Note: Snapshot PDF is the proof copy of corrections marked in EditGenie, the layout would be different from typeset PDF and EditGenie editing view.

Author Queries & Comments:

Q1 : Please provide missing department for the affiliation for this author.

Response: The author ask me to include only the university without the department

Q2 : The reference "Forster, Berthollier, & Rawlinson, 2014" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: Forster, C., Berthollier, N., & Rawlinson, D. (2014). A systematic review of potential mechanisms of change in psychotherapeutic interventions for personality disorder. Journal of Psychology & Psychotherapy, 4(133), 2161-0487.doi: 10.4172/2161-0487.1000133

Q3 : The reference "James 1884" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: James, W.(1884). What is an emotion? *Mind*, 9, 188-205.

Q4 : The reference "Lange 1885" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: Lange, C. G. (1885). The mechanism of the emotions. *The classical psychologists*, 672-684.

Q5 : The reference "Schachter & Singer, 1962" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: Schachter, S., & Singer, J. (1962). Cognitive, social, and physiological determinants of emotional state. *Psychological review*, 69(5), 379. doi: 10.1037/h0046234

Q6 : The reference "Bae, Kim, Lim, Park, & Hong, 2018" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: the correct is Bae, Kim, Lim, Park, & Hong, 2012

Q7 : The reference "Hill et al. (2005)" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: Hill, C. E., Knox, S., Thompson, B. J., Williams, E. N., Hess, S. A., & Ladany, N. (2005). Consensual qualitative research: An update. *Journal of counseling psychology*, 52(2), 196.

Q8 : Figures 1 and 2 was not cited in the text so a citation has been inserted. Please provide a correction if this is inaccurate.

Response: Resolved

Q9 : The reference "Morgan & Morgan, 2005" is cited in the text but is not listed in the references list. Please either delete the in- text citation or provide full reference details following journal style.

Response: Morgan, W. D., & Morgan, S. T. (2005). Cultivating attention and empathy. In C. K. Germer, R. D. Siegel, & P. R. Fulton (Eds.), *Mindfulness and psychotherapy* (pp. 73–90). New York: Guilford Press

Q10 : Please provide missing city for the reference "American Psychiatric Association, 2013" references list entry.

Response: Washington, DC

Q11 : The reference "Bae et al., 2012" is listed in the references list but is not cited in the text. Please either cite the reference or remove it from the references list.

Response: Is in the text but appear with the year 2018, I changed it

Q12 : The reference "Hayes and Gelso, 2001" is listed in the references list but is not cited in the text. Please either cite the reference or remove it from the references list.

Response: Remove

EMPIRICAL PAPER

Psychotherapists' emotional and physiological

reactions toward patients with either borderline personality disorder or depression

NATALIA PUTRINO[1,2,5], LEANDRO CASARI[3,4], BELÉN MESURADO[1,6], MARTÍN ETCHEVERS[5]

[1]Interdisciplinary Center of Mathematical and Experimental Psychology Research (CIIPME), National Council of Scientific and Technological Research (CONICET), Buenos Aires, Republic of Argentina

[2]Faculty of Psychology and Human Relations, Interamerican Open University (UAI), Buenos Aires, Argentina

[3]Human, Social and Environmental Research Institute (INCIHUSA), National Council of Scientific and Technological Research (CONICET), Buenos Aires, Mendoza, Argentina

[4]Faculty of Humanities and Economic Sciences, Pontifical Catholic University of Argentina, Buenos Aires, Argentina

[5]Faculty of Psychology, University of Buenos Aires, Buenos Aires, Argentina

[6]University Austral, Buenos Aires, Argentina**[Q1]**

Correspondence concerning this article should be addressed to Natalia Putrino, Interdisciplinary Center of Mathematical and Experimental Psychology Research (CIIPME), National Council of Scientific and Technological Research (CONICET), Buenos Aires, Republic of Argentina; Faculty of Psychology and Human Relations, Interamerican Open University (UAI), Buenos Aires, Argentina; Faculty of Psychology, University of Buenos Aires, Buenos Aires, Argentina. Email: nataliaines.putrino@gmail.com

History : received : 2019-04-03 revised : 2019-10-31 accepted : 2019-11-01

Abstract

Objective: There is a marked difference between the effects of psychotherapy for major depressive disorder (MDD) and borderline personality disorder (BPD), with treatment being less effective for the latter. Considering the importance of the therapeutic relationship in the prognosis of therapeutic results, some of these differential effects might be explained by the distinctive reactions that patients elicit in their therapists. The aim of the present research was to characterize therapists' perceptions of their emotional and physiological reactions to patients diagnosed with MDD or BPD. **Method:** A semi-structured interview was conducted with 43 clinical psychologists from Argentina with different theoretical orientations. These professionals treated at least one patient diagnosed with BPD and one with MDD during the previous year. Therapists' reactions were categorized through a modified consensual qualitative research analysis. **Results:** Our findings suggest that psychotherapists feel emotions of dysregulation with BPD patients and sensations of fatigue with MDD patients. **Conclusion:** The results provide some support for the idea that therapists may mirror their patients' internal experiences.

