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HELPLESSNESS AS A MECHANISM OF CHANGE IN CBT FOR DEPRESSION: DISAGGREGATING BETWEEN AND WITHIN PATIENT EFFECTS

ABSTRACT

This study is a secondary data analysis of a randomized control trial originally collected by grosse Holtforth et al. (2019), which examined the efficacy of Cognitive Behavioral Therapy (CBT) vs ECBT-R (Exposure-Based Cognitive Therapy-Revised) in treating depression. This study examines helplessness as a mechanism of change in CBT) for depression, focusing on distinguishing between stable, trait-like helplessness and dynamic, session-specific fluctuations. Through multilevel modeling, this research disaggregates between-patient effects (average helplessness levels) and within-patient effects (session-specific changes) on depressive symptoms, measured by WHO-5 well-being scores. The sample included 138 participants primarily diagnosed with chronic and recurrent depressive conditions.The results indicate that lower levels of trait-like helplessness are associated with reduced depression severity across treatment. Additionally, reductions in state-like helplessness during therapy sessions predict immediate improvements in depressive symptoms. These findings highlight the dynamic nature of helplessness and its critical role in both short-term and long-term therapeutic outcomes. The study suggests that tailored interventions targeting both stable and fluctuating elements of helplessness could enhance CBT's effectiveness in treating depression. Future research should explore how these patterns contribute to relapse prevention and sustained recovery.

Keywords: *Helplessness, Cognitive Behavioral Therapy (CBT), Depression, Mechanism of Change, Trait-like, State-Like, Relapse Prevention, HREM, WHO-5*

Helplessness as a Mechanism of Change in CBT for Depression: Disaggregating Between and Within Patient Effects

The COVID-19 pandemic has had far-reaching effects on global mental health, with the World Health Organization reporting a 25% increase in anxiety and depression cases during the pandemic's first year (World Health Organization, 2022). Depression, in particular, has seen a marked rise. Often referred to as Major Depressive Disorder (MDD), depression is a common mental disorder that affects an estimated 5% of adults worldwide, roughly 280 million people (World Health Organization, 2023). The disorder is characterized by persistent feelings of sadness, hopelessness, and loss of interest in daily activities, which can last for weeks, months, or even years. These symptoms significantly impair an individual's ability to function in their personal, social, and professional lives. Women are disproportionately affected by depression compared to men, with approximately 6% of women experiencing depression compared to 4% of men (World Health Organization, 2023).

Depression is more than just an emotional challenge; it also leads to significant social and economic consequences. Globally, MDD is one of the leading causes of disability, contributing to reduced productivity, increased healthcare costs, and impaired relationships (Kessler et al., 2005; Greenberg et al., 2015). Furthermore, MDD poses a serious risk for suicidal thoughts and behaviors, making it a major factor in the more than 700,000 deaths by suicide each year (World Health Organization, 2023). Individuals with depression are up to five times more likely to attempt suicide over their lifetime (Bernal et al., 2007).

Despite the existence of effective treatments, such as cognitive-behavioral therapy (CBT), a significant number of individuals continue to experience recurrent depressive episodes or fail to achieve full remission (Beshai et al., 2011). This persistent and recurrent nature of depression highlights an important challenge: while therapies like CBT are successful in addressing immediate symptoms, they may not fully tackle the deeper, chronic components of the disorder, such as feelings of helplessness (Buckman et al., 2018), that not only sustains the condition but also hinders individuals from fully engaging with and benefiting from treatment (Hardeveld et al., 2010).

Helplessness has long been recognized as a central cognitive-emotional construct in the development and maintenance of depression (Beck, 1967). Martin Seligman's work in the 1960s laid the foundation for understanding how a perceived lack of control over life events

contributes to depressive symptoms (Seligman, 1974). His early experiments demonstrated that when animals were subjected to uncontrollable stressors, they developed passive resignation, ceasing to attempt to escape even when it became possible (Overmier & Seligman, 1967). This state of learned helplessness was later extended to human behavior, explaining the cognitive and emotional patterns seen in depression. According to Seligman's model, individuals who experience repeated failure or lack of control come to believe they are powerless to change their circumstances, leading to helplessness, hopelessness, and, ultimately, depression (Seligman, 1974).

Aaron Beck's cognitive theory of depression similarly emphasizes helplessness as a key factor. Beck (1967) proposed that individuals with depression tend to hold negative views of themselves, the world, and the future, a framework he termed the *Cognitive Triad.* These negative views, reinforced by cognitive distortions, perpetuate feelings of helplessness and hopelessness (Beck et al., 1979). For instance, individuals may believe their efforts to improve their circumstances are futile, fostering a sense of helplessness, while the expectation that the future will not improve leads to hopelessness. These maladaptive thinking patterns prevent individuals from engaging in behaviors that could improve their situation, maintaining the cycle of depression.

Further developments by Abramson, Seligman, and Teasdale (1978) introduced the concept of attributional style as a mediator between life events and depressive symptoms. According to this reformulation, individuals who attribute negative outcomes to internal, stable, and global factors are more prone to depression. This style of thinking increases vulnerability by fostering the belief that failure is due to inherent flaws, while those who attribute negative outcomes to external, unstable, or specific causes tend to be more resilient (Abramson et al., 1978). This *pessimistic explanatory style* (Alloy et al., 1982), highlights how repeated failures can lead to feelings of helplessness across domains of life. Such cognitive patterns not only shape perceptions of specific failures but also contribute to the onset and maintenance of clinical depression by promoting motivational deficits and a cycle of passivity and resignation (Peterson et al., 1993; Brandstätter & Bernecker, 2021).

Early models of learned helplessness emphasized cognitive distortions, but more recent research explores helplessness as both a cognitive and emotional phenomenon (Pryce et al., 2011). Helplessness not only distorts beliefs about one's ability to influence outcomes

but also triggers intense emotions like despair and frustration. This dual nature suggests that traditional CBT, while effective in challenging irrational beliefs, may need to be supplemented with emotional regulation strategies to address the emotional aspects of helplessness (Gross, 1998; Pryce et al., 2011).

However, the understanding of helplessness evolved when Maier and Seligman (2016) revisited the theory from a neuroscience perspective. They argued that the passivity seen in learned helplessness is not learned but rather a default response to uncontrollable stress. The brain's ability to detect and respond to control involves key neural structures, such as the dorsal raphe nucleus and the medial prefrontal cortex. When individuals perceive control, the medial prefrontal cortex inhibits the hyperactive dorsal raphe nucleus, enabling proactive behavior. This reframes the theory, suggesting that learning to perceive control is essential for preventing and treating depression. Enhancing perceptions of control can reduce stress and build long-term resilience (Maier & Seligman, 2016). These findings support the efficacy of treatments like CBT, which focus on restoring a sense of mastery and control (Baratta et al., 2023; Gómez-Penedo et al., 2023).

