RESEARCH ARTICLE

Mental pain intensity and tolerance as predictors of psychotherapy process and outcome

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Abstract

Background: The extensive reliance on symptoms for the study of psychotherapy is often criticized. In this study we examined whether the subjective sense of mental pain predicts psychotherapy process and outcome, above and beyond the effect of symptomatic distress.

Methods: Outpatients ($n = 53$) treated in a psychiatric hospital completed measures of mental pain intensity and tolerance, symptomatic distress, and session climate at pretreatment and posttreatment. Multilevel modeling was utilized to assess the predictive effect of mental pain, while controlling baseline symptomatic distress.

Results: Patients with high mental pain at baseline showed significant reductions in distress, while patients with low mental pain showed no significant improvement. Moreover, low mental pain and high mental pain tolerance predicted decreases in session smoothness.

Conclusions: Mental pain can serve as a predictive marker for psychotherapy process and outcome, and complement the reliance on symptomatic distress in psychotherapy research.

KEYWORDS
mental pain intensity, mental pain tolerance, psychotherapy outcome, psychotherapy process, psychotherapy research

1 | INTRODUCTION

Studies assessing predictors of psychotherapy process and outcome have identified several patient-related variables which affect the therapeutic course, such as clients' pretreatment expectations (Vîslă et al., 2018), attachment style (Levy et al., 2018), or levels of self-criticism (Löw et al., 2019). Several studies have also demonstrated that patients' baseline symptomatic distress can act as a focal predictor of psychotherapy. Flückiger et al. (2013) found that intake baseline distress predicted broad-based outcome scores and accounted for 35.2% of the variance in psychotherapy outcome. Similarly, Falkenström et al. (2014) found that initial symptom level predicted symptom improvement over the course of psychotherapy provided in primary care settings. Although these studies attest to the importance of initial levels of distress, scholars often argue that the extensive reliance on symptoms distances clinical research from the investigation of patients' intrasubjective experience (Guidi et al., 2018). One such underinvestigated psychological construct is the intrasubjective experience of mental pain (MP).

Early definitions of MP conceptualize MP as a "psychache" (Shneidman, 1993): an aversive state that encompasses a mixture of shame, guilt, humiliation, loneliness, fear, angst dread, anguish, hopelessness, and rage. Orbach, Mikulincer, Sirota, et al. (2003) defined MP as "a wide range of subjective experiences characterized by an awareness of negative changes in the self and in its functions accompanied by negative feelings" (Orbach, Mikulincer, Gilboa-Schechtman, et al., 2003, p. 228). Using a series of studies aimed to delineate this construct, Orbach, Mikulincer, Gilboa-Schechtman, et al. (2003) identified nine empirically derived factors comprising MP, including irreversibility of the pain, loss of inner control, emotional flooding, narcissistic wounds, self-estrangement, emotional freezing, cognitive confusion, social distancing, and a sense of inner emptiness. Although some of the factors encompassing MP can be viewed as manifestations of symptoms, it has been suggested that MP differs from symptoms by capturing the intensity and quality of the negative experience of MP (Orbach, 2011).

Studies assessing the predictive value of MP provide some indications as to its role as a distinguishable subjective experience differing conceptually from symptoms of depression and anxiety. In a study assessing the role of MP in suicidal ideation among undergraduate students, Troister and Holden (2010) found that MP made a unique contribution to the prediction of suicidal ideation, beyond those attributed to depression and hopelessness. Recently, it has been suggested that *MP intensity* is negatively correlated with the ability to endure it, a construct referred to as *MP tolerance*. In a study conducted by Becker et al. (2019), MP tolerance was negatively associated with MP intensity, perceived stress, depression, hopelessness, and suicidal ideations and tendencies, and positively associated with emotion regulation skills. These findings attest to the potential differential role of MP intensity and tolerance, in the development of, and possibly also in the recovery from, emotional distress.

Although several scholars have pointed to the potential role of MP intensity and tolerance in therapeutic processes (Fava et al., 2019), to the best of our knowledge only one study has thus far examined the predictive effect of MP on therapeutic outcomes. Mee et al. (2019) examined the associations between pretreatment MP and treatment retention among patients treated in an outpatient unit for substance use disorders. They found that patients with high baseline MP were 1.21 times more likely to dropout or miss sessions compared with patients with low baseline MP scores. The authors suggested that this pattern could indicate that they are inherently poorer candidates for outpatient substance treatment, and proposed that future studies should seek to elucidate this possible association, by examining the predictive effect of MP on therapy process and outcome. Nonetheless, such an effect has not been previously examined.

