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Mental Health Professionals' Attitudes towards Patients with Borderline Personality Disorder: The Role of Disgust

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ABSTRACT

Negative attitudes towards patients with borderline personality disorder (BPD) may affect treatment outcomes. We aimed to identify a) negative attitudes exhibited by mental health professionals towards patients with BPD and b) the effects of disgust propensity and disgust sensitivity on these negative attitudes. Mental health professionals (N = 136) completed questionnaires on attitudes towards patients with BPD and disgust propensity/sensitivity. Significant differences in negative attitudes towards patients with BPD based on gender, marital status, occupational subgroup, educational level, psychotherapy training, level of exposure to patients with BPD, and political ideology were found. Results suggested patients with BPD are viewed by mental health professionals as ineffective, incomprehensible, dangerous, unworthy, immoral, undesirable to be with, and dissimilar to the mental health professionals. Moreover, disgust propensity and disgust sensitivity were associated with stronger negative attitudes towards patients with BPD. The findings emphasize the importance of mental health professionals' awareness of the emotion of disgust as a relevant factor to their negative attitudes towards patients with BPD.

Keywords

Borderline Personality Disorder, Mental Health Professionals, Attitudes, Disgust Propensity, Disgust Sensitivity.

Introduction

Patients with borderline personality disorder (BPD) are in constant search of psychiatric care [1] representing 15-25% of all reported psychiatric cases [2] and 36-67% of patients in psychiatric clinics [3], while frequency rates of BPD are estimated at 20% in hospitals and 11% in community settings respectively [4]. The global prevalence of BPD is between 0.7% and 5.9% [5-7]. Some 70% of patients with this diagnosis are likely to attempt suicide [8] and mortality rates are as high as 10% [9-11], making patients with BPD one of the most suicidal groups of all mental disorder clusters [11]. BDP is characterized by significant risks for suicide and suicidality, deliberate self-harm, emotional dysregulation and impulsive behaviors [12], and is seen by mental health professionals (MHPs) as difficult to treat clinically [13].

Although patients with BPD are emerging as important and systematic users of mental health services, there is probably no other patient group in psychiatry that is more associated with stereotypes, prejudice and stigma [14]. Patients with BPD are characterized by MHPs as "non-compliant", "difficult", "conflicting", "manipulative"; the catalogue of such negative evaluations is endless [15-17]. They tend to be seen more as "bad", rather than "ill" characters [18,19], as they are considered to be more able to control their negative behaviors than other patient groups (e.g., patients with schizophrenia) [20-22]. As Bonnington and Rose [15] note, rather than being seen as ill, the behavior of patients with BPD is constructed as morally transgressive. Such stereotypes, which undoubtedly move in the direction of

responsibility and victim-blaming [17], negatively impact the quality of the mental healthcare services provided, perpetuate stigma, and create barriers to access and utilization of mental healthcare for patients with BPD. Patients with BPD constitute the psychiatric patient group that MHPs most dislike [23]. This dislike is revealed in MHPs' avoidant behaviors (e.g., refusal to treat a patient with BPD, discontinuation of psychotherapy sessions, and other).

The study of MHPs' attitudes towards diverse patient groups has been identified as a key area, mostly because of their impact on the therapeutic relationship, a key factor affecting treatment outcomes [24]. As far as the occupation subgroup is concerned, the sample used in the majority of studies on the subject comprises nurses, while understudied are psychiatrists', psychologists', and allied health professionals' attitudes. Meanwhile, most of the existing literature focuses on the cognitive aspects of attitudes, while the affective domain has not been adequately explored. As Thornicroft and Kassam [25] point out, "Social psychologists have focused upon thoughts (cognition) rather than feelings (affect)." Yet, rejection often involves not only negative thoughts: it also includes emotionally charged attitudes.

The few studies that have focused on MHPs' emotions suggest that medical/nursing staff providing treatment and care to patients with BPD often experience negative emotions [26,27]. The most common emotions identified are anxiety, anger, fear, and disgust [28]. Nevertheless, although anxiety, anger, and fear have been investigated, disgust remains underexplored.

Emotion researchers have long recognized disgust as one of the basic human emotions [29-31]. Until recently, disgust was largely overlooked [32]. Disgust has been described as the "forgotten emotion" [33], although it is a powerful one that plays a prominent role in people's lives across the world (both in health behaviors and in social interactions) [34]. According to theories of disgust, disgust is not unitary [35], but carries specific traits (propensity, sensitivity) and domains (i.e., pathogen, moral, sexual) that are fundamentally distinct [36]. Also, the ways people experience disgust (propensity), as well as their appraisal of the experienced disgust responses (sensitivity), are influenced by individual differences and demographic antecedents [37].

Evolutionary theorists argue that human beings have a behavioral immune system. This system is the collection of psychological mechanisms that enable individuals to detect pathogens in their environment and motivate behaviors that prevent these pathogens from entering the body [38-40]. Kurzban and Leary [41] maintain that this naturally selected internal program is related to disgust and avoidance of fellow humans who pose a threat of contagion or contamination (e.g., people living with HIV). However, research suggests a link between disgust and non-communicable diseases such as cancer [42] and obesity [43], as well as behaviors related to biomedical practices that are perceived as moral violations, like abortion [44]. It is also associated with prejudice [45]; nonconformist individuals and socially excluded groups are also labeled as disgusting. Prior research has shown the correlation between disgust and negative attitudes towards LGBT groups [46,47], migrants and foreigners [48,49], interracial couples [50], and homeless people [51]. Research data also strengthens the association between disgust and negative attitudes towards people with mental illness [52].

