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Non-Contamination and Non-symmetry OCD Obsessions are Commonly Not Recognized by Clinical, Counseling and School Psychology Doctoral Students

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Abstract

Background: Mental and medical health professionals misidentify obsessive-compulsive disorder (OCD) at alarmingly high rates. This study assessed psychology doctoral students' awareness of OCD.

Method: Doctoral students from APA-accredited clinical, counseling, or school psychology programs in the Greater New York Area participated. The study consisted of three assessment points; diagnostic impressions for five distinct vignettes were obtained at each of assessment. An educational OCD video intervention was presented to both study conditions.

Results: Eighty-two students, across seven doctoral programs participated. Participants reported less awareness (not at all aware or not very aware) of the non-contamination and non-symmetry obsessions (17.1%-36.0%) compared to contamination or symmetry obsessions (1.3%-3.9%). Participants were also more likely to misdiagnose the non-contamination and non-symmetry as compared to the contamination and symmetry OCD cases (17.7-33.3% vs. 0.0-6.3%, respectively). After exposure to the video intervention, the OCD misidentification rate dropped from 18.5% to 5.4%.

Conclusion: A widespread lack of awareness and misidentification of OCD symptoms beyond contamination and symmetry obsessions exists. The video intervention was effective in reducing OCD misidentification rates. Graduate students in the mental health field could benefit from targeted training to accurately diagnose OCD.

Keywords: Obsessive-compulsive disorder; Misdiagnosis; Doctoral student; Training; OCD awareness

Introduction

Obsessive-compulsive disorder is a heterogeneous disorder [1-4]. While significant variability exists between the overarching content themes of obsessions (e.g., obsessions regarding aggression, contamination, religion), great variability also exists within the specific subcategories. For example, some ways in which aggressive obsessions manifest include fear of: 1) harming self, 2) harming others intentionally, 3) harming others accidently, 4) violent images, 5) blurting insults, 6) acting on unwanted impulses, 7) stealing things [5]. The wide range of OCD symptom presentations compounded by the idiosyncratic nature of each condition may complicate proper detection of the disorder.

Furthermore, the literature suggests that professionals may not be aware of the diversity of OCD symptom presentations [6,7]. Our prior work supports this concept; over one-third of mental health professionals (38.9%) from a range of professional backgrounds including doctorate and masters level clinicians and social workers and half of primary care physicians (50.5%) misidentified OCD case presentations [8,9]. Additionally, OCD is typically portrayed in a restricted scope (i.e., focused on contamination and symmetry) within educational training materials [10-12] and the popular media [13], which may lead to a poor understanding regarding many common manifestations of OCD.

The long delay between the onset of symptoms and effective treatment [14,15], the significant impairment associated with the disorder [16], and mental and medical health professionals' lack of awareness regarding the broad symptom presentations of OCD [8,9] highlights the need for greater awareness of OCD symptomatology. An opportune time to intervene and provide more comprehensive OCD training would be in educational programs. Currently no scientific literature focused on OCD diagnostic training or awareness in higher-level education exists. Research has found students prefer educational videos to the standard lecture format [17]. Furthermore, video training presentations have been efficacious for addressing a range of training areas [18-21]. Therefore, the purpose of this study was to assess doctoral students', who are studying to become psychologists, awareness of OCD symptomatology and to further test the efficacy of an educational OCD video-intervention created to improve diagnostic accuracy.

Based on the tendency for training materials and popular media to focus on contamination and symmetry symptoms of OCD [10-13], we hypothesized that prior to a video intervention participants would be less aware of, and more like to misdiagnose, the non-contamination and non-symmetry OCD symptom presentations compared to the contamination and symmetry symptoms. We also hypothesized that rates of OCD misidentification would decrease after exposure to the OCD video intervention.

Methods

Vignette development and validation process

Thirty-two mental health professionals employed at major academic and psychiatric centers participated in the vignette validation process.