In this study, we aimed to assess the effect of baseline levels of MP intensity and tolerance on the psychotherapy process and outcome, above and beyond the effect of baseline symptom distress. Based on previous studies (Mee et al., 2019), we hypothesized that high MP intensity would be associated with fewer therapeutic gains, as well as smaller gains in session comfort compared with low MP. Similarly, we hypothesized that low tolerance for MP would predict fewer gains in outcomes and would also affect patients' session evaluation. To test these hypotheses, participants suffering from adjustment, mood, and anxiety disorders, and treated in an outpatient unit of a psychiatric hospital, completed baseline measures of MP intensity and tolerance, psychotherapy outcomes, and session climate measures at pretreatment and posttreatment.

2 | METHODS

2.1 | Participants

2.1.1 | Patients

A flowchart of the patients' enrollment process is presented in Figure 1. Inclusion criteria included the provision of informed consent, adequate understanding of the Hebrew language, and the referral to individual or group therapy of any sort. Overall, 93 patients from an outpatient unit of a public mental health center (MHC) in Israel were assessed for eligibility, out of whom 24 refused to participate. Common reasons for refusal included concerns about questionnaires being time-consuming, uncertainty about whether they would want to actually start therapy, and concerns about confidentiality. Of the total 69 patients who signed the informed consent form, eight withdrew from the study before filling out the first questionnaire, and seven dropped out of therapy. Six patients did not complete the second measurement. Overall, 48 patients completed the study, and 54 patients completed at least one measurement. Analysis of differences between patients completing at least one measurement and patients who signed informed consent but did not participate in the study revealed no significant differences in age, $t(67) = -1.77$, $p = .08$; gender, $\chi^2(1) = 0.45$, $p = .49$; diagnosis, $\chi^2(3) = 5.79$, $p = .12$; or number of comorbid disorders, $\chi^2(1) = 0.78$, $p = .37$.
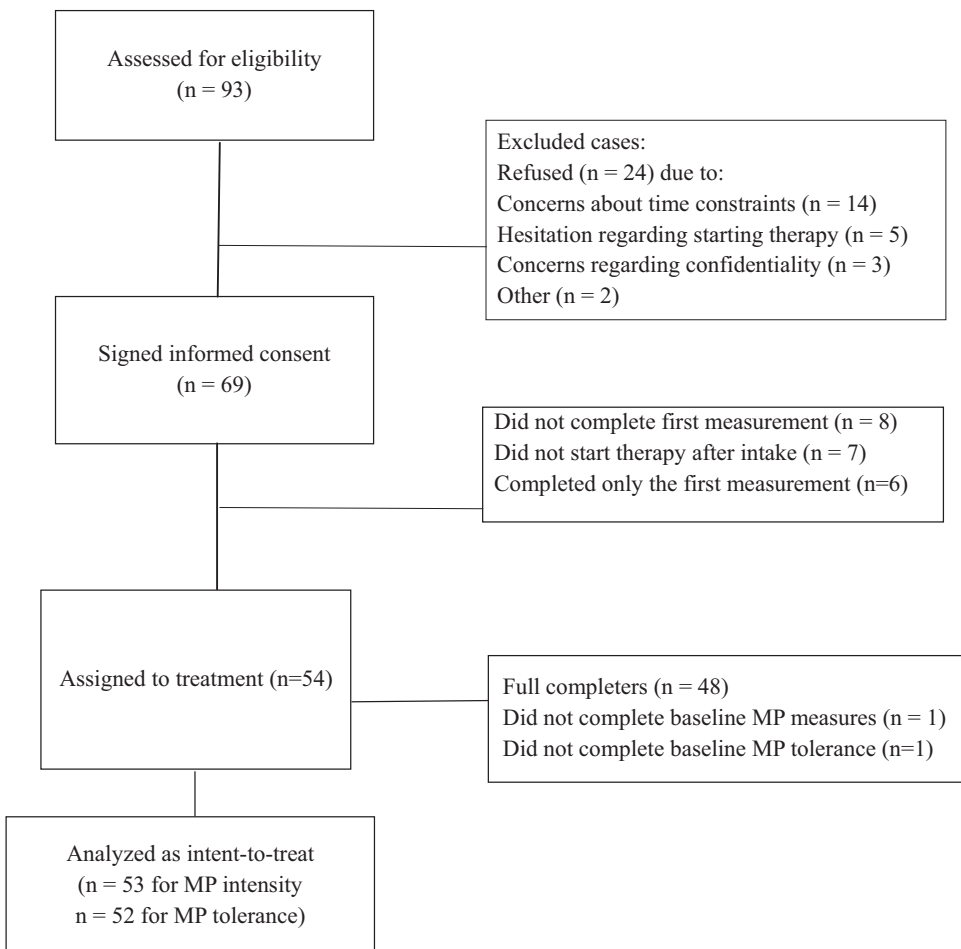