Clinical or methodological significance of this article: The clinical significance is about the psychotherapist´s interoception (body reactions) in the treatment of patients with different disorders such as borderline personality disorder and major depression. The methodology is qualitative because it allows a better approach to access the perceptions and judges from therapists.

A therapist's reactions to a patient are typically referred to as countertransference (CT). CT was traditionally conceptualized as unconscious conflicts and defensive reactions toward patients' transference (Hayes et al., 1998). Some authors have suggested that this narrow definition of CT does not adequately define the phenomenon, since therapists have reactions to a number of therapy-related events other than transference, and not all reactions are defensive or unconscious (Gelso & Hayes, 2001). Hayes (1995) postulated five principal components of CT: origins (the therapist's unresolved psychological conflicts), triggers (patient characteristics or therapy events that provoke the therapist's conflicts), effects (outcomes on therapy), management (the therapist's ability to moderate their reactions) and finally, manifestations (cognitive, emotional, behavioral, and bodily reactions of the therapist). The present study focused on two aspects of CT manifestations: the emotional and physiological reactions of therapists and, in particular, toward two types of patients—those with borderline personality disorder and depression.

Several previous studies have reported the presence of therapists' anxiety as a common emotional manifestation of CT (Hayes & Gelso, 1993; Hayes, Nelson, & Fauth, 2015; Hofsess & Tracey, 2010). However, there are fewer studies that focus on other important emotional manifestations of CT. Hayes et al. (1998) conducted a qualitative study analyzing 128 post-session interviews with 8 therapists regarding their countertransference reactions. Concerning the emotional manifestations of CT, they identified three types: approach (e.g., nurturing feelings), avoidance (e.g., boredom), and negative feelings (e.g., anger, sadness). Other studies have identified emotional reactions such as envy, hurt, excitement, fear, and disappointment as possible affective

manifestations of CT (Fauth & Hayes, 2006; Hayes et al., 2015; Hofsess & Tracey, 2010).

Several studies have found that mental health professionals' have differing perceptions toward patients with major depressive disorder (MDD) and borderline personality disorder (BPD). Professionals report more sympathy, connection and satisfaction in their therapeutic role with MDD than with BPD patients (Markham, 2003; Servais & Saunders, 2007). Healthcare professionals tend to consider BPD patients as being "difficult" (Bourke & Grenyer, 2010; Sansone & Sansone, 2013) because "not all therapists are motivated, naturally adapted, or trained to successfully treat clients with BPD" (Clarkin & Yeomans, 2013, p. 176). Moreover, BPD patients have marked difficulties in forming a therapeutic alliance with their therapist (Forster, Berthollier, & Rawlinson, 2014 **[Q2]**). Bateman and Fonagy (2004) argue that BPD patients are the most difficult patients to treat in psychotherapy because BPD patients typically have histories of ambivalent attachment. As a result, they are usually emotionally demanding of the therapist, for instance, exhibiting moments of love and hate in the same session (Clarkin & Yeomans, 2013).

A study by Brody and Farber (1996) found that therapists reported reactions of irritation and anger in response to patients with borderline characteristics, while the same therapists reported feelings of compassion and empathy with depressive patients. Further, therapists have reported feeling dissatisfied in their therapeutic role with BPD patients, despite a consistent wish to help them (Bourke & Grenyer, 2010; Markham, 2003), and they demonstrated anxiety and some prejudice toward BPD patients (Jobst, Hörz, Birkhofer, Martius, & Rentrop, 2010). In comparison, therapists tend to have a greater interest in working with depressed patients, since they believe that outcomes will be more positive (Levenson, 2013; McIntyre & Schwartz, 1998).

Therapists' Physiological Reactions to Patients

In addition to the emotional dimensions of CT, previous work has highlighted the importance of therapists' physiological responses to patients. The first to introduce links between bodily and cognitive effects during emotional experiences were James and Lange (1884 **[Q3]**, 1885 **[Q4]**). Their framework postulated that bodily changes directly follow the perception of an arousing stimulus and that emotions reflect such changes. Thus, the intensity of an emotion is affected by the person's physiological arousal (Schachter & Singer, 1962 **[Q5]**). Despite several specifications and some controversy on the fine-grained details of these interactions, several recent empirical studies have aligned with the broad principles of this theory (Salamone et al., 2018; Schäflein, Sattel, Pollatos, & Sack, 2018; Yoris et al., 2017).