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Of the sample, 40.6% were female; the average age of the sample was 39.7 (*SD*=11.2). The highest degree obtained by the participants was as follows: PhD (53.1%), MSW/LICSW (18.7%), MD (12.5%), Psy D (9.4%), and MA (6.3%). Five vignettes, along with the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision [22] criteria for each vignette's intended condition were randomly assigned to each participant. Participants assessed whether the vignette met diagnostic criteria for its intended condition. The inter-rater reliability for each vignette meeting its intended condition was very strong (93.8%). The findings from the validation process suggest that the vignettes accurately depict the respective conditions based on the *DSM-IV-TR* criteria.

The vignettes consisted of the following categories: (1) eight OCD vignettes (e.g., obsessions regarding pedophilia), (2) eight vignettes with symptoms that mirror core components of specific OCD presentations (Specific OCD Differentials category; e.g. pedophilia vignette), (3) six vignettes that share broad-based similarities with OCD, such as obsessive tendencies or pervasiveness (Broad OCD Differentials category; e.g., body dysmorphic disorder), (4) three specific phobia vignettes (Specific Phobia category; e.g., blood-injection-injury) to assess for sensitivity and specificity, and (5) three control vignettes (Control category; e.g., conditions that may be comorbid with OCD but do not share similar symptomatology with OCD, such as Primary insomnia). See Table 1 for a list of the study vignettes according to the respective categories.

Study: OCD misidentification rates pre and post a video-intervention

Participants: Clinical, counseling, and school psychology graduate students from seven APA accredited doctoral programs in the Greater New York Area participated in the study. Eighty-two students completed the first and second assessments, and 78 (95.1%) completed all three assessments. Most (82.7%) were female and the mean age was 27.0 (*SD*=3.8). The vast majority of participants were Caucasian (84.0%). See Table 2 for the study demographics and Figure 1 for the study sample flow chart.

OCD	Specific OCD differentials	Broad OCD differentials	Specific phobia	Control
Obsessions regarding			**subtypes**	
Aggression	Anti-social personality disorder	Asperger's	Animal	Alcohol abuse
Contamination	Sub-clinical contamination*	Body dysmorphic disorder	Natural environment	Bulimia
Fear of saying things	Tourette's	Hypochondriasis	Blood-injection-injury	Primary Insomnia
Homosexuality	Confusion regarding sexuality*	Impulse control disorder, NOS		
Pedophilia	Pedophilia	Schizophrenia		
Religion	Strong religious values*	Trichotillomania		
Somatic concerns	Social phobia/ Social anxiety disorder			
Symmetry	Obsessive-compulsive personality disorder			
Note: *These are not DSM-IV-TR conditions and are not to be interpreted as mental health disorders.				

Table 1: Vignettes categories and vignettes.

Characteristic	Percentage
Age [years(SD)]	27.0 (3.8)
Gender (% female)	82.7
Hispanic	4.9
Race	
Caucasian	84.0
Asian	9.9
African American	3.7
Other	2.5
Year in current program	
2nd	39.5
1st	34.6
4th	9.9
5th	8.6
3rd	7.4
Highest degree	
BA/BS	56.7
MA/MS	35.8
MsEd	3.6
Other	
Degree to be obtained	
Clinical Psychology with Health Emphasis PhD	34.1
School-Clinical PsyD	24.4
Clinical Psychology PsyD	17.1
Clinical Psychology PhD	14.6
School-Clinical PhD	9.8
Intervention Condition	41.5
Main theoretical orientation	
Cognitive-Behavioral	40.5
Eclectic/Integrative	27.8
Psychodynamic	16.5
Undecided	9.8

Table 2: Study demographics.