Recently, Lifshin et al. (2020) introduced the concept of *motivated helplessness* to understand why individuals engage in this cycle. Unlike learned helplessness, motivated helplessness may act as a coping mechanism by temporarily reducing emotional distress. In overwhelming situations, individuals may disengage, thinking they cannot effect change, allowing them to avoid immediate emotional pain, such as fear or guilt. However, this avoidance strategy can also have long-term negative consequences. Over time, this disengagement may reinforce feelings of powerlessness and hopelessness, contributing to the worsening of depressive symptoms.

Mechanisms of Change in Psychotherapy

This deeper understanding of helplessness, both in its learned and motivated forms, points to the need to address these underlying factors in treating depression. To improve how therapy works, it's important to look at how these changes happen during treatment. This leads to the concept of mechanisms of change. Mechanisms of change in psychotherapy refer to the processes through which therapeutic interventions bring about improvements in symptoms or functioning (Kazdin, 2007). Brian D. Doss (2004) explained the importance of distinguishing between *mechanisms of change*—the internal shifts in a patient over time—and

processes of change, the therapeutic methods that drive these shifts. He argued that understanding the mechanisms, such as cognitive and emotional changes, should come before identifying the processes that facilitate them (Doss, 2004). Identifying these mechanisms is key for improving the efficacy of psychological treatments, as it allows for a more precise understanding of how and why therapy works (Kazdin, 2007).

Helplessness has been suggested as a potential mechanism of change in CBT, given its role in the cognitive and emotional processes that contribute to depression (Beck et al., 1979). By encouraging patients to reframe their negative thinking and engage in problem-solving activities, CBT seeks to restore a sense of control and self-efficacy, which can help alleviate depressive symptoms (Clark, 2013). However, recent advancements within CBT have aimed to address critiques that traditional CBT may fall short of fully tackling chronic helplessness (Brandstätter & Bernecker, 2022).

Some evidence suggests that early improvements in therapy may not solely result from cognitive techniques but also from reductions in helplessness (Hofmann et al., 2012). Nonspecific factors, such as the therapeutic relationship and understanding of the treatment approach, might help decrease feelings of helplessness, promoting a greater sense of control early in treatment (Ilardi & Craighead, 1994). These findings suggest that addressing helplessness could play a crucial role in improving outcomes in depression treatment. However, more research is needed to confirm its function as a mechanism of change since most of the existing research primarily examines trait-like helplessness—the stable aspects of helplessness that persist over time—while state-like helplessness, or the day-to-day and session-to-session fluctuations within therapy, remains less explored. These momentary shifts could provide insight into immediate therapeutic effects as they capture real-time changes in patient's sense of control and agency during therapy (Zilcha-Mano et al., 2021).

Need for Disaggregating Helplessness: Trait-Like and State-Like Components

Curran and Bauer's (2010) and Zilcha-Mano et al. (2021) work on disaggregating within-person and between-person effects provides essential methodological support for this approach. Their framework suggested that traditional models, which often overlook these differences, lead to misinterpretation of within-person changes. This is because between-person effects (stable traits) can overshadow the unique dynamics occurring within individuals over time (state effects), especially in therapy, where state-like fluctuations might

contribute directly to symptom relief. This results in an ecological fallacy—where trends observed at the group level are mistakenly applied to individuals (Curran & Bauer, 2010). While individuals who generally experience lower levels of helplessness could often report lower overall depression severity—a pattern observed across patients—this broader trend does not necessarily imply that reducing helplessness within a single session will yield immediate symptom relief for a particular individual. Instead, the relationship between helplessness and symptom improvement may differ when examined within the context of each patient's unique session-to-session experiences This conflation can lead to a limited understanding of how therapeutic change unfolds in real time (Curran & Bauer, 2010; Falkenström et al., 2017; Zilcha-Mano, 2021).

To address these issues, it has been spoken favorably for multilevel growth models that analyze both within-person and between-person effects as means to allow dynamic and stable inferences during treatment (Curran & Bauer, 2010; Falkenström et al., 2017; Zilcha-Mano, 2021). Moreover, they recommend person-mean centering as a statistical method that calculates an individual's average helplessness score across sessions (their trait level) and then subtracts it from each session's score to capture session-specific deviations (their state level). This allows researchers to clearly distinguish how within-session changes in helplessness relate to immediate symptom improvement and how overall levels of helplessness predict long-term therapy outcomes (Curran & Bauer, 2010).

Aims and Rationale of The Study

This study seeks to expand on helplessness as a mechanism of change in CBT for depression, distinguishing between stable, trait-like helplessness and session-specific fluctuations. This disaggregation allows for a nuanced examination of how both stable, person-level tendencies and session-specific variations contribute uniquely to depressive symptoms. By using these distinctions and a person-mean centering approach, the study not only improves methodological rigor but also aligns with the broader literature's emphasis on longitudinal designs that prioritize individual-level data over aggregate interpretations (Curran & Bauer, 2010; Zilcha-Mano et al., 2021).

Recognizing this trait-level helplessness could help therapists identify patients who may require a more intensive or sustained intervention, possibly integrating methods beyond standard CBT—such as mindfulness, emotional processing, or self-compassion practices—to

address this longstanding pattern (Gaudiano, 2008; Gross, 1998; Han & Kim, 2023), supporting the call of more individualized treatments plans (Deisenhofer et al., 2023; Gómez Penedo et al., 2023). On the other hand, the session-to-session (state-like) fluctuations in helplessness highlight the importance of flexibility in therapeutic interventions (Owen & Hilsenroth, 2014; Vîslă et al., 2018). Additionally, the study could highlight the value of innovative self-monitoring tools to address residual helplessness after therapy ends, helping to sustain improvements and prevent relapse (Bakker & Rickard, 2017). By advancing the understanding of helplessness as a mechanism of change, this research may lead to more precise, targeted, and effective interventions for depression.

This study aims to answer the question: Does helplessness serve as a significant mechanism of change in CBT for depression? The hypotheses are as follow:

Hypothesis 1 (Between-Patient Effects)*:* Lower overall levels of helplessness (trait-like) will be associated with lower overall levels of depression throughout therapy.