It is plausible that bodily states are associated with the intensity of feelings experienced (Pollatos, Gramann, & Schandry, 2007). Diverse studies have found that emotional reactions predict, and are predicted by, physiological responses such as muscular tension, heart rate, skin conductance and a sense of drowsiness. For example, muscle tension provides a sense of strength and self-assurance in a situation of anger. Muscular tension is a preparatory action for attack and defense (Novaco, 2016). States of boredom are associated with low heart rate and respiration, similar to when one becomes sleepy or fatigued (Frederick-Recascino & Hilscher, 2001). In a series of interviews with Irish psychotherapists, Egan, Booth, and Trimble (2010) found that common forms of somatic countertransference were muscle tension and sleepiness. However, Hayes et al. (2015) found that therapists from the U.S. whom they interviewed did not report any physiological manifestations of CT.

Few studies have investigated the relationship between physiological responses and the psychotherapeutic relationship. In an early study, DiMascio, Boyd, and Greenblatt (1957) found that therapists' heart rate (HR) changed when the patient expressed antagonistic responses toward the therapist. HR acceleration tends to be associated with anxiety and distress (Bae, Kim, Lim, Park, & Hong, 2018 **[Q6]**) as well as anger, fear, and sadness (Levenson, Ekman, & Friesen, 1990). Moreover, an elevated HR is associated with emotional dysregulation and lower empathy (Appelhans & Luecken, 2006). Thus, adequate HR regulation is linked with better social behavior (Van Hecke et al., 2009).

Similarly, another demonstrated that the influence of empathy in therapist-patient interactions can be observed at a physiological level. Marci, Ham, Moran, and Orr (2007) found that synchronization of emotional skin conductance responses (a biological marker of autonomic sympathetic reactivity) between therapists and patients took place during therapy and was associated with higher ratings of the therapist's empathic responses and with more positive socioemotional patient-therapist interactions.

In response to the limited literature on therapists' emotional and physiological reactions to clients, the aim of the present study was to examine therapists' reactions to patients diagnosed with MDD and BPD. An exploratory, modified consensual qualitative research (CQR) approach was used to analyze data from interviews with therapists.

Method

Participants

The sample included 43 clinical psychologists from Argentina with different theoretical orientations, including integrative (n = 9), cognitive behavioral therapy (n = 17), psychoanalysis (n = 13), and systemic (n = 4) backgrounds. Of the 43 psychotherapists, 28 were women, and 15 were men. We included only the psychotherapists who had treated patients with both disorders in the last

year. The median age of the sample was 41.3 years, with a standard deviation of 11.7 years. Ages ranged from 26 to 72 years. The median years of experience of our sample of therapists was 14.3, with a standard deviation of 10.7 years. Experience ranged widely from 2 to 40 years.

Instrument

Three authors of this research study discussed and generated a semi-structured interview protocol. Psychotherapists were asked to think about a patient with whom they had worked in the past year with MDD and another with BPD. To ensure that the psychotherapists had a common understanding about each disorder, we included a definition of BPD and MDD from the Diagnostic and Statistical Manual of Mental Disorder, fifth edition (American Psychiatric Association, 2013). We asked therapists to describe the feelings that they experienced during their sessions with each patient. We also asked whether the therapists to describe any bodily sensations they were aware of while in session with each patient.

Procedure

The psychotherapists were recruited using a snowball sampling approach. We sent an email to a list of psychotherapists from Argentina with whom we had had previous contact. Then, we asked them to share our interview questionnaire with their colleagues. Interested participants were interviewed in person for approximately 30 min. The study received ethical approval from the institutional review board of the university. The participation of the therapists was voluntary and anonymous, and they did not receive any kind of compensation for their participation.

Qualitative Analysis

We analyzed data using a consensual qualitative research (CQR) approach developed by Hill, Thompson, and Williams (1997). The primary team included a postdoctoral student (male, 34 years old, with an integrative theoretical background), a professor of the university (male, 50 years old, with a psychodynamic theoretical background) and a recent graduate in psychology (male, 35 years old, with an integrative theoretical background). The function of the auditor was to integrate and give assistance to the consensus process. The auditor was familiar with the research but was outside the consensus process (Anderson, Leahy, DelValle, Sherman, & Tansey, 2014). In this research, the auditor was a doctoral student (female, 29 years old) whose thesis was linked to this study and had a theoretical background in cognitive behavior therapy. In terms of bracketing researchers' expectations, the professor of the university, who had more experience in psychotherapy, had a strong belief that participants would report more sensations of being exhausted with MDD versus BPD patients. The other researchers thought that the BPD clients would generate more unsatisfying and dysregulated emotional reactions in the therapists, but they did not have specific ideas about the emotional reactions toward patients with MDD.