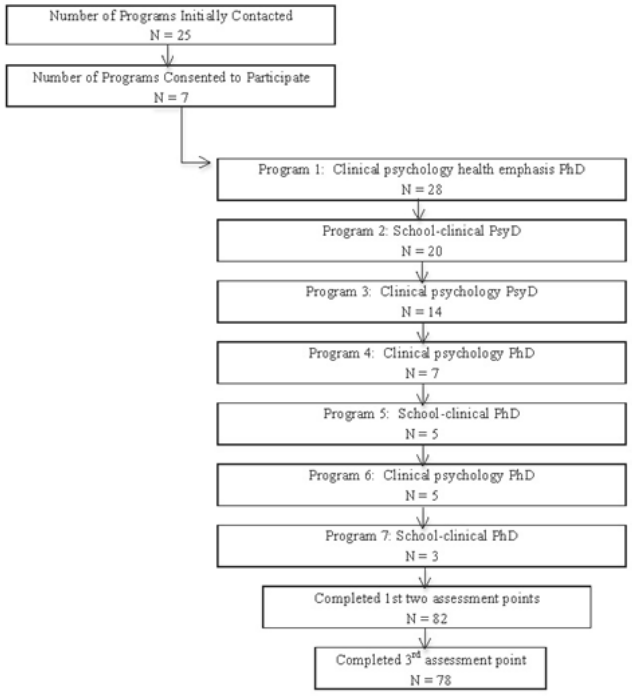

Figure 1: Study flow chart.

Procedure

Program directors of APA accredited clinical, counseling, and school psychology doctoral program in the Greater New York area were contacted (*N*=21) to obtain study consent; all study participants also provided written consent prior to their participation. The study was approved by the Albert Einstein College of Medicine's Institutional Review Board. To minimize the likelihood of treatment diffusion between the two study conditions, each graduate school was allocated to either the intervention or the control (time-lagged intervention) condition. Randomizing each site to a condition prior to contacting the program director was not possible due to our inability to predict which program directors would approve study participation.

The study was conducted over two distinct time periods (three assessments per person); the average length of time between the two periods was approximately two and a half months (76.6 days; range=48-106 days). At each assessment point five randomized vignettes (one per each category outlined above) were randomly assigned to each participant. If a vignette was randomized to the same participant at any of the assessment points, a different vignette was randomly selected to ensure that individuals were not given the same vignette twice. In addition, participants who reviewed a certain OCD vignette did not receive that vignette's specific OCD differential vignette at any of the assessment points. For each vignette, participants provided their diagnostic impression by selecting from a list of 47 psychiatric and non-clinical diagnoses ("Other" was an option). If more than one condition was selected, participants ranked the order of their responses. A correct response was provided as long as OCD was selected as one of the possible conditions, regardless of where OCD was listed on their ranking.

Intervention condition: At Assessment 1, the participants in the intervention condition provided diagnostic impressions for five distinct vignettes. Participants subsequently viewed the OCD video-intervention. Directly following the video (Assessment 2) participants provided their diagnostic impressions for five different vignettes. Approximately 2.5 months later (Assessment 3), participants gave their diagnostic impressions for another round of five distinct vignettes.

Control condition (Time-lagged intervention): At Assessment 1, participants in the control condition provided diagnostic impressions for five randomized vignettes. Approximately 2.5 months later (Assessment 2), the participants completed another five vignettes; this assessment was done to rule out learning by history or maturation. Participants then watched the video-intervention and subsequently provided their diagnostic impressions on a final round of five vignettes (Assessment 3).

All participants completed a video evaluation form directly after seeing the video. Additionally, at the 3rd assessment session, all participants completed a follow-up assessment questionnaire.

Measures

Vignettes*:* The 28 study vignettes were used to assess participants' ability to identify a range of OCD and non-OCD case presentations. Five different vignettes were randomized to participants at each of the three assessment points.

Intervention: The intervention consisted of a 27-minute video developed specifically for the study. The video featured five OCD specialists and covered the following areas: (1) OCD DSM-IV-TR diagnostic criteria, (2) taboo thoughts (aggressive, sexual, and religious obsessions), (3) doubt as an underlying component of OCD, (4) explanation and examples of behavioral and mental compulsions, (4) symmetry/ordering obsessions, (5) "magical thinking" versus "just not right" OCD, (6) OCD with hoarding symptoms vs. hoarding disorder vs. collectors, (7) contamination-based obsessions and compulsions, (8) generalization of obsessions, (9) empirically supported treatments. Throughout the video, complimentary visual aids (i.e. information-based slides and picture/video-based examples) were provided. Moreover, all the obsessions outlined on the Y-BOCS were displayed over the course of the video.

