians	Psychologists		-0.14	1.141	232.60			
	Expert in social science disciplines	/		-0.79	1.316	171.29			

[a]Bonferroni post hoc test for pairwise comparisons

[b]Kruskal-Wallis test

social science disciplines. Philosophers and psychologists showed the most concern in terms of psychiatry's current understanding and classification of mental disorders.

Opinions also differed on whether all mental disorders should be classified as diseases. Medical students remained neutral, while psychiatrists, residents in psychiatry, psychologists, and experts in social science disciplines generally disagreed with this notion. Residents in psychiatry, psychiatrists, and psychologists were more likely to find healthcare system communication and coding advantages in the practice of diagnosing, compared to philosophers and experts in social science disciplines.

Regarding the role of reimbursement for mental health services based on a diagnosis, psychiatrists disagreed that it held equal importance for disorder conceptualization as scientific evidence. This stood in contrast to the weak general agreement found among medical students, non-psychiatrist physicians, and experts in social science disciplines. Finally, the possibility of eliminating psychological and social explanations for psychiatric conditions in favor of purely neurobiological explanations was strongly contested by psychologists, while non-psychiatrist physicians showed only a weak disagreement with this proposition.

Differences Between Fields of Training/Work on Biological/Social Explanatory Endorsement

In our analysis of professional perspectives on various mental health conditions, notable differences emerged in terms of biological and social factors attribution (presented in Table 7).

Our findings indicate that psychiatrists adopted a balanced biosocial perspective on alcoholism, in contrast to psychologists who primarily endorsed social factors for this condition. Similarly, psychologists leaned more towards social attributions of grief, whereas non-psychiatrist physicians exhibited a more balanced biosocial stance. In the case of narcissistic personality disorder, psychologists were inclined towards a stronger influence of social factors, diverging from the biological endorsement by residents in psychiatry and the balanced biopsychosocial perspective of medical students.

Occupational burnout had a strong social endorsement from experts in social science disciplines, compared to medical students. Regarding pedophilia, medical students exhibited a more pronounced biological endorsement, in contrast to non-psychiatrist physicians, and even more so than psychiatrists and psychologists, who considered biological factors less important. The perspective on schizophrenia also varied significantly among professionals; residents in psychiatry considered biological factors more important compared to psychologists. Finally, in the conceptualization of

social anxiety, psychiatrists held a balanced view, incorporating both biological and social aspects. This perspective was distinct from experts in social science disciplines, who primarily emphasized biological factors.

Discussion

Our study revealed significant variations in how different professional groups conceptualize mental disorders. While there was a general consensus on the multifactorial nature of psychiatric conditions, opinions diverged notably on the necessity of a biological basis for mental disorders and the classification of various conditions as diseases.

In our comparative analysis of professional groups, distinct viewpoints emerged: psychiatrists and psychiatry residents diverged from psychologists in their views on the necessity of a biological basis for mental disorders and how commonplace negative experiences should be treated. Medical students showed neutrality regarding the view of mental disorders as primarily social constructs, a stance generally opposed by psychiatrists and residents. Both psychologists and medical students emphasized the role of social, cultural, and moral values in the diagnosis and classification of mental disorders, rejecting a sole reliance on neurobiological explanations. Psychiatrists were also less likely to emphasize the importance of reimbursement influence on mental disorder diagnoses, while philosophers' views were in general moderate, aligning more closely with those of psychiatrists. These diverse perspectives underscore the critical need for interdisciplinary dialogue in understanding mental disorders.

Notably, a substantial consensus was observed in categorizing certain conditions as diseases, with over 75% of respondents agreeing on gambling addiction, pedophilia, and schizophrenia. In contrast, a similar majority did not classify grief as a disease, aligning with findings by Tikkinen et al. (2019). However, our study differs in that a significant portion of our participants viewed gambling addiction as a disease. These differences in disease perception have profound implications, since labeling a mental state as a disease can enhance public awareness and empathy (Tikkinen et al., 2019), but might also overshadow social and cultural considerations, leading to a greater dependence on pharmacological treatments (Conrad, 1992). This highlights the importance of further exploring how mental disorders are conceptualized, not just among professionals, but also within the general public and among mental health policymakers.

The biopsychosocial model of health, proposed by George Engel in the late 1970s, argues that health and illness are determined by a dynamic interaction between biological, psychological, and social factors. Its relevance has been highlighted and promoted in various medical fields, including psychiatry, as a holistic way to understand and treat illnesses (Wade & Halligan, 2017). However, one of the greatest conceptual criticisms of such models revolves around the problem of integration in psychiatry. Namely, even though different levels are distinguished (bio-, psycho-, social), their intertwinement is not explicated (De Haan, 2020). In our study, psychiatrists seemed to demonstrate balanced bio-social views for conditions like alcoholism. This perspective is consistent with the recognition in the field that alcoholism involves both biological vulnerabilities (such as genetic predispositions and alterations in brain functioning) and social factors (such as stress, trauma, and social networks) (Rehm & Shield, 2019). Psychologists, on the other hand, appeared to favor social factors in their understanding of mental health conditions. This is not surprising given the historical focus of psychology on the role of environment, learning, and personal experiences in shaping behavior and mental health. For instance, in the case of grief, psychologists in our study leaned more towards social factors, which could reflect the recognition of the importance of personal loss, social support, and cultural norms in shaping the grief process. Interestingly, medical students showed balanced bio-social views across conditions, suggesting that the current training in medicine might be promoting a bio-social perspective. This finding aligns with the recent emphasis on integrating biological and social understandings in medical education (Westerhaus et al., 2015).