FIGURE 1 Flowchart of patients' enrollment

For the purpose of the current study, we analyzed patients with at least one measurement, as the intent-to-treat sample. Clinical and demographic characteristics of the analyzed sample are presented in Table 1. Patient age ranged from 20 to 67, $M = 39.39$, $SD = 12.44$. The majority of the sample comprised of female participants (63%). Of the total sample, 14 were diagnosed with affective disorders including bipolar disorder (25.9%); 18 were diagnosed with adjustment disorders (33.3%); 18 were diagnosed with anxiety disorders, including post traumatic stress disorder (PTSD) and somatoform disorders (33.3%); and four were diagnosed with other miscellaneous diagnoses (7.4%).

2.1.2 | Therapists

A total of 23 therapists participated in the study. Each therapist treated between one and seven patients ($M = 2.35$, $SD = 1.52$). All of the therapists were part-time employees of the public MHC. Seven of the therapists were psychologists (30%), 11 were social workers (48%), three were expressive arts therapists in psychotherapy training (13%), and two were psychology students undergoing masterlevel clinical training (9%). There was no exclusion based on the type of therapy provided by the therapist, and all forms of psychotherapeutic interventions were included in the study. These included individual psychotherapy (88.9%) and group psychotherapy (11.1%). Allocation of patients to therapists was conducted on the basis of therapists' caseloads. Therapists participating in the study were guided by the main therapeutic orientation of the specified MHC (blinded for review), which is predominantly psychodynamically-informed.

TABLE 1 Demographic, clinical, and research-related characteristics of the analyzed sample

Patients' characteristics	Total (n = 54)
Age (mean, SD)	39.39 (12.44)
Sex	
Males (n, %)	20 (37.0%)
Females (n, %)	34 (63.0%)
Diagnosis	
Affective disorders including bipolar (n, %)	14 (25.9%)
Adjustment disorder (n, %)	18 (33.3%)
Anxiety disorders including PTSD and somatoform (n, %)	18 (33.3%)
Other (n, %)	4 (7.4%)
Comorbidity (n, %)	12 (22.2%)
Prior hospitalizations	
Previously hospitalized (n, %)	1 (1.9%)
Not previously hospitalized (n, %)	53 (98.1%)
Therapy type	
Individual psychotherapy (n, %)	48 (88.9%)
Group psychotherapy (n, %)	6 (11.1%)
Total time in research (mean, SD)	153.37 (87.51)

2.2 | Measures

2.2.1 | Primary process and outcome measures[1]

Orbach & Mikulincer Mental Pain Scale (OMMP; Orbach et al., 2003)
A 45 items self-rating tool aimed at measuring MP intensity. The scale utilizes a 5-point Likert scale ranging from 1 (*not at all*) to 5 (*very strongly*), and was found to reflect nine factors: (a) irreversibility, (b) loss of control, (c) narcissistic wounds, (d) emotional flooding, (e) freezing, (f) self-estrangement, (g) confusion, (h) emptiness, and (i) social distancing. As factor 9 previously presented low reliability (Levi-Belz et al., 2018), this factor was omitted in our analyses. Higher values on each scale reflect stronger MP. Cronbach's α reliability coefficient for the eight OMPP scale factors in the current study ranged from .74 to .91. Cronbach's α coefficients for the total scale was .97. The OMMP was utilized as a measure moderating therapeutic outcome changes, and therefore was delivered at baseline.

Mental Pain Tolerance Scale (MPTS; Orbach et al., 2004)
This is a 20-item self-rating measure that uses 5-point Likert scales, with higher scores indicating greater tolerance for MP. This measure has demonstrated good psychometric properties and, following a factor analysis, yielded three subscales: (a) surfeit of pain, (b) coping with pain, and (c) containing of pain (Orbach et al., 2004). Cronbach's α coefficients for MPTS factors in this study ranged from .75 to .86. Cronbach's α coefficients for the total scale was .86.