In terms of familiarity with the literature, the first author was studying emotional and physiological responses through a neuroscience methodology, and she was the principal investigator interested in learning about the responses that therapists have in this relationship. For these reasons, she was very familiar with the research and theoretical writings on different emotional and physiological responses in psychotherapists to BPD and MDD clients. The second and fourth authors possessed moderate knowledge of this topic, but their doctoral research had focused on the therapeutic alliance and psychotherapists' characteristics. The third author had little familiarity with writings on this topic prior to the study.

We made minor adaptations to CQR because to suit our data. We acknowledge that Hill et al. (2005) **[Q7]** recommend using frequency terms (e.g., variant, typical) rather than providing exact counts of how frequently a category occurs in the dat. However, in this study, we chose to include numerical representations to be more specific regarding the frequency of the types of responses.

The participants' responses were ordered by thematic areas or domains, after which the authors identified core ideas through open discussion. The primary team agreed to identify domains and core ideas that represented the data adequately. This work was done with an auditor whore viewed the primary team's work and provided feedback to ensure that the primary team added or deleted domains as needed and organized the core ideas to be balanced and close to the data.

Results

One over-arching domain and two categories emerged from the data. The domain was the emotional and physiological reactions of the therapist. The definition of this domain is the perception by psychotherapists about their emotional and physiological responses to these patients. The categories obtained were emotional charge for the therapist (negative impact) and body reaction. In the following subsection, we analyzed the domain, categories and core ideas by each disorder, BPD and MDD.

Emotional Reactions Toward Patients with BPD

With regard to this category, we selected some examples of core ideas about the emotional reactions that these patients

provoke in therapists. For instance, one therapist expressed, "In periods where she [the patient] felt a lack of control, she reacted with anger in response to my interventions. It made me feel rejected". Additionally, another therapist described other negative impacts based on the relationship, "Many times, after the sessions I felt … mentally overwhelmed. I also registered feelings of worthlessness regarding therapy. Many times, I felt intolerant toward excessive and immature behavior (…) I felt that the patient made me responsible for what happens to her." Furthermore, one therapist described, "I felt annoyance at the repetition of their maladaptive behaviors and their low awareness of it." Concerning the emotional charge for the therapist, 68% of the therapists in the sample expressed having an emotional charge with a negative impact when working with a patient with BPD.

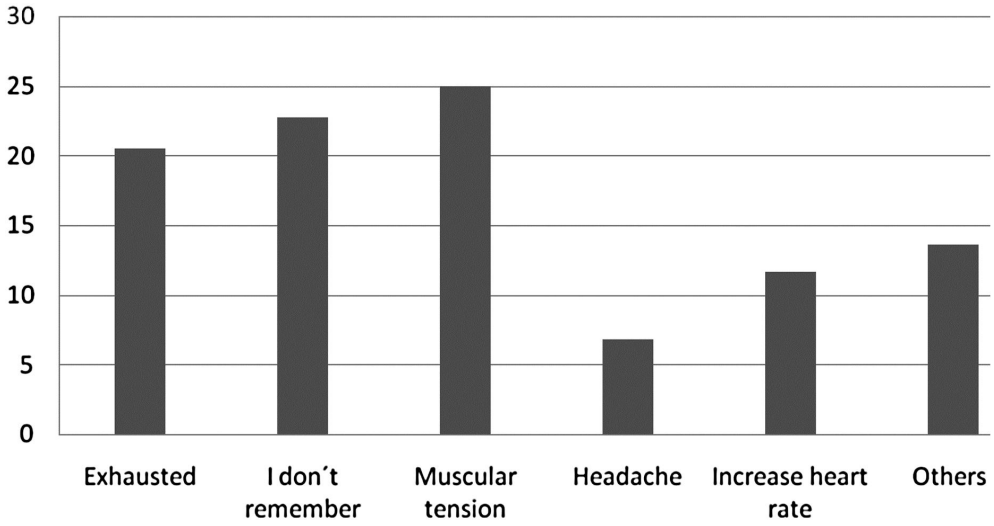
Emotional Reactions Toward Patients with MDD

One therapist expressed, "I was annoyed by her objection/resistance to any intervention that I felt will help her begin to actively cope with her distress." Another therapist perceived, "anxiety and distress (…) we were finishing the session when I noticed that she had not changed her point of view, she persisted in the idea of wanting to die soon". Moreover, one therapist described feeling helpless and said, "The patient cried tirelessly. I felt that maybe it was too much for me and that I couldn't help her." Concerning the emotional charge for the therapist, 72% of the therapists in the sample expressed having an emotional charge with a negative impact when working with a patient with MDD.

Physiological Reactions Toward Patients with BPD

We analyzed the bodily reactions that the therapists sense when they treat patients with BPD. We found different responses regarding body sensations, and we selected the more significant and frequently used examples. For instance, a therapist expressed, "The patient had an aggressive communication style and often, as a therapist, I experienced tension and increased heart rate". One therapist described, "Muscle contraction (…) She was saying that her neighbors were unbearable (in fact, they had no unpleasant act toward her) in a very choleric way" (Figure 1) **[Q8]**.