Our findings challenge the notion of biological hegemony among practicing psychiatrists. Contrary to expectations, psychiatrists in our study showed less endorsement of biological factors compared to medical students, residents in psychiatry, and non-psychiatrist physicians. This aligns with Aftab et al. (2020), who noted a similar trend. Interestingly, one study in the UK (Harland et al., 2009) found a strong preference for the biological model among trainees, echoed by the lay public views (Butlin et al., 2019). However, Ahn et al. (2006) observed that the preference for a biological model diminishes with increased clinical experience, suggesting a growing appreciation for the multifactorial nature of mental health issues. This trend of a more nuanced understanding is evident in our study. Yet, moving towards a holistic approach remains a topic of debate. A broader literature review indicates there is an increasing shift to a biomedical bias (Lebowitz & Appelbaum, 2019), raising questions about the true direction of the field. Are we moving towards a more pluralistic and holistic understanding of mental health, or is the biomedical model becoming dominant? It is also unclear to what extent responses by individuals on such surveys are reflective of their true beliefs,

Table 7 Comparisons of biological/social explanatory endorsement of mental states 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]
Alcoholism	Residents in psychiatry	/	-0.19	1.545	195.43	6	17.681	0.007
	Psychiatrists	Psychologists,	-0.01	1.499	205.11			
	Medical students	/	-0.10	1.306	200.79			
	Philosophers	/	-0.71	1.916	166.54			
	Psychologists	Psychiatrists	-0.79	1.390	153.21			
	Physicians, non-psychiatrist	/	0.09	1.669	213.77			
	Expert in social science disciplines	/	-0.95	1.936	154.05			
Grief	Residents in psychiatry	/	-0.57	1.715	204.17	6	16.875	0.010
	Psychiatrists	/	-0.88	1.348	182.03			
	Medical students	/	-0.69	1.237	196.53			
	Philosophers	/	-1.11	1.485	167.87			
	Psychologists	Non-psychiatrist physicians	-1.17	1.273	160.15			
	Non-psychiatrist physicians	Psychologists	-0.11	1.568	235.06			
	Expert in social science disciplines	/	-1.05	1.359	167.88			
Narcissistic personality	Residents in psychiatry	Psychologists	0.25	1.453	222.92	6	24.564	< 0.001
	Psychiatrists	/	-0.26	1.400	182.49			
	Medical students	Psychologists	0.09	1.301	204.79			
	Philosophers	/	-0.53	1.736	170.46			
	Psychologists	Residents in psychiatry, Medical Students	-0.71	1.563	151.08			
	Physicians, non-psychiatrist	/	0.17	1.043	218.57			
	Expert in social science disciplines	/	-0.81	1.632	148.55			
Occupational burnout	Residents in psychiatry	/	-1.17	1.673	198.08	6	13.700	0.033
	Psychiatrists	/	-1.21	1.606	192.79			
	Medical students	Expert in social science disciplines	-1.03	1.257	206.71			
	Philosophers	/	-1.71	1.707	161.95			
	Psychologists	/	-1.44	1.525	172.71			
	Non-psychiatrist physicians	/	-1.06	1.533	201.64			
	Expert in social science disciplines	Medical student	-2.24	1.670	130.02			
Pedophilia	Residents in psychiatry	/	1.36	1.72	197.31	6	21.638	0.001
	Psychiatrists	Medical students, Non-psychiatrist physicians	0.68	1.655	156.54			
	Medical students	Psychiatrists, Psychologists	1.69	1.509	216.86			
	Philosophers	/	0.87	1.948	170.84			
	Psychologists	Medical student	0.81	1.721	166.11			
	Non-psychiatrist physicians	Psychiatrists	1.80	1.389	226.08			
	Expert in social science disciplines	/	1.29	2.239	201.48			

Table 7 (continued)

	Specialty Groups of Respondents	Significantly Different From[a]	Mean	SD	Mean Rank	df	Kruskal-Wallis H	Sig.[b]
Schizophrenia	Residents in psychiatry	Psychologists	2.28	1.306	217.83	6	17.992	0.006
	Psychiatrists	/	2.10	1.401	205.53			
	Medical students	/	1.62	1.282	166.04			
	Philosophers	/	2.11	1.767	210.93			
	Psychologists	Residents in psychiatry	1.47	1.457	161.28			
	Non-psychiatrist physicians	/	1.71	1.564	176.04			
	Expert in social science disciplines	/	1.43	1.660	161.97			
Social anxiety	Residents in psychiatry	/	0.21	1.291	161.41	6	18.277	0.006
	Psychiatrists	Expert in social science disciplines	0.09	1.321	154.97			
	Medical students	/	0.54		191.01			
	Philosophers	/	0.95	1.986	206.32			
	Psychologists	/	0.74	1.566	206.62			
	Physicians, non-psychiatrist	/	0.57	1.378	188.84			
	Expert in social science disciplines	Psychiatrists	1.24	1.700	229.02			

[a]Bonferroni post hoc test for pairwise comparisons

[b]Kruskal-Wallis test

and perhaps more importantly, their behaviors in clinical and research contexts. Our findings add another voice to this discussion, highlighting the complexity and evolving nature of professional perspectives in mental health.