The Outcome Questionnaire-45 (OQ-45; Lambert et al., 1996)
A self-report measure designed to assess patient outcomes during the course of therapy. It has 45 items which assess three primary dimensions: (a) symptom distress (e.g., anxiety and depression, "I feel blue"), (b) interpersonal relationships (e.g., "I feel lonely"), and (c) social role performance (e.g., "I have too many disagreements at work/school"). The scale is widely used and has been shown to have good internal consistency (0.93), 3-week test–retest reliability (r = .84), and concurrent validity (Snell et al., 2001). The α coefficient of the OQ-45 in the current sample indicated high internal reliability (Cronbach's α = .93).

The Session Evaluation Questionnaire (SEQ; Stiles & Snow, 1984)
The SEQ is one of the most broadly used measures of session climate, assessing dimensions of depth, smoothness, positivity, and arousal. It consists of bipolar adjective scales presented in a 7-point semantic differential format, separated into two sections. The first section of the measure is prefaced by the phrase, "This session was…", and the second section is prefaced by the phrase, "Right now I feel…". Previous research has revealed α ranging from .78 to .93 for these four SEQ subscales (Ackerman et al., 2000). In the current study, we chose the *smoothness* dimension as an indicator of the session climate, based on previous studies reporting its association with therapy outcomes (Muran et al., 2009). Cronbach's α coefficient for the smoothness scale in this study was .88.

2.3 | Procedure

The study was approved by the institutional review board (IRB) of the psychiatric hospital conducting the study. Patients who were allocated to psychotherapy during an intake meeting were approached by a study coordinator after the intake and were informed about the study objectives and design. The intake was conducted by an expert senior psychiatrist and additional staff members, such as psychologists or social workers while utilizing an unstructured clinical interview. Following this interview and a staff discussion, psychiatric diagnoses are assigned by the senior expert psychiatrist, using the diagnostic criteria of the DSM-V (American Psychiatric Association, 2013). During intake, patients are routinely evaluated with the goal of assessing their eligibility to participate in therapy. Patients agreeing to participate signed informed consent and then completed an assessment comprising mental

pain intensity (OMMP), MP tolerance (MPTS), the OQ-45, and the SEQ. Posttreatment assessments included the OQ-45 and the SEQ. Completion of the study protocol was defined as either the end of the therapy or the end of the 6-month period dating from the beginning of the study.

2.4 | Statistical strategy

Data were initially inspected for violations of assumptions of normality or the existence of outliers. No violations of normality were detected, and no outliers were removed. The proportion of variance explained by therapists and patients was calculated using the intraclass correlation coefficient (ICC). To assess the effect of MP on psychotherapy outcome and process while controlling for potential therapist effects, multi-level models (MLM) were fitted for each measure separately, with patients nested within therapists, and pre- and post- measurements repeated within patient. MP intensity and tolerance were entered to Level 2 as a moderating continuous variable. Simple slope analyses to probe interaction effects utilized a median split of the moderating variables. The 3-level models were based on the following equations:

Level-1 Model:

$$y_{tij} = \pi_{0ij} + \pi_{1ij} \times Phase_{tij} + e_{tij}$$

$$e_{tij} \sim N(0, \sigma^2)$$

Level-2 Model:

$$\pi_{0ij} = \beta_{00j} + \beta_{01j} \times Mentalpain_{ij} + r_{0ij}$$

$$\pi_{1ij} = \beta_{10j} + \beta_{11j} \times Mentalpain_{ij} + r_{1ij}$$

$$\begin{pmatrix} r_{0ij} \\ r_{1ij} \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \tau_{\pi 00} & \\ \tau_{\pi 01} & \tau_{\pi 11} \end{pmatrix} \right]$$

Level-3 Model:

$$\beta_{00j} = \gamma_{000} + u_{0j}$$

$$\beta_{01j} = \gamma_{010}$$

$$\beta_{10j} = \gamma_{100}$$

$$\beta_{11j} = \gamma_{110}$$

$$\begin{pmatrix} u_{0i} \\ u_{1i} \end{pmatrix} \sim N \left[\begin{pmatrix} 0 \\ 0 \end{pmatrix}, \begin{pmatrix} \tau_{\beta 00} & \\ 0 & \tau_{\beta 11} \end{pmatrix} \right]$$

where y = OQ-45, SEQ; *Phase*: pretreatment/posttreatment; *Mental pain*: Mental pain intensity/tolerance (continuous variable).