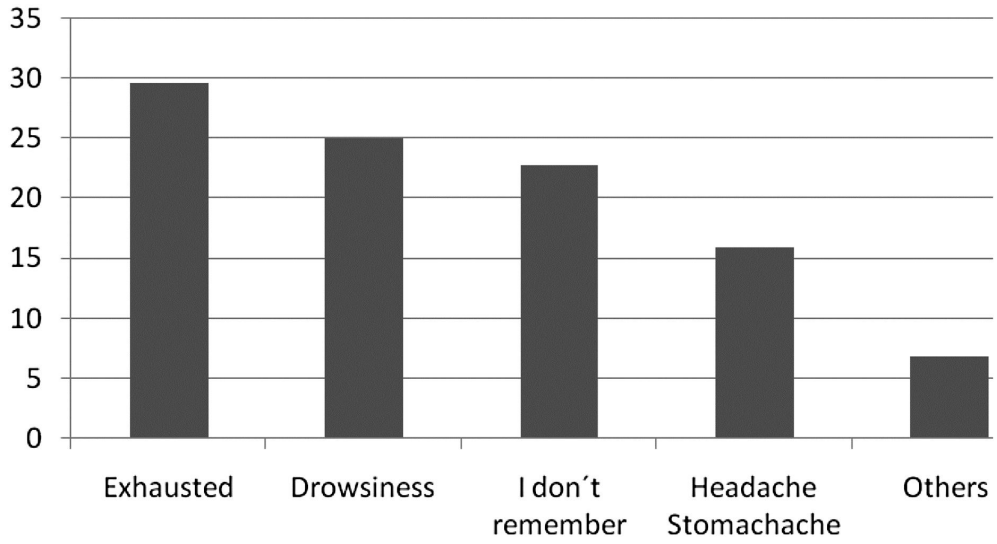
Figure 1. Percentage of physiological reactions with BPD patients



Physiological Reactions Toward Patients with MDD

We found some core ideas that show the typical responses in psychotherapists with MDD patients. Some therapists spoke about the same sensations, "Mental exhaustion and frustration that physiologically manifested in the form of drowsiness or fatigue". Another therapist expressed, "Before the sessions, I felt a heavy sensation, of something heavy to move … annoyance, sleep." Despite drowsiness or fatigue, we obtained other reports of body reactions, for example, "I remember feeling nerves and a stomachache when the patient was telling about her suicidal thoughts" (Figure 2).

Figure 2. Percentage of physiological reactions with MDD patients.



Discussion

The quality of the interpersonal relationships between psychotherapists and patients is a critical determinant of therapeutic outcomes. A crucial part of this relationship involves therapists' interventions and perceived patients' responses. In the domain "Emotional and physiological reactions of the therapist" related to psychotherapists' perceptions of their emotional and physiological responses to their patients, our findings have shown that psychotherapists perceived a similar level of negative emotions related to treating patients with BPD (68%) and treating patients with MDD (72%). This result suggests that the psychotherapists may be attuned to their patients' emotional states and experience similar affect to that exhibited by the patient (Coutinho, Silva, & Decety, 2014). The psychotherapists perceived different bodily reactions during the treatment of different psychopathologies. Specifically, psychotherapists reported muscular tension (25%, e.g., "I remember muscle contraction of the neck in moments that she became very demanding with me"), exhaustion (20.5%, e.g., "Many times after the sessions I felt tired and mentally overwhelmed"), increased heart rate (11.6%, e.g., "Yes, in an emotional regulation of my patient, who was annoyed, I felt strong palpitations") and headache (6.5%, e.g., "At the end of the workday, where this patient was treated, I felt a headache") when they treated patients with BPD. Psychotherapists reported drowsiness (27.5%, e.g., "Desire to sleep due to the rhythm and certain exhaustion of listening to the same thing"), exhaustion (27.5%, e.g., "A sensation of lead before the session began, of something heavy that has to be moved, annoyance"), and headache or stomachache (10%, e.g., "I remembered feeling nervous and a stomachache when the patient related her suicidal thoughts"). These varying results across patient type may be because the treatment of patients with BPD tends to be more challenging for a psychotherapist (Clarkin & Yeomans, 2013). Moreover, patients with BPD do not exhibit monotonous speech and behavior during the sessions but are characterized by an unstable pattern, with a poor level of impulse control, interpersonal relationships and self-image. The unpredictable behavior of BPD patients may adversely affect the psychotherapist's emotional and physiological reactions (for example, in emotional regulation and anxiety expressed as high levels of heart rate acceleration and exhaustion, or aggressive feelings expressed as muscular tension). Our results are in agreement with a previous study about the feelings of anxiety and being overwhelmed that psychotherapists perceive when dealing with these patients (Aviram, Brodsky, & Stanley, 2006).