Hypothesis 2 (Within-Patient Effects)*:* Reductions in helplessness within therapy sessions (state-like) will predict immediate improvements in depressive symptoms. Patients who experience decreases in helplessness during individual sessions will show concurrent reductions in depressive symptoms.

By using advanced statistical techniques and addressing prior methodological limitations, this study aims to contribute to the growing body of literature on mechanisms of change in depression treatment, ultimately aiming to improve long-term outcomes and reduce relapse rates.

Method

Design

The original study from grosse Holtforth et al. (2019) used a randomized controlled trial (RCT) design to evaluate the efficacy of CBT-based therapies in treating depression. In the original study, the treatment groups were divided between two CBT treatments: a standard CBT and ECBT-R (Exposure-Based Cognitive Therapy-Revised), a German adaptation that integrates cognitive therapy with exposure and emotion-focused interventions, specifically designed to enhance emotional processing in treating depression (grosse Holtforth & Krieger, 2013; Hayes et al., 2022). Given that both treatments are different variations of CBT and that

the original study found the added emotional component to be equally effective as the standard one, this study will consider the complete sample without divisions (grosse Holtforth et al., 2019).

Participants

Participants were drawn from a cohort used in the grosse Holtforth et al. (2019) study, which included adults diagnosed with major depressive disorder according to DSM-IV-TR criteria. Inclusion criteria required participants to be aged between 18 to 65 years and be able to provide informed consent. Exclusion criteria included a diagnosis of psychotic disorders, bipolar disorder, or certain personality disorders; substance dependence; acute suicidality; mood disorders due to medical conditions; and concurrent psychological treatment for depression (grosse Holtforth et al., 2019). Patients who were on stable doses of antidepressants for at least a month were suitable. Individuals with psychotic or mood disorders due to medical conditions were excluded and provided with alternative therapeutic options.

Sample Size

The initial sample for this study included 140 patients from a psychotherapeutic outpatient clinic at a Swiss university, each scheduled for up to 22 CBT sessions. After filtering for at least two therapy sessions and complete demographic data, the final sample size was 138 patients. The sample size of 138 ensures sufficient power to detect medium effect sizes ($d = 0.5$) with 80% power. This aligns with previous studies, in which they recommend sample sizes of at least 64 participants for detecting medium effect sizes (Cohen,1992; Faul et al., 2007).

As shown in Table 1, the majority of participants (68.8%) did not report a history of chronic depression, while 29.7% did. Recurrent depressive episodes were relatively common, with 73.2% of the sample reporting them. The most frequently diagnosed condition was moderate recurrent depression (32.6%), followed by mild recurrent depression (26.1%) and severe recurrent depression (13.8%). Additionally, 12.3% of participants experienced moderate single episodes, 10.9% had mild single episodes, and 3.6% had severe single episodes of depression. A small fraction (0.7%) was diagnosed with psychotic depression. Overall, the sample presents a clinically diverse group, predominantly characterized by chronic and recurrent depressive conditions with varying levels of severity. Participants

ranged in age from 18 to 65 years, with an average age of approximately 41 years (*SD* = 12.05). In terms of marital status, the sample was diverse, with most participants either single (39.9%) or married (39.1%), and a smaller proportion identified as divorced (15.2%). Educational attainment varied, with nearly two-fifths of the sample holding an advanced degree (39.1%), followed closely by those with a high school education (37.7%). A smaller portion had completed college education (17.4%), and only three individuals (2.2%) reported no formal education (see Table 2).

Table 1

Participants' Depression Level at Baseline

	N	*%*
Chronic Depression	41	29.7
Recurrent Depression	101	73.2
Mild	26	26.1
Moderate	33	32.6
Severe	14	13.8
Single Episode Depression	38	27.8
Mild	11	10.9
Moderate	12	12.3
Severe	4	3.6
Psychotic Depression	1	0.7

Table 2

Participants' Demographics at Baseline

	N	*M*	*SD*	*%*
Age	138	40.71	11.42	
Gender				
Male	60			43.48
Female	78			56.52
Marital Status				
Single	60			43.48
Married	62			44.93
Divorced	16			11.59
Education				
None	6			4.35
High School	49			35.51
College	25			18.12
Advanced Degree	58			42.03

Note. ***M*** = Mean; ***SD*** = Standard Deviation. The initial trial included 149 participants, randomized into two treatment groups (grosse Holtforth et al., 2019). However, for this study analysis, only those who attended at least two times were included, resulting in a final sample of 138 participants.

Therapists

The study involved 25 master's-level psychologists recruited from CBT training institutes, who were undergoing a 4-year postgraduate training. Each therapist had already received specialized training in cognitive techniques (8 hours) and CBT for depression (16 hours). This training was provided by experienced clinicians and experts. Among the therapists, 22 were women and three were men, all Caucasian, with an average age of 31.4 years (*SD* = 5.14), ranging from 25 to 45 years. One therapist had completed postgraduate

therapy training, 14 were in their first two years of training and 10 were in their last two. Averagely, each therapist treated 5.8 patients (*SD* = 2.8; range = 1 to 13 patients). A crossed-therapist design was used to mitigate therapist effects, and after the trial, therapists rated their adherence to each condition using a Likert scale.

Treatments

The treatment protocol included up to 22 weekly CBT sessions, each lasting approximately 50 minutes. The standardized protocol emphasized cognitive restructuring and behavioral techniques aimed at reducing depressive symptoms. Treatment adherence and protocol fidelity were monitored through regular supervision meetings and the use of intervention checklists completed by therapists. Small-group supervision meetings were held biweekly, and session recordings were reviewed by supervisors to ensure adherence. Treatment adherence was also evaluated by two external observers blind to treatment conditions using session recordings. Table 3 shows the frequency of completed sessions.

Table 3

Frequency of Completed Therapy Sessions

Session amount	%
1-5	18.1
6-10	25.4
11-15	29.0
16-20	15.9
21-22	11.6

Note. The table displays the distribution of completed therapy sessions across participants, grouped by session ranges. Percentages reflect the proportion of participants within each range.

Measures

Helplessness: To evaluate the patient's perception of helplessness, a pre-session report was used. Patients were asked to rate how often they felt hopeless or helpless since their last therapy session on a scale from 1 (did not apply at all) to 5 (completely applicable). This scale helped measure the patient's emotional state over time, providing insights into the effectiveness of the therapy and allowing therapists to adjust interventions accordingly. Despite its lower internal validity, single-item measures showed significant predictive validity in intensive longitudinal designs, occasionally outperforming multiple-item measures (Song et al., 2022). Although multiple-item measures are generally more effective, their minimal advantages suggest that single-item measures are a valid option for research needing simplicity and speed, particularly in intensive longitudinal studies where frequent assessments could burden participants (Fisher & Boswell, 2016).