Cisler, Olatunji, and Lohr [53] note that disgust is a determinant of one's avoidance. Oaten, Stevenson, and Case [54] proposed that both types of social avoidance (avoidance of individuals displaying signs of infectious illnesses and stigmatization of other types of individuals, e.g., obese individuals) reflect a common underlying mechanism: infectious disease avoidance. Recently more attention has been afforded to the possibility that feelings of antipathy towards individuals with particular features are driven by psychological mechanisms for avoiding pathogens [41]. People often act as if physical contact with or even proximity to the stigmatized person could result in some form of contagion [55]. From this perspective, disgust is considered a defensive emotion, accompanied by a fear of contamination or an overwhelming wish to avoid what is deemed unacceptable or offensive [56,57].

From a social psychological perspective, avoidance is useful in dealing with the social consequence on one's social standing that may follow from socializing or at least being associated with a stigmatized person. The person socializing with someone with mental illness may be susceptible to the "contagion" of falling into the social group of the mentally ill [58]. Disidentification is a process that distinguishes "normal" individuals from the "abnormal", while preserving dividers between "ingroups" and "outgroups". Undesirability (to be with) and dissimilarity (to myself) are the best indicators of disidentification [59] and disgust may be a tool in dehumanization of out-group members [60-62].

To the best of our knowledge, there are no studies on disgust and negative attitudes towards patients with BPD. The purpose of the present study, therefore, was to investigate MHPs' attitudes towards patients with BPD. More specifically, we were interested to explore the effects of disgust on MHPs' attitudes towards patients with BPD. Our main hypothesis was that there is a positive correlation between negative attitudes and Disgust Propensity/Sensitivity. Additionally, MHPs' negative attitudes are related with sensitivity to pathogen, sexual, and moral disgust, as patients with BPD engage in self-harm (blood as pathogen), they have casual sexual relationships with a great number of different partners (promiscuity as sexual), and they often break the norms (nonconformity as moral). Finally, disgust should be associated with disidentification.

Material and Methods

Participants

The sample included 30 men and 106 women (N = 136). Participants comprised psychologists (51.5%), psychiatrists and psychiatry residents (14%), nurses (16%), social workers (10%) and allied health professionals (21%) (Occupations included mental health counseling, occupational therapy, health visiting).

The sample's characteristics are analytically presented in Table 1.

Table 1: Sample characteristics.

Gender		N (%)
	Men	30 (22.1)
	Women	106 (77.9)
Age (years)		
	<35	62 (45.6)
	36-45	48 (35.3)
	>45	26 (19.1)
Married / Living together		61 (44.9)
Profession		
	Psychiatrist	19 (14.0)
	Psychologist	70 (51.5)
	Nurse	16 (11.8)
	Social Worker	10 (7.4)
	Other	21 (15.4)
Educational level		
	Bachelor	45 (33.1)
	Postgraduate degree	91 (66.9)
Trained in any psychotherapeutic method		96 (70.6)
Number of patients with BPD you work with in the last 6 months		
	<5	95 (69.9)
	>=5	41 (30.1)
How conservative you think you are in a scale from 1 to 7 (7 being the highest), median (IQR)		2 (2 - 3)

Procedure

The study was reviewed and approved by the Panteion University of Social and Political Sciences research ethics committee. The questionnaires were administered via an online survey using Google Forms. The participants were notified that all their responses would be accessible only to the research group. In order to eliminate social desirability bias, the participants completed the survey anonymously. Consent was deemed as provided via survey participation. Participants included in the study had to fulfill the following criteria: a) be a mental health professional, b) have clinical experience, and c) have professional experience with patients with BPD.

Instruments

Participants completed two questionnaires measuring emotional (SDS) and cognitive (AtBPD) attitudes towards patients with BPD and two questionnaires measuring disgust (DPSS-R and TDDS). Social and demographic data were also collected.

Disgust Propensity and Sensitivity Scale–Revised (DPSS-R)

The Disgust Propensity and Sensitivity Scale–Revised (DPSS-R) [63] is a 12-item measure designed to assess two distinguishable factors contributing to disgust reactions, Disgust Propensity (the tendency to experience disgust: "I experience disgust"), and Disgust Sensitivity (perceived unpleasantness of feelings of disgust: "When I feel disgusted, I worry that I might pass out"). Each subscale of the DPSS-R is composed of eight items that are rated on a 5-point Likert-type scale ranging from 0 (never) to 4 (always).

The Three Domains of Disgust Scale (TDDS)

The Three Domains of Disgust Scale (TDDS) [64] is a 21-item self-report measure of disgust responding in three domains: moral disgust (e.g., deceiving a friend), sexual disgust (e.g., hearing two strangers having sex), and pathogen disgust (e.g., stepping on dog excrement). Items are scored on a 7-point Likert-type scale ranging from not at all disgusting (0) to extremely disgusting (6).