In contrast, the physiological reactions that therapists reported with MDD patients are associated with monotony and the few changes that the patients present between sessions, such as a repetitive discourse. The use of absolutist words (Al-Mosaiwi & Johnstone, 2018) and negative emotional words and pronouns by depressive patients could influence the sensation of drowsiness and fatigue in psychotherapists. Depressive patients tend to be more self-focused with less connection to other people.

Our findings are also in line with the work of Kleinbub et al. (2019) on the interpersonal physiology (electrodermal activity and heart rate) of therapists and patients during 16 sessions of psychodynamic therapy. They found that therapists and patients showed similar patterns of physiological activity during sessions and that a higher similarity was related to better therapy outcomes. Our study also provides some support for the premise that therapists may mirror their patients' internal experiences. For example, BPD clients tend to feel and act in a more erratic and emotionally unstable manner. From an interpersonal perspective, one might predict that therapists will respond with muscle tension (arousal) and exhaustion (postarousal). Similarly, one may predict drowsiness and reduced energy (exhaustion) when working with MDD patients, as these symptoms are common in this disorder.

In summary, therapists' emotional and physiological responses may mirror patients' distress (Levenson, 2013). Consequently, it is necessary that psychotherapists recognize their own bodily reactions, become aware and be able to make sense of their emotions and their physiological sensations (Clarkin & Yeomans, 2013). This ability could improve the skills of emotional regulation and allow therapists to become more attuned and responsive to patients' needs in session (Rieffe, Oosterveld, Miers, Terwogt, & Ly,

2008).

Limitations and Future Research

One of the limitations of this study is that we used semi-structured interviews. This approach may have limited the depth of the understanding of the psychotherapists' attitudes toward their patients. In the future, an open-ended interview could capture more information about the psychotherapists' attitudes about their patients and the relationship to the emotional and cognitive reactions reported in this study. Future research may inquire how the physiological, emotional and cognitive responses of the therapist affect the perception of the alliance with patients. Moreover, complementary methods may be used. It could be interesting to develop neurophysiological studies to evaluate the concordance of the subjective experience of the psychotherapist with direct measures.

Conclusion

To our knowledge, this study was the first to specifically address this topic of physiological reactions associated with the emotional responses of therapists treating patients with major depression disorder and borderline personality disorder. Our findings suggested that psychotherapists have different bodily reactions when they treat patients, and they differ across BPD and MDD patients. Thus, we argue that the therapists need to be aware of and work with their own emotional and physiological responses with patients, especially with BPD patients, because they could affect the relationship and the outcomes of therapy. In light of the four results of this study, we recommend mindfulness training for therapists because it may be an important tool to help future counselors develop self-regulation abilities instead of avoiding them or overidentifying with the emotional distress of their patients (e.g., Morgan & Morgan, 2005 **[Q9]**). In general, research on psychotherapists suggests that meditation practices increase awareness and connection to their patients; for example, mindfulness interventions with clinical psychology residents have been associated with a reduction in symptoms and better coping strategies among their patients (Grepmair et al., 2007). Thus, based on our results and the supporting literature, we suggest the inclusion of mindfulness training in curricula or training programs. We also suggest effective training to treat BPD patients. Day, Hunt, Cortis-Jones, and Grenyer (2018) found that healthcare professionals have a better attitude toward BPD patients because there is better affective training for clinicians in the treatment of BPD. Finally, supervision and further research on the therapeutic process and the influence of patients' behaviors on therapists may offer more solutions for the negativity in psychotherapists' responses to patients.

Acknowledgments

The authors would like to thank Sofia Monteiro and Nili Solomonov for providing feedback on our paper.

References

Al-Mosaiwi, M., & Johnstone, T. (2018). In an absolute state: Elevated use of absolutist words is a marker specific to anxiety, depression, and suicidal ideation. *Clinical Psychological Science*, *6*(4), 529–542. doi.org/10.1177/2167702617747074

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. American Psychiatric Publishing.**[Q10]**

Anderson, C. A., Leahy, M. J., DelValle, R., Sherman, S., & Tansey, T. N. (2014). Methodological application of multiple case study design using modified consensual qualitative research (CQR) analysis to identify best practices and organizational factors in the public rehabilitation program. *Journal of Vocational Rehabilitation*, *41*(2), 87–98. doi:10.3233/JVR-140709

Appelhans, B. M., & Luecken, L. J. (2006). Heart rate variability as an index of regulated emotional responding. *Review of General Psychology*, *10*(3), 229–240. doi.org/10.1037/1089-2680.10.3.229