Depression Severity: In this study, the German version of the *World Health Organization Well-Being Index* (WHO-5; World Health Organization, 1998) was chosen as the main assessment of depressive severity. Despite the original study using the Beck Depression Inventory-II (BDI-II; (A. T. Beck et al., 1996; Wintjen & Petermann, 2010) as an outcome measure, the WHO-5 was in line with the present investigation, as it was the only in the trial assessed session-by-session. The WHO-5 is a self-report instrument that includes five items rated on a Likert scale from 5 ("all the time") to 1 ("at no time"), where higher scores suggest less severe depressive severity. Despite its primary focus on well-being, the WHO-5 has been demonstrated to reliably assess depressive severity in a concise, self-administered, and positively worded manner (Krieger et al., 2014; Omani-Samani et al., 2020). Once compared to those from the BDI-II, a more traditional and detailed measure of depression, it showed a moderate to large correlation (r = .63), affirming its validity as a measure of this disorder (Gómez Penedo et al., 2020; Primack, 2003). The high reliability of the WHO-5 observed in the current sample, indicated by its between-patient standardized alpha of .90 and a within-patient standardized alpha of .94, suggests that it is a dependable tool for assessing changes in depression across different patients and within the same patient over time concisely (Gomez Penedo et al., 2020). This is considered highly favorable for longitudinal analysis (grosse Holtforth et al., 2019).

Procedure

Participants were recruited through different media platforms, internet postings, and healthcare professional referrals. Out of 631 initial inquiries, 140 participants were finally enrolled in the study over a 26-month period, from January 2010 to February 2012, following a structured telephone screening and a face-to-face diagnostic interview. The screening required participants to score at least 14 on the German version of the BDI-II (BDI-II; Wintjen & Petermann, 2010) and no more than 13 on the WHO-5 (WHO-5; World Health Organization, 1998).

Therapists were recruited from CBT training institutes and received training in specific techniques. After confirming eligibility, participants were introduced to the study procedures and provided informed consent by institutional ethical guidelines, ensuring participant welfare and data confidentiality. The WHO-5 was completed before and after each therapy session, and ratings were not visible to the therapists. The study protocol was approved by the local ethics committee, with all participants providing informed consent and their data confidentiality maintained.

Statistical Analysis

To analyze the data, Multilevel Linear Modeling (MLM**)** was employed using R software, particularly the lme4 package, which is well-suited for hierarchical data where repeated measures are nested within individuals (Bates et al., 2015; Raudenbush & Bryk, 2002). Unlike traditional regression, MLM accounts for the dependency of repeated observations within individuals, which is essential in longitudinal studies to avoid biases that could arise if these repeated measures were treated as independent (Leyland & Groenewegen, 2020). Data completeness was ensured through routine checks at each session. Assumptions of MLM, including normality and homoscedasticity, were evaluated through residual diagnostics, and model fit was assessed using the Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC). Likelihood ratio tests were used for model comparisons to determine if the inclusion of specific predictors improved model fit. Statistical significance was set at $p < .05$.

As recommended by researchers in the field, the Hybrid Random Effect Model (HREM) differentiates within-patient changes (fluctuations in depression and helplessness across sessions) from between-patient differences (average differences among participants),

offering a detailed understanding of these mechanisms in therapy (Curran & Bauer, 2010; Falkenström et al., 2017; Zilcha-Mano, 2021). This analysis was structured as a two-level MLM, with Level 1 representing repeated measures (e.g., WHO-5 scores, helplessness ratings) across sessions within each patient, and Level 2 accounting for differences between patients. This study applied a grand-mean centering approach for BP helplessness to reflect stable, between-patient differences by subtracting the sample mean from each patient's average helplessness. For WP helplessness, person-mean centering was used, subtracting each individual's mean helplessness score from their session-specific scores. This distinction allows us to differentiate the enduring (BP) from the fluctuating (WP) effects of helplessness on depressive severity.

Model 1: Two-Level Fully-Unconditional Model

This model serves as a baseline for understanding how much variance in well-being scores (WHO-5) exists across individuals and across therapy sessions. It helps identify the natural variability of depressive symptoms without any predictors (e.g., time or helplessness levels). The equation for this level 1 model is:

$$WHO5_{ij} = u_{0j} + e_{ij}$$

In this equation, $WHO5_{ij}$ represents the well-being score (WHO-5) for patient *j* at session *i*. The term u_{0j} refers to the average WHO-5 score for patient *j* across all their sessions, which serves as the patient's baseline well-being score. The term e_{ij} represents the random error for each session, capturing any deviations in WHO-5 scores from the patient's average due to session-specific factors.

At Level 2, the model accounts for differences between patients (BP). The equation for this level is:

$$u_{0j} = \gamma_{00} + r_{0j}$$

Here, γ_{00} represents the overall average WHO-5 score across all patients, while r_{0j} accounts for individual differences in patients' average WHO-5 scores. Some patients may

begin therapy with higher or lower levels of well-being than others, and r_{0j} captures these differences between patients.

Model 2: Time as the Sole Predictor

This model examines the effect of time as the sole predictor of WHO-5 scores. The aim here is to determine whether patients' well-being improves (or worsens) over the course of therapy, based solely on the passage of time. The session variable was centered on the first session, allowing the intercept to represent the baseline well-being score at the start of therapy, facilitating a clearer view of the trajectory of change over time. Centering also improved model interpretability by reducing multicollinearity, ensuring that changes in WHO-5 scores could be attributed more directly to the session-to-session progression.

At Level 1, the model looks at how a patient's WHO-5 score changes over time. The equation for this level is:

$$WHO5_{ij} = u_{0j} + u_{1j\,x}(session_{ij}) + e_{ij}$$

In this equation, $WHO5_{ij}$ is the WHO-5 score for patient *j* at session *i*. The term u_{0j} refers to the initial WHO-5 score for patient *j*, which serves as the baseline well-being score at the start of therapy. The term $u_{1j} * session_{ij}$ captures the effect of time on WHO-5 scores, where u_{1j} represents the rate of change in WHO-5 scores over time for that individual patient, and $session_{ij}$ refers to the amount of time (or session number) for patient *j* at session *i*. The term e_{ij} is the error term that accounts for session-specific variability in WHO-5 scores that is not explained by time.