Semantic Differential Scale (SDS)

The semantic differential is a method designed to measure the connotative meaning of objects, events, concepts, individuals, or groups [65]. The connotative signification of a word has more of an emotional association and is more likely to trigger an emotional response than the denotative meaning, as it depends on the experiences of the subject. Connotative signification is important for studying the emotional sphere, as it embodies both the conscious and unconscious [66]. In the current study, participants were asked to evaluate the term "patient with BPD" (inductive word) against a series of bipolar scales of adjectives, used in the study of Servais and Saunders [59]. The scales were *effective/ineffective, understandable/incomprehensible, safe/dangerous, worthy/unworthy*, *desirable to be with/undesirable to be with,* and *similar to me/dissimilar to me*. In our study we added the bipolar scale *moral/immoral*, as disgust has been found to be linked with moral judgments [67]; meanwhile, "moralistic attitudes" tend to be associated with negative attitudes towards people with mental health issues [68]. Participants rated their perceptions of a patient with BPD on a 7-point Likert scale, with 1 indicating the most positive pole (e.g., safe), 4 indicating the neutral point (neither safe nor dangerous), and 7 indicating the most negative pole (e.g., dangerous).

Questionnaire of Attitudes towards Borderline Personality Disorder

This is a fifteen-item questionnaire [20] that concerns clinicians' attitudes towards patients with BPD. Summary scales are specified for *Empathy* (4 items) (e.g., "Patients with BPD intentionally manipulate others"), *Treatment Optimism* (5 items) (e.g., "The prognosis for BPD treatment is hopeless"), and *Caring Attitudes* (14 items) (e.g., "It is easy for me to stereotype patients with BPD"). The Caring Attitudes summary scale includes 14 of the 15 items and can be viewed as a measure of overall attitude towards caring for patients with BPD. The participants rated their level of agreement on a 7-point Likert scale from 1 (strongly agree) to 7 (strongly disagree).

Sociodemographic and professional data questionnaire

The sociodemographic and professional data gathered on MHPs are the following: gender, age, marital status, occupational subgroup, educational level, psychotherapy training, number of patients with BPD cared for in the last 6 months, and political ideology (conservatism vs liberalism).

Statistical analyses

Quantitative variables are expressed as mean (standard deviation) and median (interquantile range). Qualitative variables were expressed as absolute and relative frequencies. Spearman correlation coefficients were used to explore the association of

two continuous variables. Multiple linear regression analysis was used with SD as the dependent variable and the AtBPD scales. Correlation coefficients between 0.1 and 0.3 were considered low, moderate between 0.31 and 0.5 and high over 0.5. The regression equation included terms for demographics, work-related information, and DPSS or TDSS scales. DPSS and TDSS scales were entered separately in the analysis since they were significantly associated with each other. Thus, two hierarchical models were performed for each independent variable; the first included all sociodemographic variables and DPSS dimensions and the second included all sociodemographic variables and TDSS dimensions. Coefficient of determination for the models (R2) along with R2 change after the addition of DPSS and TDSS scales are shown from the results of regression analyses. Partial correlations coefficients, adjusted regression coefficients (β) with standard errors (SE) were also computed from the results of the linear regression analyses. SD scales were logarithmically transformed to be used in the regression, since their distribution lacked normality. All reported p values are two-tailed. Statistical significance was set at $p<0.05$ and analyses were conducted using the SPSS statistical software (version 22.0).

Results

Disgust and Emotional Attitudes

Table 2 shows descriptive statistics for the SD.

Correlation analysis of SD dimensions with DPSS and TDDS questionnaires (Table 3) showed a significant and positive correlation of *dangerous* with Disgust Propensity, Disgust Sensitivity and Pathogen subscales. Meanwhile, *ineffective* was positively correlated with the Sexual subscale.

Table 2: Descriptive statistics for SD.

	Minimum	Maximum	Mean (SD)	Median (IQR)
SD				
ineffective	1	7	4.2 (1.5)	4 (3 — 5)
incomprehensible	1	7	3.9 (1.6)	4 (3 — 5)
dangerous	1	7	4.1 (1.4)	4 (3 — 5)
unworthy	1	7	2.6 (1.6)	2 (1 — 4)
immoral	1	7	3.8 (1.5)	4 (3 — 5)
undesirable to be with	1	7	3.5 (1.7)	4 (2 — 5)
dissimilar to me	1	7	4.5 (1.8)	5 (4 — 6)

Table 3: Correlation coefficients of SD dimensions with DPSS and TDDS questionnaires.

	DPSS		TDDS		
	Disgust Propensity	Disgust Sensitivity	Pathogen	Sexual	Moral
ineffective	-.02	.01	.05	.18*	.04
incomprehensible	.15	.07	.11	-.02	-.15
dangerous	.23**	.18*	.24**	.05	-.08
unworthy	.09	.14	.08	.09	-.03
immoral	.07	.13	.14	.03	-.02
undesirable to be with	.15	.03	.12	-.06	-.10
dissimilar to me	.06	.06	.12	.11	.12

*p<.05; **p<.01; ***p<.001

When multiple linear regression analyses was carried out with the SD dimensions as dependent variables (Tables 4 and 5), we found that females had greater score on the *ineffective* dimension. In addition, allied health care professionals had greater scores on the *unworthy* and *undesirable to be with* dimensions when compared to social workers. Those married or living with a partner had greater scores on the *unworthy* dimension. Higher educational level was associated with lower scores on *unworthy*.