Aviram, R. B., Brodsky, B. S., & Stanley, B. (2006). Borderline personality disorder, stigma, and treatment implications. *Harvard Review of Psychiatry*, *14*(5), 249–256. doi:10.1080/10673220600975121

Bae, S., Kim, J. H., Lim, Y. H., Park, H. Y., & Hong, Y. C. (2012). Associations of bisphenol A exposure with heart rate variability and blood pressure. *Hypertension*, *60*(3), 786–793. doi:10.1161/HYPERTENSIONAHA.112.197715**[Q11]**

Bateman, A. W., & Fonagy, P. (2004). Mentalization-based treatment of BPD. *Journal of Personality Disorders*, *18*(1), 36–51. doi:10.1521/pedi.18.1.36.32772

Bourke, M. E., & Grenyer, B. F. (2010). Psychotherapists' response to borderline personality disorder: A core conflictual relationship theme analysis. *Psychotherapy Research*, *20*(6), 680–691. doi:10.1080/10503307.2010.504242

Brody, E. M., & Farber, B. A. (1996). The effects of therapist experience and patient diagnosis on countertransference. *Psychotherapy: Theory, Research, Practice, Training*, *33*(3), 372–380. doi:10.1037/0033-3204.33.3.372

Clarkin, J. F., & Yeomans, F. (2013). Managing negative reactions to clients with BPD in transference-focused psychotherapy. In **A.**

W. Wolf, M. R. Goldfried, & C. Muran (Eds.), *Transforming negative reactions to clients. From frustration to compassion* (pp. 175–188). Washington, D.C.: American Psychological Association.

Coutinho, J. F., Silva, P. O., & Decety, J. (2014). Neurosciences, empathy, and healthy interpersonal relationships: Recent findings and implications for counseling psychology. *Journal of Counseling Psychology*, *61*(4), 541–548. doi:10.1037/cou0000021

Day, N. J., Hunt, A., Cortis-Jones, L., & Grenyer, B. F. (2018). Clinician attitudes towards borderline personality disorder: A 15-year comparison. *Personality and Mental Health*, *12*(4), 309–320. doi:10.1002/pmh.1429

DiMascio, A., Boyd, R. W., & Greenblatt, M. (1957). Physiological correlates of tension and antagonism during psychotherapy: A study of "interpersonal physiology.". *Psychosomatic Medicine*, *19*(2), 99–104.

Egan, J., Booth, A., & Trimble, T. (2010). Body centered counter-transference in a sample of Irish clinical psychologists. *The Irish Psychologist*, *36*(12), 284–289.

Fauth, J., & Hayes, J. A. (2006). Counselors' stress appraisals as predictors of countertransference behavior with male clients. *Journal of Counseling & Development*, *84*(4), 430–439. doi:10.1002/j.1556-6678.2006.tb00427.x

Frederick-Recascino, C. M., & Hilscher, M. (2001, October). Monitoring automated displays: Effects of and solutions for boredom. In *20th Digital Avionics Systems Conference* (Vol. 1, pp. 5D3-1). IEEE.

Gelso, C. J., & Hayes, J. A. (2001). Countertransference management. *Psychotherapy: Theory, Research, Practice, Training*, *38*(4), 418–422. doi:10.1037/0033-3204.38.4.418

Grepmair, L., Mitterlehner, F., Loew, T., Bachler, E., Rother, W., & Nickel, M. (2007). Promoting mindfulness in psychotherapists in training influences the treatment results of their patients: A randomized, double-blind, controlled study. *Psychotherapy and Psychosomatics*, *76*(6), 332–338. doi:10.1159/000107560

Hayes, J. A. (1995). Waking a sleeping dog: Countertransference in group psychotherapy. *International Journal of Group Psychotherapy*, *45*, 521–535.

Hayes, J. A., & Gelso, C. J. (1993). Male counselors' discomfort with gay and HIV-infected clients. *Journal of Counseling Psychology*, *40*(1), 86–93.

Hayes, J. A., & Gelso, C. J. (2001). Clinical implications of research on countertransference: Science informing practice. *Journal of Clinical Psychology*, *57*(8), 1041–1051. doi:10.1002/jclp.1072**[Q12]**

Hayes, J. A., McCracken, J. E., McClanahan, M. K., Hill, C. E., Harp, J. S., & Carozzoni, P. (1998). Therapist perspectives on countertransference: Qualitative data in search of a theory. *Journal of Counseling Psychology*, *45*(4), 468–482.