At Level 2, the model looks at between-patient differences in both initial WHO-5 scores and rates of change over time. The equations for this level are:

$$u_{0j} = \gamma_{00} + r_{0j}$$
$$u_{1j} = \gamma_{10} + r_{1j}$$

In these equations, γ_{00} represents the overall average initial WHO-5 score across all patients, while r_{0j} captures how each patient's initial WHO-5 score differs from the overall

average. Similarly, γ_{10} represents the average rate of change (within patient changes) in WHO-5 scores across all patients, showing whether, on average, patients improve or worsen over time. The term r_{1j} captures individual differences in the rate of change, accounting for the fact that not all patients improve (or worsen) at the same rate.

Model 3: Helplessness as a Predictor

This model focuses on the effect of helplessness on WHO-5 scores, without yet considering the influence of time. The objective is to understand how changes in helplessness, both within each patient and between different patients, affect well-being during therapy.

At Level 1, the model looks at how session-by-session changes in helplessness predict WHO-5 scores within each patient. The equation for this level is:

$$WHO5_{ij} = u_{0j} + u_{1j} * (Help\_WT_{ij}) + e_{ij}$$

In this equation, u_{0j} refers to the initial WHO-5 score for patient *j*, $Help_WT_{ij}$represents the session-specific helplessness score for patient *j* at session *i*. The term u_{1j} captures the within-patient effect of helplessness, showing how changes in helplessness from one session to the next predict changes in WHO-5 scores for the same patient. The term e_{ij} accounts for any session-specific variation not explained by helplessness.

At Level 2, the model examines how between-patient differences in average helplessness affect WHO-5 scores. The equations for this level are:

$$u_{0j} = \gamma_{00} + \gamma_{01} * (Help\_BT_j) + r_{0j}$$
$$u_{1j} = \gamma_{10} + r_{1j}$$

Here, $Help\_BT_j$ represents the average helplessness score for patient *j* across all sessions, capturing between-patient differences in helplessness. The term γ_{01} represents the between-patient effect of helplessness. The random effects r_{0j} and r_{1j} account for individual differences in both the starting point (initial WHO-5 score) and the effect of helplessness on

WHO-5 scores. This model allows us to understand how helplessness, both within and between patients, affects WHO-5 scores, independently of time.

Model 4: Sensitivity Analysis (Detrending)

The sensitivity model was constructed to test the robustness of the helplessness effects on well-being, with session count included as a time-varying covariate to control for natural improvements over therapy duration (Falkenström et al., 2017,2023). This approach aligns with recent recommendations in longitudinal modeling, which highlight that time trends if left unaddressed, can introduce confounding effects and potentially lead to biased conclusions about mechanisms of change models. Detrending helps ensure that observed changes in outcomes are not simply artifacts of general improvement over time but are attributable to specific mechanisms like helplessness (Falkenström et al., 2023). At Level 1, the model includes both helplessness and time as predictors of WHO-5 scores. The equation for this level is:

$$WHO5_{ij} = u_{0j} + u_{1j} * (Help\_WT_{ij}) + u_{2j} * (session_{ij}) + e_{ij}$$

In this equation, $Help\_WT_{ij}$ represents the session-specific helplessness score for patient *j* at session *i*, u_{0j} refers to the initial WHO-5 score for patient *j*, u_{1j} is the within-patient effect of helplessness. $session_{ij}$ is the time spent in therapy or the session number for patient *j* at session *i*, and u_{2j} represents the time effect. The term e_{ij} is the error term accounting for any unexplained session-specific variation in WHO-5 scores.

At Level 2, the model accounts for between-patient differences in both helplessness and the rate of change in WHO-5 scores. The equations for this level are:

$$u_{0j} = \gamma_{00} + \gamma_{01} * Help\_BT_j + r_{0j}$$
$$u_{1j} = \gamma_{10} + r_{1j}$$
$$u_{2j} = \gamma_{20}$$

At this level, $Help\_BT_j$ represents the average helplessness score for patient *j* across all sessions, capturing how helplessness differs between patients. The term γ_{01} represents the

between-patient effect of helplessness. γ_{20} represents the average time effect across all patients, indicating whether well-being generally improves or worsens with the passage of time, regardless of changes in helplessness. The random effects r_{0j} and r_{1j} account for individual differences in initial WHO-5 scores and in the effect of helplessness on WHO-5 scores, respectively.

Finally, a cross-level interaction model was employed to investigate whether the effect of within-session helplessness on depressive symptoms is moderated by overall helplessness. This model introduces an interaction term between BP and WP effects allowing for testing whether overall levels of helplessness moderate effects of session-specific helplessness on their depressive symptoms.

Results

This section presents the study's findings beginning with descriptive statistics for key variables, including helplessness and WHO-5 well-being scores. Following this, the results will be outlinedfrom each statistical model, starting with the unconditional model to establish baseline variability. We will then examine the time predictor model, hybrid random effects model, sensitivity model, and cross-level interaction model, each of which progressively deepens the analysis by testing the impact of time, trait-like helplessness, state-like helplessness, and the interaction between these factors on well-being. Each model's results will be contextualized with relevant figures and tables to clarify findings. Finally, a concise summary will conclude the section, synthesizing key insights across the models.

Sample Descriptives

Detailed descriptive statistics for key variables, including the number of sessions, helplessness scores, and WHO-5 well-being scores throughout the treatment are provided in Table 4. There were 138 participants included in the analysis, with a mean of 11.54 sessions attended and a median of 11 sessions. The mean helplessness score throughout the treatment was 2.37 (*SD* = 0.93), and the median was 2.00, indicating a moderate level of helplessness. The range of helplessness scores (1 to 5) shows significant variation in participants' perceptions of helplessness during their therapy sessions. Similarly, the WHO-5 well-being scores had a mean of 2.04 (*SD* = 1.06) and a median of 2.00, indicating moderate well-being levels throughout the treatment.

Table 4

Descriptive Statistics for Key Variables

	Min	1st Quartile	Median	*M*	*SD*	3rd Quartile	Max
WHO-5	0	1.20	2	2.04	1.06	2.80	5
Helplessness	1	2	2	2.37	0.93	3	5
Sessions	1	6	11	11.54	5.90	17	22

Note. WHO-5= World Health Organization Well-Being Index.

Multilevel models

As described above, due to the hierarchical nature of the data we employed multilevel linear modeling (MLM) (Preacher et al., 2010) for our main analyses. This approach allows us to account for the dependency of observations within individuals over time. The models used in this analysis include an unconditional model, a time predictor model, a hybrid random effects model, a sensitivity model, and a cross-level interaction model.