Subjects trained in any psychotherapeutic method had lower scores on the *incomprehensible* and *dangerous* dimensions, while those who worked with a larger number of patients with BPD in the last 6 months were associated with lower scores on the *incomprehensible*, *undesirable to be with*, and *dissimilar to me* dimensions. More participants that are conservative had greater scores on the *dangerous*, *unworthy*, *immoral, and undesirable to be with* dimensions.

Higher scores on the Sexual Disgust Domain were associated with higher scores on the *ineffective* dimension and higher scores on the Disgust Propensity and the Pathogen Disgust Domain were associated with higher scores on the *dangerous* dimension in multiple analysis. Furthermore, after adjusting for all studied variables, we found that greater scores on Disgust Propensity were positively associated with greater scores on the *undesirable to be with* dimension.

Disgust and Caring Attitudes

Table 6 shows descriptive statistics and Cronbach's a for the DPSS, TDDS, and AtBPD subscales.

Correlation analysis of DPSS and TDDS dimensions with AtBPD subscales (Table 7) showed a significant and negative correlation of Disgust Propensity with *Treatment Optimism* and *Caring Attitudes*. Also, Disgust Sensitivity was negatively correlated with *Treatment Optimism* and *Caring Attitudes*. TDDS subscales were not significantly correlated with the AtBPD questionnaire.

When multiple linear regression analyses was conducted with the AtBPD subscales as dependent variables (Table 8), we found that participants trained in any psychotherapeutic method had significantly greater scores on the *Caring Attitudes* dimension. Additionally, more participants that are conservative had lower scores on both the *Empathy* and *Caring Attitudes* subscales. Furthermore, increased Disgust Propensity and Disgust Sensitivity were associated with lower scores on the *Treatment Optimism* and *Caring Attitudes* dimensions

Discussion

Our study attempted to explore the impact of disgust propensity and sensitivity and the effects of sociodemographic characteristics on MHPs' attitudes towards patients with BPD.

Disgust propensity/sensitivity and MHPs' attitudes towards patients with BPD

The findings showed a positive correlation between disgust and negative attitudes towards patients with BPD. More specifically,

Table 4: Results from multiple linear regression analyses with dependent variables the SD dimensions.

		ineffective			incomprehensible			dangerous		
		β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P
Gender										
	Men (reference)									
	Women	0.93 (0.36)	0.23	.011	0.23 (0.36)	0.06	.529	0.32 (0.30)	0.10	.288
Age (years)										
	>45 (reference)									
	<35	0.08 (0.54)	0.01	.886	-0.47 (0.54)	-0.08	.389	0.64 (0.46)	0.13	.167
	36-45	-0.19 (0.41)	-0.04	.648	0.08 (0.42)	0.02	.851	0.47 (0.35)	0.12	.183
Married / Living together										
	No (reference)									
	Yes	0.25 (0.31)	0.07	.415	-0.14 (0.31)	-0.04	.655	-0.25 (0.26)	-0.09	.352
Profession										
	Social worker (reference)									
	Psychiatrist	0.25 (0.66)	0.03	.708	0.30 (0.67)	0.04	.656	0.33 (0.56)	0.05	.555
	Psychologist	-0.20 (0.55)	-0.03	.717	-0.04 (0.55)	-0.01	.940	-0.62 (0.47)	-0.12	.191
	Nurse	0.09 (0.69)	0.01	.899	0.35 (0.69)	0.05	.611	0.06 (0.58)	0.01	.922
	Other	0.36 (0.62)	0.05	.563	0.51 (0.63)	0.07	.418	-0.18 (0.53)	-0.03	.733
Educational level										
	Bachelor (reference)									
	Postgraduate degree	-0.01 (0.32)	0.00	.969	0.2 (0.32)	0.06	.534	0.03 (0.27)	0.01	.917
Trained in any psychotherapeutic method										
	No (reference)									
	Yes	-0.29 (0.33)	-0.08	.381	-0.74 (0.33)	-0.20	.026	-0.64 (0.28)	-0.21	.024
Number of patients with BPD you work with in the last 6 months										
	<5 (reference)									
	>=5	-0.49 (0.31)	-0.14	.117	-0.63 (0.31)	-0.18	.045	-0.39 (0.26)	-0.13	.140
How conservative you think you are in a scale from 1 to 7 (7 being the highest)		0.10 (0.12)	0.08	.403	0.14 (0.12)	0.11	.245	0.28 (0.11)	0.23	.010
R^2		0.008			0.059			0.125		
Disgust Propensity		-0.01 (0.04)	-0.02	.815	0.05 (0.04)	0.11	.228	0.06 (0.03)	0.07	.009
Disgust Sensitivity		-0.01 (0.04)	-0.01	.870	-0.01 (0.04)	-0.02	.802	0.01 (0.04)	0.02	.857
R^2 change		0.001			0.012			0.008		
Pathogen		0.00 (0.02)	-0.01	.887	0.03 (0.02)	0.13	.158	0.06 (0.02)	0.28	.002
Sexual		0.06 (0.03)	0.21	.011	-0.03 (0.03)	-0.09	.344	0.03 (0.02)	-0.12	.178
Moral		0.00 (0.02)	0.00	.964	-0.01 (0.02)	-0.06	.517	0.01 (0.01)	0.04	.651
R^2 change		0.009			0.027			0.062		

+regression coefficient (Standard Error)

disgust propensity and disgust sensitivity are positively associated with lower scores on treatment optimism and caring attitudes. Also, disgust propensity is linked with greater scores on undesirability, which is a significant indicator of disidentification.