Our study, conducted in Serbia, revealed interesting points of accordance and contrasts with research in the United States (Aftab et al., 2020). Serbian respondents showed less agreement than their American counterparts on the influence of social, cultural, moral, and political values in psychiatric diagnoses. This difference may reflect the varied impact of recent criticisms against the DSM, particularly influenced by the neurodiversity movement, which has been more prominent in the U.S. Neurodiversity movement approaches have also profoundly changed traditional views on autism and similar diagnoses by challenging the pathological understanding of their conditions. Proponents of this movement fight for social justice and argue against the default pathologization of human neurodiversity, i.e. accepting different, divergent ways of functioning (Blume, 1998; Singer, 1999; Milton, 2012; Armstrong, 2015; Jaarsma & Welin, 2012; Chapman, 2021). Disability is seen as arising from the interaction of individual differences and social accommodations and is not understood as something intrinsic to the condition itself. In this manner, disabilities such as autism, ADHD, bipolar disorder and dyspraxia are understood as different "cognitive styles" and humanity's "natural variation" (Jaarsma & Welin, 2012). Neurodiversity movement has only recently gained attention in regions like the UK and, to a lesser extent, Central Europe (Chapman, 2019; Doyle & McDowall, 2021). In our study, over 70% of participants viewed the autism spectrum as a disease, a perspective at odds with the neurodiversity movement. ADHD received a similar disease label from about half of the respondents. This contrasts with U.S. findings, where there was a notable disagreement on defining mental disorders based solely on objective, scientific facts, while Serbian participants showed neutrality. Moreover, both Serbian and U.S. professionals agreed that mental disorders should cause distress to be considered such, but disagreed on the necessity of a neurobiological abnormality for a condition to qualify as a mental disorder. These findings highlight the diverse perspectives among mental health professionals from different regions in the world and underscore the importance of considering the sociocultural contexts in understanding and classifying mental disorders.

Our study has several limitations. Firstly, the measures used in this study were not validated specifically for this research, which may introduce measurement bias or limitations in capturing the nuances of participants' perspectives. Secondly, the sample used in this study relied on a snowballing method, which may result in selection bias and limit the generalizability of the findings. Future investigations

would benefit from employing a systematic recruitment method to obtain a more representative sample. Thirdly, conceptual clarification of various statements is necessary for robust comparisons between statements. Although we attempted to define key terms (e.g., 'disease') at the outset, the online survey format precluded participants from seeking further clarifications. This may have led to varied interpretations of the survey items, potentially affecting the robustness of comparisons between different professional groups. To address this, future research could incorporate qualitative methods, such as focus groups or in-depth interviews. These approaches would allow for a more dynamic and interactive exploration of concepts, providing richer, more nuanced data and a clearer understanding of participants' views. Additionally, the online nature of the survey may have restricted the depth of responses. In-person qualitative methods could offer more detailed and contextually rich insights into the professionals' conceptualizations of mental disorders. Fourthly, a significant limitation of our study concerns the potential disconnect between psychiatrists' stated conceptualizations of mental disorders and their actual clinical practices. Although our findings indicate a propensity towards a biopsychosocial approach among psychiatrists, they do not provide evidence of how this perspective is applied in real-world interventions. This gap raises questions about whether the expressed holistic attitudes are genuinely reflected in treatment methods or represent a theoretical alignment with prevailing professional discourse. Recognizing this, our study underscores the need for future empirical research that directly observes psychiatric practices. Such studies are crucial to determine if the theoretical beliefs professed by psychiatrists are truly manifested in their everyday work, thereby providing a more accurate assessment of the evolution in psychiatric practice.

Despite these limitations, our study makes a valuable contribution by addressing an important gap in the literature. To the best of our knowledge, this is the first empirical research examining the conceptualization of mental disorders in Serbia and Central and Southeastern Europe. Our study has illuminated the diverse ways in which different professional groups conceptualize mental disorders, underlining significant variations in the emphasis on biological and social factors. This disparity accentuates the critical need for interdisciplinary dialogue to enhance our understanding and treatment of mental health conditions. Notably, there was considerable consensus on the classification of certain conditions as diseases, reflecting varied perspectives with profound implications for psychiatric practice and mental health policy. Our findings also highlight the growing relevance of the biopsychosocial model, although challenges remain in its practical application. Furthermore, the differences observed between Serbian and U.S. professionals underscore the impact of local sociocultural contexts on mental health conceptualizations. Moving forward, it may be crucial to empirically examine the alignment between experts' theoretical approaches gathered in our study and actual clinical practices in psychiatry, advocating for a more integrated and nuanced approach in future mental health research.

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