To evaluate the predictive effect of MP intensity and tolerance, the effect of MP intensity and tolerance was added as a patient-level fixed effect. Appropriate covariance structures were analytically determined based on deviance tests as well as on model fit indices (Verbeke & Molenberghs, 1997). To control for the varying treatment lengths across patients, we first fitted all models while controlling for "time in research," a variable assessing the overall time of

patients' engagement in psychotherapy, from pretreatment to posttreatment. Analyses were then reconducted without this covariate, and models were compared with assess differences in findings. No significant differences in the pattern of results were detected. Thus, for the sake of simplicity, we report here the results of the models without "time in research" as a covariate. To account for the association between baseline symptom severity and changes in outcome and process measures, we fitted an unstructured covariance matrix at Level 2, which provides estimates of the variances of the intercepts and slopes as well as the covariance between intercepts and slopes. Sensitivity and power analyses were conducted using G-power software and Monte Carlo simulations (Bolger & Laurenceau, 2013; Lane & Hennes, 2018). Statistical analyses were performed using package "nlme" version 3.1-148 in R version 3.6.3 and the Statistical Package for the Social Sciences (SPSS) v.25 (IBM Corp.).

3 | RESULTS

3.1 | MP as a predictor of treatment outcome and process

Table 2 reports the estimated fixed effects of each model, including pretreatment levels of the outcome/process measures, the effect of time (overall change in outcome/process measures from pretreatment to posttreatment), the interaction between MP and process/outcome measures at pretreatment (the association between MP and pretreatment levels of the outcome/process measure), and the MP by time interaction effect (the effect of MP on changes in outcome/process measures from pretreatment to posttreatment).

Unconditional models showed that 12% of the variance in OQ-45 was attributed to differences among therapists (ICC = 0.12, $p = .40$), while 51% of the variance was attributed to differences among patients (ICC = 0.51, $p < .01$). A significant interaction effect was found in the OQ-45 measure, $b = -7.25$, $t(45) = -2.13$, $p < .05$, suggesting that higher levels of MP intensity predicted larger reductions in distress during treatment. Follow-up analyses showed that individuals with high MP intensity showed significant reductions in distress from pretreatment to posttreatment, $b = -14.60$, $t(45) = -4.16$, $p < .001$, while no significant reductions were observed in individuals with low MP intensity, $b = 0.23$, $t(45) = 0.05$, $p = .95$. No significant interaction effect was observed for MP tolerance, $b = 5.44$, $t(42) = 0.54$, $p = .58$.

In the SEQ, unconditional models showed that 29% of the variance in SEQ was attributed to differences among therapists (ICC = 0.29, $p = .28$), yet differences between patients were too small to be estimated. A significant interaction effect was detected for MP intensity, $b = 1.31$, $t(17) = 2.66$, $p < .05$. Follow-up analyses showed that patients with low MP intensity exhibited a significant reduction in the SEQ smoothness score, $b = -1.92$, $t(18) = -2.71$, $p < .05$, while no such effect was detected among high MP intensity patients, $b = -0.10$, $t(18) = -0.25$,

TABLE 2 Estimated fixed effects and confidence intervals (CIs) for multilevel modeling of mental pain and mental pain tolerance

Outcome	Parameters	Mental pain		Mental pain tolerance	
		Estimates (95% CI)	p	Estimates (95% CI)	p
OQ-45	Pretreatment score (γ_{000})	76.35 (70.39, 82.31)	.000	77.68 (70.29, 85.07)	.000
	Prepost change (γ_{100})	−9.57 (−15.01, −4.13)	.000	−10.39 (−15.81, −4.97)	.000
	Mental pain and pretreatment scores (γ_{010})	20.81 (14.46, 27.15)	.000	−28.64 (−45.59, −11.69)	.001
	Group differences in prepost change (γ_{110})	**−7.25 (−14.09, −0.40)**	**.038**	5.42 (−14.25, 25.10)	.581
SEQ	Pretreatment score (γ_{000})	3.28 (2.38, 4.19)	.000	3.38 (2.73, 4.03)	.000
	Prepost change (γ_{100})	−1.19 (−2.07, −0.32)	.010	−0.71 (−1.50, 0.07)	.071
	Mental pain and pretreatment scores (γ_{010})	−0.49 (−1.32, 0.32)	.221	2.45 (0.59, 4.31)	.013
	Group differences in prepost change (γ_{110})	**1.31 (0.27, 2.34)**	**.016**	**−2.48 (−4.73, −0.24)**	**.032**