In the current study, dangerousness is associated with disgust propensity, disgust sensitivity, and the pathogen disgust domain. The literature suggests that disgust sensitivity is associated with heightened risk perception [69]. Moreover, several studies have found a specific relationship between perceiving as dangerous persons with serious mental illness and fearing them [70]. Also, in previous research [52], scores on the pathogen disgust subscale of the TDDS were positively correlated with a stigmatization of mental health conditions. The findings are consistent with Oaten, Stevenson, and Case's [54] hypothesis that the "over-inclusive" nature of infectious disease avoidance adds to the stigmatization of individuals with mental disorders. Attributing a person's behavior as dangerous leads to fear, and fear of a person's dangerousness leads in turn to avoidant behaviors. Literature suggests that BPD appears to be associated with a greater likelihood of disruptive behaviors in the medical setting, but not physical threats [71]. So what leads a patient with BPD to be perceived as dangerous? Patients with BPD could be perceived by MHPs as "dangerous" for emotional contagion through transference. In the study of Rizq [72], primary care counselors referred significant emotional risks for therapists working with patients with BPD. Specifically, they revealed that they experience "an aggressive attempt by borderline clients to invade their internal psychological space" (p. 41), characterizing it as a process of "getting under their skin". Therefore, MHPs need to take a social distance from patients with

Table 5: Results from multiple linear regression analyses with dependent variables the SD dimensions (continued).

		unworthy			Immoral			undesirable to be with			dissimilar to me		
		β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P
Gender													
	Men (reference)												
	Women	0.50 (0.34)	0.13	.144	0.00 (0.33)	0.00	.997	0.31 (0.35)	0.08	.382	0.14 (0.42)	0.03	.747
Age (years)													
	>45 (reference)												
	<35	0.25 (0.51)	0.05	.620	0.67 (0.50)	0.12	.182	-0.08 (0.53)	-0.01	.883	0.36 (0.64)	0.05	.573
	36-45	0.35 (0.39)	0.08	.365	0.68 (0.38)	0.16	.076	0.37 (0.40)	0.08	.360	0.47 (0.49)	0.09	.342
Married / Living together													
	No (reference)												
	Yes	0.60 (0.29)	0.18	.043	0.28 (0.29)	0.09	.332	0.11 (0.30)	0.03	.712	0.41 (0.37)	0.10	.268
Profession													
	Social worker (reference)												
	Psychiatrist	0.64 (0.63)	0.09	.307	0.68 (0.61)	0.10	.269	0.97 (0.65)	0.14	.137	0.40 (0.78)	0.05	.609
	Psychologist	0.28 (0.52)	0.05	.590	0.66 (0.51)	0.12	.196	0.32 (0.54)	0.06	.548	-0.25 (0.65)	-0.03	.703
	Nurse	0.94 (0.64)	0.13	.148	0.93 (0.63)	0.13	.141	0.22 (0.67)	0.03	.745	-0.68 (0.81)	-0.08	.403
	Other	1.30 (0.59)	0.20	.029	0.95 (0.57)	0.15	.099	1.50 (0.61)	0.22	.015	0.50 (0.74)	0.06	.496
Educational level													
	Bachelor (reference)												
	Postgraduate degree	-0.84 (0.30)	-0.25	.006	-0.32 (0.29)	-0.10	.265	0.12 (0.31)	0.04	.688	-0.33 (0.37)	-0.08	.371
Trained in any psychotherapeutic method													
	No (reference)	.											
	Yes	-0.18 (0.31)	-0.05	.551	0.05 (0.3)	0.01	.881	-0.55 (0.32)	-0.16	.085	-0.58 (0.39)	-0.14	.138
Number of patients with BPD you work with in the last 6 months													
	<5 (reference)												
	>=5	0.04 (0.29)	0.01	.879	-0.14 (0.28)	-0.05	.623	-0.59 (0.30)	-0.18	.050	-0.78 (0.37)	-0.19	.036
How conservative you think you are in a scale from 1 to 7 (7 being the highest)		0.40 (0.12)	0.30	.001	0.39 (0.11)	0.30	.001	0.38 (0.12)	0.28	.002	0.13 (0.15)	0.08	.392
R^2		0.167			0.150			0.049			0.032		
Disgust Propensity		0.06 (0.04)	0.12	.173	0.01 (0.04)	0.03	.754	0.12 (0.04)	0.25	.005	0.04 (0.05)	0.06	.481
Disgust Sensitivity		0.02 (0.04)	0.06	.539	0.04 (0.04)	0.09	.302	-0.06 (0.04)	-0.13	.152	0.01 (0.05)	0.01	.873
R^2 change		0.029			0.048			0.016			0.007		
Pathogen		0.02 (0.02)	0.10	.255	0.05 (0.03)	0.08	.330	0.05 (0.03)	0.15	.127	0.05 (0.03)	0.10	.240
Sexual		-0.02 (0.03)	-0.08	.358	-0.02 (0.03)	-0.06	.488	-0.06 (0.04)	-0.07	.313	-0.01 (0.03)	-0.03	.733
Moral		-0.01 (0.02)	-0.07	.451	0.00 (0.01)	0.01	.886	-0.01 (0.02)	-0.05	.558	0.02 (0.02)	0.08	.397
R^2 change		0.021			0.073			0.034			0.036		