Intervention evaluation form: This measure obtained information regarding the degree to which participants (1) found the OCD video-intervention to be interesting and informative, (2) learned new information from the video, and (3) recommended the presentation be incorporated into a psychopathology course.

Follow-up assessment questionnaire: This measure obtained information regarding the degree to which participants (1) found it challenging to provide diagnostic impressions for the vignettes, (2) felt confident in their diagnostic impressions, (3) exerted effort in providing diagnoses, (4) rated their overall knowledge of OCD symptomatology prior to the video-intervention, and (5) rated their overall awareness of specific OCD symptoms prior to the video-intervention.

Data analysis

The Statistical Package for the Social Sciences' (SPSS) was used for all descriptive analyses. Statistical Analysis Software (SAS) was used to conduct a generalized linear mixed logistic regression model to account for the following: 1) the nested structure of the study caused by the inclusion of participants from different graduate school program; 2) whether condition affected correct identification rates at the study assessment points, 3) significant predictors of a correct OCD diagnostic impression.

Results

OCD misidentification rates: Prior to the video intervention

As predicted, the pre-intervention misidentification rates were greater for the non-symmetry and non-contamination vignettes (17.7-33.3%) compared to symmetry and contamination vignettes (0.0-6.3%). While results from the power analysis predicted sufficient power for a sample of 60 participants, the power analysis was conducted based on the OCD misidentification rates from our prior work [8,9]. The misidentification rates for the current study were lower than the prior studies and therefore the current study's sample size lacked power to detect for significance between OCD vignette type and correct diagnostic impression. Nonetheless, our results show participants were more likely to correctly identify the need for symmetry and contamination vignettes compared to the other OCD vignettes. See Table 3 for the misidentification rates.

OCD misidentification rates: post video-intervention

After viewing the video-based intervention OCD misidentification rates decreased across both conditions. Participants in the intervention condition experienced a large decline in the misidentification rates from the pre-intervention assessment versus the post-intervention assessments (14.6% vs. 4.6%). Similarly, the overall misidentification rate in the control condition (time-lagged intervention), decreased from the pre-intervention to post-intervention assessment by approximately three-fold (19.8% vs. 6.4%). These results suggest that regardless of the

Vignette	Pre-Intervention		Post-Intervention	
	Sample Size	Misidentification Rates (%)	Sample Size	Misdentification Rates (%)
Obsessions regarding				
Sexual orientation	15	33.3	16	12.5
Fear of saying things	16	25.5	15	6.7
Aggression	18	22.2	11	9.1
Pedophilia	18	22.2	14	0.0
Religion	15	20.0	15	0.0
Somatic concerns	17	17.6	15	13.3
Contamination	16	6.3	13	0.0
Need for symmetry	15	0.0	13	0.0
Across all OCD vignettes	130	18.5	112	5.4
Contamination/Need for symmetry	31	3.2	26	0.0
Non-contamination/Non-need for symmetry	99	23.2	86	7.0

Table 3: OCD Misidentification rates: Pre-intervention versus post-intervention comparison.

Characteristic	Descriptive (%)				
	Not at all aware	Not very aware	Neutral aware	Somewhat aware	Very aware
OCD symptomatology*		6.4	11.5	70.5	11.5
Aggressive obsessions	1.3	34.7	5.3	42.7	16.0
Contamination obsessions		1.3		23.7	75.0
Homosexual obsessions	5.3	23.7	11.8	39.5	19.7
Religious obsessions	2.6	14.5	5.3	32.9	44.7
Saying certain things obsessions	1.3	18.4	21.1	30.3	28.9
Sexual obsessions	3.9	13.2	6.6	42.1	34.2
Somatic obsessions	3.9	18.4	9.2	47.4	21.1
Need for symmetry obsessions	2.6	1.3	2.6	25.0	68.4

Table 4: Awareness of OCD symptomatology prior to OCD training tool administration.

study condition, the likelihood of the participants correctly identifying the OCD vignette increased after exposure to the training tool.