Unconditional Model

The unconditional model was the first model tested, serving as a baseline to understand the inherent variability in the WHO-5 scores across patients. This model did not include any predictor variables, highlighting how much variability in well-being scores was due to differences between patients versus within the same patient over time. As shown in Table 5, the unconditional model indicated that on average, participants had a WHO-5 value of 2.03 across treatment ($\gamma = 2.03$, $SE = 0.06$, 95% CI [1.91, 2.15], $t\,(137) = 31.86$, $p < .001$). The random effects showed variance components of 0.52 for the intercept and 0.53 for the residuals. Thus, more than 50% of the variance on WHO-5 was explained by between-patient variability (*ICC*= .50).

Table 5

Unconditional Mixed Model of WHO-5 Baseline Well-Being Scores

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Fixed effects								
Intercept	2.03	0.06	1.91	2.15	31.86	<.001	137.66	0.01
Random Effects								
τ^2 (Intercept)	0.52	0.60	-	-	-	-	-	-
σ^2 (Residual)	0.53	0.39	-	-	-	-	-	-
Model Fit								
AIC	5686.7	-	-	-	-	-	-	-
BIC	5704.1	-	-	-	-	-	-	-

Note. N = 138

Time Predictor Model

The time predictor model, with session attendance as a predictor, showed a significant positive association with WHO-5 scores, suggesting improvements in well-being over time (γ = 0.05, *SE* = 0.002, *t (*2401) = 21.94, $p < .001$; see Table 6). In this model, the variable of sessions was centered around session 1 allowing for a clear view of how well-being changes from the start of therapy. The intercept (γ = 1.53, *SE* = 0.07, *t (*2401) = 22.70, $p < .001$), indicates that patients began with relatively high depression scores, which increased with session attendance.

Model comparison tests revealed that the time predictor model provided a significantly better fit than the unconditional model (χ^2 (1)= 436.78, $p < .001$). Random intercept variance was similar (τ^2 = 0.53), but residual variance reduced to 0.44 compared to the unconditional model, showing that time explains some session-specific variability in well-

being. While the random time model allowed session slopes to vary across patients, it did not significantly enhance the model fit (χ^2 (1)= 53.02, p = .06).

Table 6

Time Predictor Mixed Model for WHO-5 Well-Being Scores Over Therapy Sessions

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Fixed Time Predictor								
Fixed effects								
Intercept	1.53	0.07	1.40	1.66	22.70	<.001	174.90	0.01
Session	0.05	<.001	0.04	0.06	21.94	<.001	2286	0.29
Random Effects								
τ^2(Intercept)	0.53	0.72	-	-	-	-	-	-
σ^2 (Residual)	0.44	0.44	-	-	-	-	-	-
Model Fit								
Model Comparison (χ^2)	436.78	-	-	-	-	<.001	1	-
AIC	5251.90	-	-	-	-	-	-	-
BIC	5275.00	-	-	-	-	-	-	-
Random Time Predictor								
Fixed effects								
Intercept	2.06	0.09	1.87	2.24	22.19	<.001	61.53	0.02
Random Effects								
τ^2 (Intercept)	0.53	0.73	-	-	-	-	-	-
τ^2 (Session)	0.10	0.31	-	-	-	-	-	-

Table 6 (*Continued)*

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
σ^2 (Residual)	0.43	0.66	-	-	-	-	-	-
Model Fit								
Model Comparison (χ^2)****	53.02	-	-	-	-	0.06	1	-
AIC	5306.2	-	-	-	-	-	-	-
BIC	5329.4	-	-	-	-	-	-	-

*Note***.** *Time as a Sole Predictor over the Unconditional Model. **Random Time Predictor over Time as Fixed Predictor

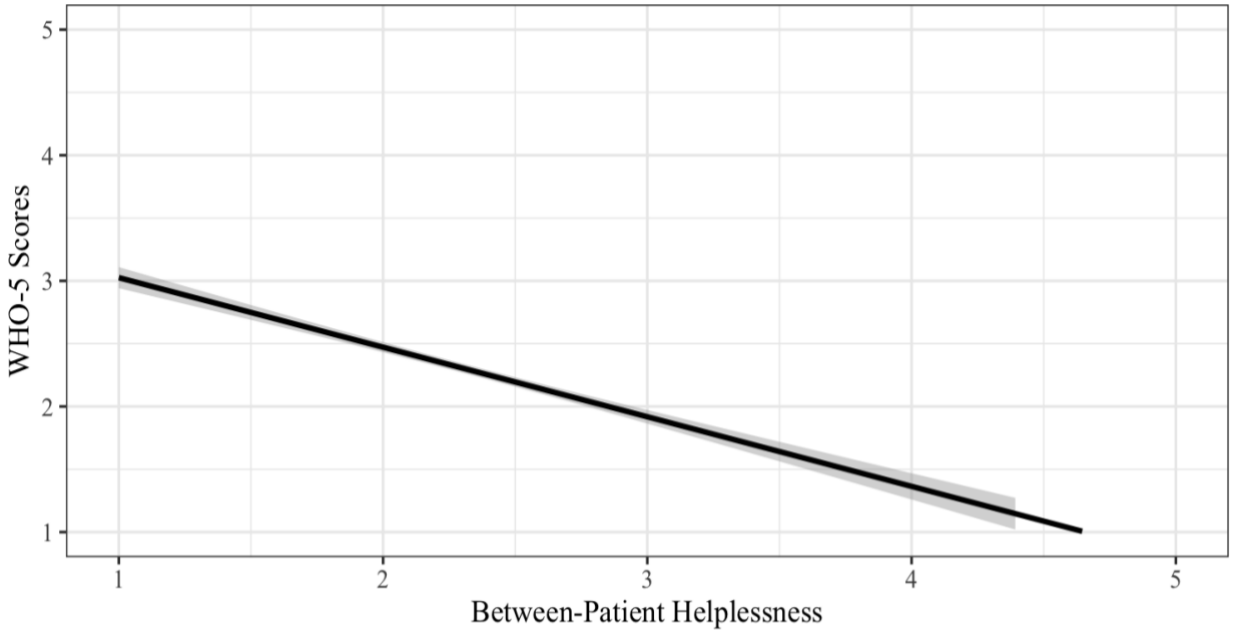
Hybrid Random Effects Model

The Hybrid Random Effects Model was employed to assess the role of helplessness as a mechanism of change in CBT for depression, examining both between-patient (Hypothesis 1) and within-patient (Hypothesis 2) effects on well-being as measured by WHO-5 scores.