+regression coefficient (Standard Error)

Table 6: Descriptive statistics and Cronbach's a for the DPSS, TDDS and AtBPD subscales.

	Minimum	Maximum	Mean (SD)	Cronbach's a
DPSS				
Disgust Propensity	7	30	15.4 (3.8)	0.80
Disgust Sensitivity	6	30	10.6 (4.1)	0.78
TDDS				
Pathogen	7	41	24.5 (6.9)	0.79
Sexual	7	36	18.2 (6.6)	0.74
Moral	7	42	24.5 (10)	0.91
AtBPD				
Empathy	1	7	4.4 (1.3)	0.75
Treatment Optimism	2	7	4.5 (0.8)	0.78
Caring Attitudes	3	7	4.7 (0.7)	0.73

Table 7: Correlation coefficients for DPSS, TDDS and AtBPD subscales.

	Empathy	Treatment Optimism	Caring Attitudes
Disgust Propensity	-.14	-.19*	-.18*
Disgust Sensitivity	-.14	-.23**	-.22*
Pathogen	-.14	-.01	-.09
Sexual	-.05	-.08	-.06
Moral	-.04	.03	-.02

*p<.05; **p<.01; ***p<.001

Table 8: Results from multiple linear regression analyses with dependent variables the AtBPD subscales and independent the demographics and SD dimensions**.**

		Empathy			Treatment Optimism			Caring Attitudes		
		β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P	β (SE)+	Partial correlation	P
Gender										
	Men (reference)									
	Women	0.03 (0.29)	0.01	.925	-0.10 (0.20)	-0.04	.626	-0.01 (0.16)	0.00	.967
Age (years)										
	>45 (reference)									
	<35	0.25 (0.43)	0.05	.565	-0.05 (0.30)	-0.01	.879	0.08 (0.25)	0.03	.755
	36-45	0.15 (0.33)	0.04	.655	-0.11 (0.23)	-0.04	.640	-0.04 (0.19)	-0.02	.852
Married / Living together										
	No (reference)									
	Yes	0.02 (0.25)	0.01	.951	0.01 (0.17)	0.01	.933	0.05 (0.14)	0.03	.743
Profession										
	Social worker (reference)									
	Psychiatrist	-0.20 (0.53)	-0.03	.707	0.00 (0.36)	0.00	.998	-0.02 (0.30)	-0.01	.938
	Psychologist	0.12 (0.44)	0.03	.781	0.11 (0.3)	0.03	.721	-0.01 (0.25)	0.00	.980
	Nurse	0.05 (0.55)	0.01	.927	0.06 (0.38)	0.01	.874	-0.08 (0.31)	-0.02	.808
	Other	-0.23 (0.50)	-0.04	.641	-0.33 (0.34)	-0.09	.342	-0.41 (0.28)	-0.13	.148
Educational level										
	Bachelor (reference)									
	Postgraduate degree	0.05 (0.25)	0.02	.845	0.08 (0.17)	0.04	.653	0.06 (0.14)	0.04	.655
Trained in any psychotherapeutic method										
	No (reference)									
	Yes	0.39 (0.26)	0.13	.141	0.19 (0.18)	0.10	.297	0.30 (0.15)	0.21	.013
Number of patients with BPD you work with in the last 6 months										
	<5 (reference)									
	>=5	0.16 (0.25)	0.06	.509	0.00 (0.17)	0.00	.997	-0.08 (0.14)	-0.05	.581
How conservative you think you are in a scale from 1 to 7 (7 being the highest)		-0.30 (0.10)	-0.27	.003	-0.03 (0.07)	-0.04	.686	-0.12 (0.06)	-0.19	.035
R^2		0.031			0.001			0.033		
Disgust Propensity		-0.02 (0.04)	-0.05	.549	-0.04 (0.02)	-0.25	.009	-0.05 (0.02)	-0.24	.005
Disgust Sensitivity		-0.04 (0.03)	-0.10	.283	-0.05 (0.02)	-0.26	.004	-0.04 (0.02)	-0.18	.045
R^2 change		0.024			0.048			0.050		
Pathogen		-0.04 (0.02)	-0.17	.056	0.01 (0.01)	0.06	.516	-0.01 (0.01)	-0.09	.325
Sexual		0.02 (0.02)	0.09	.337	-0.02 (0.02)	-0.12	.207	0.00 (0.01)	0.02	.837
Moral		0.00 (0.01)	-0.02	.796	0.01 (0.01)	0.09	.334	0.00 (0.01)	0.01	.939
R^2 change		0.027			0.014			0.008		

+regression coefficient (Standard Error)

BPD by adopting avoidant behaviors. Additionally, people often behave as if physical contact or even physical proximity to the stigmatized person could lead to a type of infection [55]. When someone interacts socially with someone diagnosed with a mental illness, he/she may be vulnerable to "infection" and consequently grouped with the mentally ill [58]. But is the relation of pathogen disgust to BPD purely metaphorical? Are we to apply the "smoke detector principle" [73]? Or is disgust elicited because many of the behaviors (deliberate self-harm, sexual promiscuity) related to this diagnosis involve bodily fluids (blood and semen/vaginal fluids respectively) and avoidant behavior is a Behaviour Immune System reaction?