$p = .80$. Furthermore, a significant interaction effect was found for the SEQ and MP tolerance, $b = −2.48$, $t(16) = −2.34$, $p < .05$, indicating that individuals with high MP tolerance showed a significant reduction in the SEQ, $b = −1.79$, $t(17) = −2.73$, $p < .05$, while no such effect was detected for individuals with low MP tolerance, $b = 0.03$, $t(17) = 0.08$, $p = .93$. A full list of the estimated fixed and random effects, as well as the pretreatment score and prepost change correlations for MP intensity and tolerance, can be obtained from the authors.

Given the moderate sample size, statistical analyses were complemented with an estimation of the statistical power using Monte Carlo simulations (Lane & Hennes, 2018). Parameter estimates derived from the actual model and fitted to the current sample served as the hypothesized population model. One thousand random replications were generated and the percent of significant effects constituted the estimated power. The MP × outcome interaction effects were adjusted until a power of ~0.80 was reached. Power for the interaction effects reached adequate levels at $r = .45$ (moderate effect) for both MP intensity and tolerance as predictors of OQ-45; $r = .60$ (large effect) for MP intensity as a predictor of SEQ; and $r = .75$ (large effect) for MP tolerance as a predictor of SEQ.

Because MLM in moderate samples may be prone to unstable estimates, sensitivity analyses were further performed to evaluate the robustness and level of replicability of the findings. Bivariate Pearson's correlations were calculated between MP intensity/MP tolerance and prechanges to postchanges in outcome/process measures. Prechanges to postchanges were calculated as difference scores, which were found to be highly correlated with the slopes obtained in the MLM ($r = .99$, $p < .01$). A significant Pearson's correlation between baseline MP intensity and changes in distress ($r = −.29$, $p = .04$) was found, indicating that higher MP intensity is associated with greater reductions in distress. No significant association was found for MP tolerance and levels of distress. Changes in session smoothness positively and significantly correlated with baseline MP intensity ($r = .50$, $p = .02$), indicating that lower MP intensity is associated with reductions in session smoothness, and were also significantly and negatively associated with MP tolerance ($r = −.51$, $p = .02$), indicating that high tolerance is associated with a greater reduction in session smoothness. Thus, the correlation analyses fully replicated the findings of the MLM models. Furthermore, these analyses had slightly higher power than the MLM models: The sample of completers ($n = 48$) was sufficient to detect an effect size of $r = .38$ for the OQ-45 and $r = .53$ for the SEQ with a power of .80. Taken together, while the sample size was only powered to detect moderate-large effects using MLM, the same findings emerged even with a simplified modeling approach, thus providing converging evidence for the robustness of our findings.

4 | DISCUSSION

The results of the current study suggest that high baseline MP intensity is associated with significant improvement in distress. These results are in contrast to the findings of Mee et al. (2019), which reported that high baseline MP intensity predicted higher rates of dropout and missed sessions. Nonetheless, although therapy dropout can be linked to reduced therapeutic gains, research assessing the association between dropout and therapy outcomes has not produced conclusive results (Reich & Berman, 2020). Therefore, it is possible that high MP intensity is associated with dropout but not with therapeutic outcomes, as suggested by Mee et al. (2019). On the contrary, the significant therapeutic gains among patients with high MP intensity correspond with the pattern of findings reported in studies assessing the predictive effect of baseline symptomatic levels, which indicate that patients with higher symptom severity profit more from psychotherapy (Falkenström et al., 2014). Thus, one potential explanation to account for these findings is that baseline MP affects therapy outcome in a similar manner as baseline symptom severity.

One of the potential trajectories to associate MP to therapy outcomes is related to patients' motivation for change. Myers et al. (2016) found a correlation between symptom severity and the recognition that change was needed among patients with substance abuse. Moreover, Boswell et al. (2012) found that readiness for change moderated the relationship between initial symptom severity and symptomatic change in patients suffering from anxiety disorders and participating in cognitive behavioral therapy (Boswell et al., 2012). Accordingly, high initial MP intensity may be associated

with higher motivation, less ambivalence towards therapy, and more readiness to engage in the therapeutic process, which in turn may affect the therapeutic outcome. Such potential mediating effects should be evaluated in future studies.