Between-Patient Effects of Helplessness on Depression (Hypothesis #1): The between-patient effect of helplessness represents how an individual's overall level of helplessness, relative to the sample average, affects their WHO-5 scores across all sessions. As shown in Figure 1, a one-unit increase in BP helplessness was associated with a 0.62-point lower score on the WHO-5 (γ = -0.62, *SE* = 0.08, 95% CI [-0.78, -0.46], $t(137) = -7.96$, $p < .001$), indicating that patients who generally experience higher helplessness levels report higher depressive symptoms throughout therapy (see Table 7). In standardized terms, a one standard deviation increase in BP helplessness corresponded to a 0.40 standard deviation decrease in well-being.

Figure 1

Impact of Between-Patient on WHO-5 scores

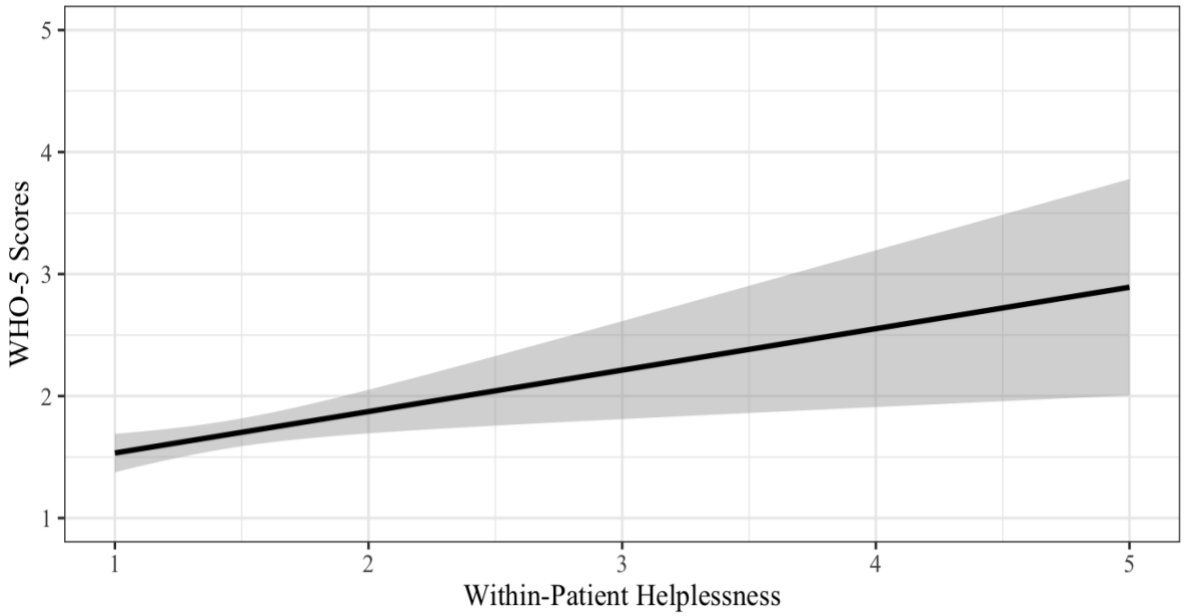


Note. Higher levels of between-patient helplessness are correlated with lower WHO-5 scores, demonstrating the negative impact of helplessness on well-being.

Within-Patient Effects of Helplessness on Depression (Hypothesis #2): The within-patient effect examines how session-specific fluctuations in helplessness around each patient's baseline predict immediate changes in WHO-5 scores. As seen in Figure 2, a one-unit increase above a patient's average was associated with a 0.49-point reduction in well-being (γ = -0.49, *SE* = 0.02, 95% CI [-0.53, -0.45], t (2378) = -28.63, $p < .001$). In standardized terms, a one *SD* increase in WP helplessness from a patient's average corresponded to a 0.35 *SD* decrease of WHO-5 (see Table 7). This finding suggests that when patients experience a session-specific reduction in helplessness relative to their own average, they show concurrent improvements in depressive symptoms.

Figure 2

Impact of Within-Patient Helplessness on WHO-5



Note. Increased levels of within-patient helplessness are associated with lower WHO-5 scores, indicating that reductions in helplessness within an individual lead to better well-being outcomes.

The hybrid model, which incorporates both between- and within-patient effects of helplessness, provided a significantly better fit than the time predictor model ($\chi^2(2) = 356$ $p <$ .001), indicating the enhanced explanatory power of including helplessness variables in predicting well-being outcomes. Furthermore, this model showed reduced random intercept variance ($\tau^2 = 0.36$) and residual variance ($\sigma^2 = 0.39$) relative to earlier models, suggesting that helplessness accounts for a meaningful portion of the variance in depressive scores. Overall, the hybrid model results reveal significant contributions of both stable and session-specific helplessness in influencing depression.

Table 7

Hybrid Mixed Model of Between-Patient and Within-Patient Helplessness Effects on WHO-5 Scores

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Fixed effects								
Intercept	2.05	0.05	1.95	2.15	38.80	<.001	136.06	0.01
Help_BW	-0.62	0.08	-0.77	-0.47	-7.96	<.001	139.67	-0.40
Help_WT	-0.49	0.02	-0.52	-0.46	-28.63	<.001	2244.83	-0.35
Random Effects								
τ^2 (Intercept)	0.36	0.60	-	-	-	-	-	-
σ^2 (Residual)	0.48	0.39	-	-	-	-	-	-
Model Fit								
Model Comparison (χ^2)	356.00	-	-	-	-	<.001	2	-
AIC	4896.70	-	-	-	-	-	-	-
BIC	4925.60						-	

Note. **Help_BW**: Represents the between-patient effect of helplessness, which refers to the overall average level of helplessness experienced by a patient across all therapy sessions. **Help_WT**: Represents the within-patient effect of helplessness, which refers to the deviation from the average level of helplessness for a patient within specific therapy sessions. **(χ^2)** indicates a significantly better fit for the Hybrid Model compared to simpler models, showing that including helplessness variables enhances the model's explanatory power.

Sensitivity Model

The sensitivity model, presented in Table 8, assesses the stability of helplessness effects on well-being by adjusting for the cumulative effect of therapy sessions over time. This model introduces session attendance as a time-varying covariate, allowing for a detrended view that controls for improvements that could arise simply from the passage of time (Falkenström et al., 2023).