It is intuitively apparent that blood, injury, mutilation, and contaminating agents might be related to disease-avoidance [74]. In this sense, blood, injury, and mutilation regularly emerge as categories of primary disgust elicitors. Self-harm scars, the output of deliberate self-harm (a common pain relief practice among patients with BPD), can render illness "visible" in social and clinical interactions [15], and people tend to avoid physically stigmatized individuals, such as those with prominent birthmarks or physical disabilities [38,54]. In the TDDS the pathogen disgust domain included statements such as: *"Accidentally touching a person's bloody cut"* and *"Sitting next to someone who has red sores on their arm"*, which refer directly to blood and wounds. In addition, literature [13] suggests that suicide attempts are an important factor for explaining MHPs' negative emotions towards this patient group.

On the other hand, the correlation between ineffectiveness and the sexual disgust domain could refer to sexual impulsivity and inability of impulse control. According to the existing literature, patients with BPD are more likely to exhibit greater sexual preoccupation [75], engage in casual sexual relationships [76, 77], report a greater number of different sexual partners and a greater degree of promiscuity [78, 79, 80], while engaging in same-sex sexual experiences [75, 81]. In addition, patients with BPD appear to be characterized by a greater number of high-risk sexual behaviors [82], and the contraction of more sexually transmitted diseases. Concerning the patient-therapist relationship, Gutheil [83] points out that patients with BPD are particularly likely to evoke boundary violations, including sexual acting out. In a review on the sexual behavior of patients with BPD, Sansone and Sansone [84] note that "clinicians in these settings need to maintain a high index of suspicion about the possibility of multiple sexual partners, sexual traumatization, and sexually transmitted diseases in these patients as well as the need to address contraception and prophylaxis against sexually transmitted diseases" (p. 17).

Though patients with BPD do usually adopt a nonconformist—or even anti-social—behavior towards the social world, which is seen as dangerous and hostile, and while there is evidence that disgust plays an important role in morality (much like antisocial behavior as a form of social parasitism is associated with disgust), there is no correlation between the attitudes towards patients with BPD and the moral disgust domain in this study.

Sociodemographic variables and MHPs' attitudes towards patients with BPD

The findings suggest that in this cohort of participants, patients with BPD are highly viewed by MHPs as *ineffective*, *incomprehensible*, *dangerous*, *unworthy*, *immoral*, *undesirable to be with*, and *dissimilar to* the MHPs themselves. Attitudinal differences based on gender, marital status, occupational subgroup, psychotherapy training, exposure to patients with BPD, educational level, and political ideology, were all identified.

In a Swedish study by Ewalds-Kvist, Högberg, and Lützén [85], it was found that females were more fearful and avoidant than males in relation to persons with mental illness. However, in our study female participants perceive patients with BPD as more ineffective than dangerous. According to the Oxford dictionary, "ineffective" means "not achieving what you want to achieve; not having any effect", and its synonyms include "useless", "purposeless", "hopeless", etc. Therefore, ineffectiveness is related to frustration. This is consistent with other findings showing that when MHPs work with this patient group, they experience frustration [86,87,22,72] and a sense of failure [22,72], related to a poor prognosis [22,19,88] and other factors such as patients with BPD' dropping out of or noncompliance with the treatment [27]. Based on these findings, "ineffective" could mean "untreatable" [14] at a representational level.

An interesting finding is the correlation between the marital status of the participant and the patient's devaluation. Taylor and Dear [89] revealed that married people, compared with those widowed, single, separated or divorced, expressed less sympathetic attitudes towards persons with mental illness. In the same vein, in the study conducted by Ewalds-Kvist, Högberg, and Lützén [85], married participants were the least empathetic (compared to singles, couples living in separate locations and widowed) towards people with mental illness.

As far as the occupational subgroup is concerned, relative to social workers who presented high scores on positive attitudes towards patients with BPD, allied health professionals proceeded to devaluations and adopted avoidant attitudes towards patients with BPD. Positive attitudes, especially regarding treatment optimism (beliefs about the effectiveness of pharmacotherapy and psychotherapy), and empathy of social workers were identified in the studies of Bodner et al. [21] and Black et al. [20].

Although existing literature suggests that general psychiatrists can treat most patients with BPD successfully, even without specialized training [90-93], our findings suggest that a lack of psychotherapy training creates a link between BPD, incomprehensibility and dangerousness. On the contrary, training in a psychotherapeutic method is associated with positive caring attitudes.