Additional support for the positive benefits of the video-intervention was found at the second assessment point. Participants who had been exposed to the video-intervention (intervention condition) had a lower OCD misidentification rate compared to those in the control condition who had not yet seen the video (2.9 % vs. 14.6%, respectively). Furthermore, results from an odds ratio analysis found that at the second assessment point, participants in the intervention were approximately seven times more likely to correctly identify the OCD vignette (O.R.=7.407; CI 0.786, 69.812) than those in the control condition.

It is important to note that an OCD over-identification bias was found following exposure to the video; approximately two-thirds of the participants (67.9%) reported a primary OCD diagnostic impression for the non-OCD vignettes. The likelihood of a false positive OCD identification was approximately twice as common following exposure to the video intervention (pre-intervention=32.1%, post-intervention=67.9%). Furthermore, the OCD over-identification effect was found for the vast majority of the vignettes from the following categories: Specific OCD Differentials, Broad OCD Differentials, and Specific Phobia vignettes. The only group that did not show the over-identification pattern was the Control vignettes.

Self-reported awareness of OCD symptomatology

Upon completion of the study, participants completed a questionnaire that assessed their overall knowledge of OCD symptomatology and awareness of specific symptom presentations *prior to* viewing the video. This assessment was not given prior to the study to avoid priming participants regarding the OCD focus of the study.

While the majority of participants (82.0%) reported being either *somewhat* or *very knowledgeable* regarding OCD, when asked about their awareness of specific OCD obsessions large discrepancies in awareness of certain symptom presentations were found. The following represent the percentage of participants that reported being either *not at all aware* or *not very aware* of the specific OCD manifestations: obsessions regarding aggression (36.0%), homosexuality (29.0%), somatic concerns (22.3%), fear of saying certain things (19.7%), religion (17.1%), sexual content (17.1%), need for symmetry (3.9%), and contamination (1.3%). See Table 4 for the full description of participants' awareness of OCD symptomatology prior to viewing the video-based intervention.

Subjective assessment of the educational video intervention and study questionnaire

Overall the video-based intervention was well received. The vast majority of participants (93.8%) recommended the video be incorporated in a psychopathology course. In addition, 93.8% of participants reported the video was either somewhat or very informative, 84.0% reported the presentation was either somewhat or very interesting, and 67.9% reported learning either some or a lot of new information. Participants were more likely to report it was somewhat or very easy to identify the OCD vignette after seeing the video (pre-intervention=38.5%; post-intervention=80.8%). Furthermore, across all study vignettes, the vast majority of participants (93.6%) endorsed applying some or full effort into their diagnostic impressions.

Discussion

The present study demonstrates that there is a widespread lack of awareness of many OCD symptoms among clinical, counseling and school psychology doctoral students. Participants were approximately four to nine times more likely to report being completely unaware of non-contamination/non-symmetry obsessions compared to contamination or symmetry obsessions. Across the eight OCD symptom presentations assessed, participants reported being least aware that OCD could manifest as aggressive or homosexual obsessions. In addition, prior to seeing the OCD video-intervention, approximately one-quarter of participants misdiagnosed the non-contamination/non-symmetry obsessions; participants were approximately eight times more likely to misdiagnosis these obsessions compared to the contamination or symmetry obsessions.

The results also found, the video-intervention was efficacious in increasing participants' ability to identify a broader range of OCD cases. For example, at the second assessment point participants who had seen the video were seven times more likely to correctly identify the OCD vignettes compared to participants who had not yet seen the video. Furthermore, the overall OCD misdiagnosis rate decreased by approximately three-fold, following exposure to the video-intervention.

However, it is important to note that while the diagnostic accuracy of identifying the OCD vignettes increased following the intervention, the likelihood of incorrectly labeling the non-OCD vignettes as OCD doubled. Furthermore, the vast majority of the vignettes were susceptible to the OCD over-identification effect; which highlights it was not a couple of conditions that were being misidentified but that the over-identification pattern was a widespread problem. These findings suggest that targeted training on educating health professionals on the varied manifestations of OCD may be helpful in increasing awareness of OCD symptom presentations but that more emphasis on making differential diagnoses in order to prevent over-diagnosis of OCD is needed.