Hayes, J. A., Nelson, D. L. B., & Fauth, J. (2015). Countertransference in successful and unsuccessful cases of psychotherapy. *Psychotherapy*, *52*(1), 127–133. doi:10.1037/a0038827

Hill, C. E., Thompson, B. J., & Williams, E. N. (1997). A guide to conducting consensual qualitative research. *The Counseling Psychologist*, *25*(4), 517–572. doi:10.1177/0011000097254001

Hofsess, C. D., & Tracey, T. J. (2010). Countertransference as a prototype: The development of a measure. *Journal of Counseling Psychology*, *57*(1), 52. doi:10.1037/a0018111

Jobst, A., Hörz, S., Birkhofer, A., Martius, P., & Rentrop, M. (2010). Psychotherapists' attitudes towards the treatment of patients with borderline personality disorder. *Psychotherapie, Psychosomatik, Medizinische Psychologie*, *60*(3–4), 126–131. doi:10.1055/s-0029-1220764

Kleinbub, J. R., Palmieri, A., Orsucci, F. F., Andreassi, S., Musmeci, N., Benelli, E., ... de Felice, G. (2019). Measuring empathy: A statistical physics grounded approach. *Physica A: Statistical Mechanics and its Applications*, *526*, 120979.

Levenson, H. (2013). Time-limited dynamic psychotherapy: Working with reactions to chronically depressed clients. In **A. W. Wolf, M. R. Goldfried, & C. Muran** (Eds.), *Transforming negative reactions to clients. From frustration to compassion* (pp. 193–220). Washington, D.C.: American PsychologicalAssociation.

Levenson, R. W., Ekman, P., & Friesen, W. V. (1990). Voluntary facial action generates emotion-specific autonomic nervous system activity. *Psychophysiology*, *27*(4), 363–384. doi:10.1111/j.1469-8986.1990.tb02330.x

Marci, C. D., Ham, J., Moran, E., & Orr, S. P. (2007). Physiologic correlates of perceived therapist empathy and social-emotional process during psychotherapy. *The Journal of Nervous and Mental Disease*, *195*(2), 103–111. doi:10.1097/01.nmd.0000253731.71025.fc

Markham, D. (2003). Attitudes towards patients with a diagnosis of "borderline personality disorder": Social rejection and dangerousness. *Journal of Mental Health*, *12*(6), 595–612. doi:10.1080/09638230310001627955

McIntyre, S. M., & Schwartz, R. C. (1998). Therapists' differential countertransference reactions toward clients with major

depression or borderline personality disorder. *Journal of Clinical Psychology*, *54*(7), 923–931. doi:10.1002/(SICI)1097-4679(199811)54:7<923::AID-JCLP6>3.0.CO;2-F

Novaco, R. W. (2016). Anger. In **G. Fink** (Ed.), *Stress: Concepts, cognition, emotion, and behavior* (pp. 285–292). London, UK: Academic Press.

Pollatos, O., Gramann, K., & Schandry, R. (2007). Neural systems connecting interoceptive awareness and feelings. *Human Brain Mapping*, *28*(1), 9–18. doi:10.1002/hbm.20258

Rieffe, C., Oosterveld, P., Miers, A. C., Terwogt, M. M., & Ly, V. (2008). Emotion awareness and internalising symptoms in children and adolescents: The emotion awareness questionnaire revised. *Personality and Individual Differences*, *45*(8), 756–761. doi:10.1016/j.paid.2008.08.001

Salamone, P. C., Esteves, S., Sinay, V. J., García-Cordero, I., Abrevaya, S., Couto, B., … Sedeño, L. (2018). Altered neural signatures of interoception in multiple sclerosis. *Human Brain Mapping*, *39*(12), 4743–4754. doi:10.1002/hbm.24319

Sansone, R. A., & Sansone, L. A. (2013). Responses of mental health clinicians to patients with borderline personality disorder. *Innovations in Clinical Neuroscience*, *10*(5–6), 39–43. PMID: 23882440.

Schäflein, E., Sattel, H. C., Pollatos, O., & Sack, M. (2018). Disconnected–impaired interoceptive accuracy and its association with self-perception and cardiac vagal tone in patients with dissociative disorder. *Frontiers in Psychology*, *9*, 897. doi:10.3389/fpsyg.2018.00897

Servais, L. M., & Saunders, S. M. (2007). Clinical psychologists' perceptions of persons with mental illness. *Professional Psychology: Research and Practice*, *38*(2), 214–219. doi:10.1037/0735-7028.38.2.214

Van Hecke, A. V., Lebow, J., Bal, E., Lamb, D., Harden, E., Kramer, A., … Porges, S. W. (2009). Electroencephalogram and heart rate regulation to familiar and unfamiliar people in children with autism spectrum disorders. *Child Development*, *80*(4), 1118–1133. doi:10.1111/j.1467-8624.2009.01320.x

Yoris, A., García, A. M., Traiber, L., Santamaría-García, H., Martorell, M., Alifano, F., & Ibáñez, A. (2017). The inner world of overactive monitoring: Neural markers of interoception in obsessive–compulsive disorder. *Psychological Medicine*, *47*(11), 1957–1970. doi:10.1017/S0033291717000368