On the other hand, MHPs with inadequate clinical experience with BPD perceive this patient group as incomprehensible and develop disidentification (*undesirable to be with* and *dissimilar to* the MHPs themselves). This finding is in agreement with Black

et al. [20] who found that MHPs who worked with more patients with BPD were more likely to express positive attitudes towards them. Similarly, Castell [94] reported that MHPs who treated more patients with BPD showed the lowest scores in negative emotions.

Special training and clinical experience with patients with BPD aside, a high level of education (postgraduate studies) is associated with less devaluation. Participants who hold a master's degree or a PhD perceive a patient with BPD less as unworthy ("undeserving of care"). This concurs with findings reported in the existing literature [14].

Conservatism seems to affect four out of the seven scales in the Semantic Differential. Namely, participants who self-identified as "conservatives" perceive patients with BPD as *dangerous*, make negative moral evaluations (*immoral* and *unworthy*) and adopt avoidant attitudes (*undesirable to be with*). Meanwhile, conservatism is associated with low empathy and negative caring attitudes. This finding is in agreement with the Löve, Bertilsson, Martinsson, Wängnerud, and Hensing [95] presenting political ideology effects as indicating more stigmatizing attitudes towards depression in Sweden.

According to the existing literature, social distance on mental illness increases among the elderly, and less empathetic attitudes are performed towards people with mental illness [96,89]. In this analysis, nevertheless, participants' age was not significantly related to negative attitudes towards patients with BPD.

Correspondingly, work experience was identified as a relevant additional factor in determining more positive attitudes in other studies [97-99], a finding that is not verified in the current study.

Limitations

The study used an opportunity sample, and not a representative sample. The methodology was not designed to estimate attitudes of the total Greek MHPs, but only those who participated in the survey. There is a chance that the participants may hold different attitudes when compared to the MHPs who did not participate. Although the size of our sample is approximately similar to that of previous surveys [21,86,100,101] and in certain cases larger [13,102-107], an enlarged sample is needed to detect more eventual differences based on the sociodemographic data and between the occupational subgroups. Furthermore, there is no comparison patient group, which might allow us to discover similar negative attitudes towards other clinical populations. Our study design does not allow us to determine the causative mechanism through which disgust may intensify negative attitudes; it only identifies correlations. A novel study design would be needed to reveal causations and mediating factors. Furthermore, the quantitative nature of the study limits the depth of examination of the issue in question. A mixed methods research design would offer more opportunities for revealing findings. Likewise, the implementation of other innovative methods, such as the Culpepper Disgust Image Set, C-DIS [108], is recommended to assess disgust.

Future research

Future studies must focus on MHPs' attitudes towards concrete behavioral patterns (e.g., deliberate self-harm, suicide attempts, etc.) characterizing these patients and seen by MHPs as "provocative" or "manipulative". It is also crucial to explore whether disgust may be associated not with a fear of metaphoric dangerousness (i.e., emotional contagion), but with a fear based on pathogens (i.e., blood). Open wounds and bleeding could trigger disgust as an evolutionary mechanism of self-preservation. Correspondingly, it is necessary to explore whether patients with BPD are perceived by MHPs as potential vectors of sexually transmitted diseases, but also whether patients' descriptions during psychotherapy sessions do indeed contain detailed sexual information.

The literature suggests that self-disgust is a mediator between depression and nonsuicidal self-injury [109]. Transference is like an emotional contagion. It occurs when the patient places unwanted (and often negative) feelings onto the therapist. On the other hand, countertransference, which occurs when the therapist projects his/her feelings to the patient, as a reaction to transference, may negatively influence the therapeutic process. Future research could investigate the relationship between patient's self-disgust and therapist's disgust through transference and countertransference.

Finally, Rozin, Haidt, and McCauley [110] maintain that "disgust can be understood as a defense against a universal fear of death" (p. 643). A survey by Bodner et al. [21] demonstrated that psychiatrists' fear of death is associated with stronger negative attitudes towards patients with BPD. We suggest exploring the association between patient's suicide attempts/self-harm and MHPs' fear of death and disgust, resulting in avoidant behaviors.

Implications for practice

Undoubtedly, negative attitudes have a negative impact on the therapeutic relationship, which in turn negatively affects treatment outcomes. It is crucial for MHPs to deal with these attitudes [20]. First, they must gain an awareness of their cognitions and emotions; second, they must be able to manage their emotions. Given that this patient group present with difficulties related to emotional responding (high sensitivity to emotional stimuli), it is essential that the MHPs have the capacity to recognize, regulate and control the emotions they are experiencing during the therapeutic encounter and thus ensuring the interaction being "safe" for the patients with BPD.

We recommend implementing workshops for improving staff attitudes towards patients with BPD. These training programs ought to cover the topics of stereotyping and prejudice and should train MHPs in specific skills of emotion regulation. Meanwhile, mindfulness training has shown promising results: mindfulness facilitates greater tolerance of unpleasant emotions and may thus be a useful tool for therapists. Research suggests that mindfulness training may promote more integrated decision-making skills in contexts where disgust is a factor [111] and reduce stress and burnout in MHPs [112,113].

Additionally, we recommend specialist supervision focused on the emotional aspects of therapeutic work, and support for MHPs to be able to better manage unconscious process issues within the therapeutic relationship [72].

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