Individuals with low MP and high tolerance exhibited no improvement in distress, and further showed significant deterioration in therapy smoothness. These findings indicate that low MP has the potential to reduce therapeutic effectiveness and to further be associated with discomfort during the therapeutic sessions. Uckelstam et al. (2019) examined whether the classification of patients on the basis of their initial symptom distress profiles predicted treatment response. They found that patients with low initial distress and low deviations among problem areas fitted a profile of a very slow change rate. They suggested that such a profile may be indicative of denial or distancing of psychological suffering, and further proposed that such a profile might result in reduced motivation for therapy. Thus, the results of the current study might suggest that patients with low MP and high tolerance tend to distance themselves from emotionally charged content, feel less comfortable with the therapeutic process, and subsequently profit less from therapy.

The results of this study have several clinical and empirical implications. First, to the best of our knowledge, this is the first study to examine the predictive role of MP intensity and tolerance in the course and outcome of psychotherapy. As such, the current study adds knowledge regarding the potential moderators of change in psychotherapy, while addressing the question of what works for whom (Zilcha-Mano, 2019). Furthermore, the study's focus on MP, as opposed to symptom distress, allows for a multifaceted picture of the association between baseline distress and therapy process and outcome, by taking into account several facets such as irreversibility of the pain, narcissistic wounds, self-estrangement, and a sense of inner emptiness, which are not considered by the usual distress measures. Future studies should further focus on these elements so as to establish their relative role in the therapeutic process. Clinically, incorporating the assessment of MP in treatment may help clinicians attain an early identification of how a particular type of patient is expected to respond to treatment as well as to anticipate potential challenges that might arise during the therapeutic sessions. Such knowledge may in turn affect clinicians' therapeutic responses and aid in clinical decision-making.

Several limitations should be acknowledged. Although no significant differences were detected between the intent-to-treat sample and those who did not start therapy, the possibility that the sample represents a specific population of patients cannot be ruled out. Furthermore, the study population comprised a heterogeneous set of diagnoses, with some diagnoses previously demonstrating better evidence of a therapeutic response compared to others (see Caldiroli et al., 2020 for a critical review). Thus, additional studies are needed to evaluate the generalizability of our findings in more homogeneous and diagnosis-specific samples. Although all therapists participating in this study were either undergoing training in psychodynamic psychotherapy, and completed postgraduate psychotherapy training and/or clinical internship, levels of training in this study largely varied. This variation is a result of the naturalistic nature of the study, which demanded a nonsystematic selection of therapists. Although we controlled for the variations in the level of competency through the estimation of therapist variations in the MLM employed, this limitation should be taken into account. The current study reports of a decrease in distress ranging from 9.57 to 10.39 points, which is comparable with previous studies assessing the effect of psychotherapy while utilizing a control group (Ong et al., 2019). Furthermore, the employed analyses accounted for the association between baseline levels of distress and the change during treatment. Conceptually, such an approach should also account for the possibility of regression to the mean (patients with greater baseline severity showing larger reductions simply because of being randomly extreme at pretreatment). Nonetheless, as the current study did not include a control group, the decrease in distress cannot be directly linked to the psychotherapeutic process and a regression to the mean cannot be ruled out. Finally, the results of the power analyses indicated that our sample was only powered to detect moderate-large effects using MLM. Nonetheless, sensitivity analyses showed that our findings held even when using a simpler, and better powered, data analytic approach. These findings demonstrate the robustness of our findings to various data analytic approaches and strengthen their validity. That said, additional studies with larger sample sizes are needed so as to draw definite conclusions. Notwithstanding these limitations, our findings highlight the role of initial MP levels in moderating psychotherapy outcome among heterogeneous disorders, adding to the accumulating literature showing that psychotherapy is not "one size fits all."

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

ETHICS STATEMENT

The study was approved by the Institutional Review Board (IRB) of the Shalvata Mental Health Center (Approval number: 0016-14-SHA).

ENDNOTE

[1] Statistical analyses were also performed on the secondary process and outcome measures, which included measures of the working alliance and well-being. Results of these analyses can be obtained from the corresponding author.

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