The participants' were actively engaged when providing their responses to the questionnaires. The vast majority of participants endorsed exerting full or some effort when providing their diagnostic impressions across the vignettes. None of the participants reported using no effort when completing the study assessments. Across all vignettes, almost two-thirds of the participants reported being very or somewhat confident in their diagnostic impressions. As expected, subsequent to viewing the intervention participants were approximately twice as likely to report identifying the OCD vignette with greater ease, which suggests that the video-intervention increased participants' self-efficacy in identifying OCD cases. It is still important to remember that after seeing the video intervention participants were also more likely to consider non-OCD cases as OCD.

The self-reported lack of awareness regarding OCD symptomatology rates and elevated OCD misidentification rates are concerning since diagnostic conceptualizations tend to guide treatment [23,24] and therefore incorrect diagnoses may lead to an inaccurate understanding of the individual's presenting problems and subsequently to ineffective treatment. For example, a recent case report [25] described a patient whose OCD intrusive thoughts were misdiagnosed as hallucinations. This incorrect diagnostic impression led to the prescription of antipsychotic medications, which exacerbated her symptoms. Eventually she was diagnosed with OCD, her treatment plan was subsequently altered, and her symptoms improved accordingly. Our prior work also underscores the significant impact of OCD diagnostic accuracy on treatment recommendations. In another study, primary care physicians who correctly identified the OCD case were 1.5 to 8.0 times more likely than those who incorrectly diagnosed the case to recommend a first-line OCD treatment [9].

In summary, prior to seeing the video intervention, the misidentification rates varied greatly depending on the OCD vignette. In line with our predictions, the content of the vignette (e.g., contamination vs. aggressive obsessions) influenced the likelihood of the individual providing an accurate OCD diagnostic impression. In addition, across both study conditions, participants were approximately 3.5 times more likely to correctly identify the OCD vignette at the post vs. pre-intervention assessments suggesting that the training tool was effective in decreasing OCD misidentification rates. However, as previously noted, the likelihood of participants labeling the non-OCD vignettes as OCD also increased subsequent to viewing the video. The overall findings suggest that the video-intervention was successful in increasing awareness across the broad range of OCD symptomatology but needs to be enhanced to help participants make nuanced differential diagnoses.

Limitations

The biggest limitation of the study was the small sample size, which likely impacted the ability to find significance for some of our analyses. However, trends approaching significance were found suggesting that a larger sample would have led to significant differences between vignette type and correct response. Another limitation was the unequal distribution of certain demographic variables. Therefore a larger and more representative sample is needed, in order to increase the generalizability of the study's findings. Additionally, due to the inability to anticipate which programs would ultimately enroll in the study it was not possible to randomize the sites to the study condition. The fact that no significant differences between the conditions at the initial assessment were found suggests that the non-randomization process did not bias the results.

Identifying any condition based on a brief vignette is also a limitation. All vignettes were written to meet DSM-IV-TR criteria for the intended disorder; this was done in order to increase the internal validity. The increase in diagnostic validity led to a decrease in external validity, since most clients do not present to clinicians and report their symptoms as per the DSM-IV criteria. Increasing the length of the vignettes would allow for both high internal and external validity. However, since each participant was reading 15 vignettes the need to decrease participant burden outweighed the decision to lengthen the vignettes.

Future Research

As previously noted, the small sample size was a limiting factor therefore replicating the current methodology with a larger population would be beneficial. Another study finding that warrants significant attention relates to the elevated false positive OCD identification rates following the viewing of the video. Including diagnostic training modules for conditions other than OCD in order to help with differential diagnoses may lower this OCD over-identification bias. Although we didn't find prior research assessing the likelihood of increased false positive rates following a diagnostic training video, evidence exists supporting the tendency for specialists to over-diagnose conditions that fall within their specialized domain [26,27]. Given both our findings and prior evidence of over-diagnosis among specialists, it is imperative that future training tools address this bias and aid clinicians in making differential diagnoses. Lastly, this study assessed a narrow range of mental health professional trainees; future studies to assess OCD awareness and the efficacy of providing comprehensive OCD training among graduate students in other education programs to become social workers, licensed professional counselors, or mental health counselors is needed.

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