The results show a significant positive association between time in therapy and WHO-5 scores, with well-being improving throughout treatment ($\gamma = 0.04$, *SE* = 0.002, 95% CI [0.04, 0.06], t (2379) = 21.94, $p < .001$). In terms of helplessness, both BP and WP effects remained robustly significant even after controlling for the passage of time. The BP effect of helplessness (Help_BW) showed a significant negative association with well-being ($\gamma = -0.59$, *SE* = 0.08, 95% CI [-0.75, -0.43], t(137) = -7.47, $p < .001$), indicating that patients with consistently higher levels of helplessness across sessions experienced a standardized decrease of 0.38 in WHO-5 scores. Similarly, WP fluctuations in helplessness were significantly associated with well-being, showing that in sessions where a patient felt more helpless than their average, their well-being scores were lower ($\gamma = -0.42$, *SE* = 0.02, 95% CI [-0.46, -0.38], t(2378) = -25.28, $p < .001$). This finding indicates that when a patient's session-specific helplessness (help_WT) was higher than their average, their well-being score decreased by approximately 0.30 standard deviations.

The likelihood ratio test indicated that the sensitivity model provided a significantly better fit than the hybrid model (χ^2 (1) = 283.40, $p < .001$) ICC of 0.521, signifying that around 52% of the variance could be attributed to stable patient differences. By controlling for the time effect in the sensitivity model, the findings reveal that helplessness acts as an independent influence on depression, beyond the general improvements associated with time spent in therapy (Falkenström et al., 2023).

Table 8

Sensitivity Mixed Model Adjusting WHO-5 Scores for Therapy Duration

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Fixed effects								
Intercept	1.68	0.06	1.54	1.76	29.27	<.001	180.40	0.02
Session	0.04	<.001	0.03	0.04	17.40	<.001	2265	0.21
help_BW	-0.59	0.08	-0.75	0.43	-7.47	<.001	139.10	0.38
help_WT	-0.42	0.02	-0.46	0.38	25.28	<.001	2245	0.30
Random Effects								
τ^2 (Intercept)	0.37	0.61	-	-	-	-		-
σ^2 (Residual)	0.52	0.34	-	-	-	-		-
Model Fit								
Model Comparison (χ^2)	283.40	-	-	-	-	<.001	1	-
AIC	4615.20	-	-	-	-	-		-
BIC	4649.9							

Note. (χ^2) shows that the Sensitivity Model fits significantly better than the Hybrid Model.

Cross-Level Interaction Model

In this study, the inclusion of a cross-level interaction aimed to determine if patients with different baseline levels of helplessness experience the effect of within-session changes in helplessness on well-being differently. As shown in Table 9, the intercept, representing

baseline well-being, was estimated at 2.05 (*SE* = 0.05, 95% CI [1.57, 1.80], $p < .001$), indicating a moderate starting level of depression across participants. BP helplessness demonstrated a significant negative effect on WHO-5 scores ($\gamma = -0.62$, *SE* = 0.08, $p < .001$), suggesting that patients with higher average helplessness levels reported lower well-being scores overall.

WP helplessness also had a significant negative effect on well-being ($\gamma = -0.50$, SE = 0.02, $p < .001$), meaning that during sessions where patients felt more helpless than their usual level, their well-being scores dropped. Notably, there was a significant interaction between WP and BP helplessness ($\gamma = 0.15$, *SE* = 0.03, $p < .001$), indicating that the impact of session-specific increases in helplessness on well-being was moderated by the patient's average level of helplessness. As seen in Figure 3, the negative effect of session-specific helplessness was less pronounced for patients with lower overall helplessness levels. This means that patients with lower BP helplessness show higher WHO-5 scores and benefit more from increases in within-session helplessness. Model comparison results ($\chi^2 = 53.08$, $p < .001$) suggest that the cross-level interaction model provides a significantly better fit than previous models with an ICC of 0.49.

Table 9

Cross-Level Interaction Mixed Model of Helplessness on WHO-5 Well-Being Scores

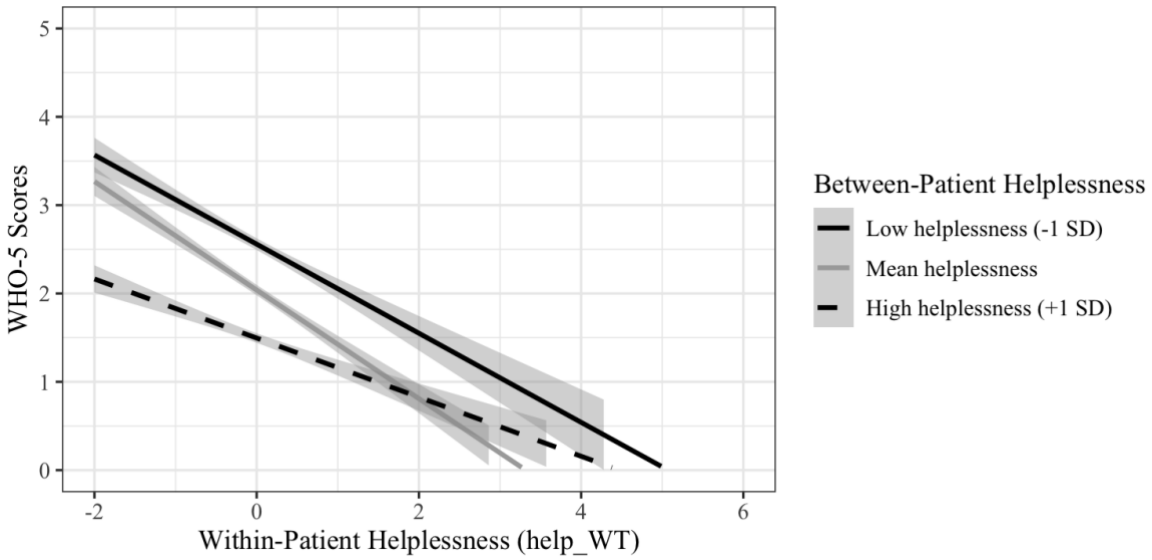
Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Fixed effects								
Intercept	2.05	0.05	1.57	1.80	38.80	<.001	136.06	0.01
Help_BW	-0.62	0.08	-0.78	-0.47	-7.97	<.001	139.65	-0.40
Help_WT	-0.50	0.02	-0.53	-0.46	-29.16	<.001	2243.81	-0.35
Help_WT*Help_BW	0.15	0.03	0.09	0.21	5.18	<.001	2243.84	-

Table 9 *(Continued)*

Effect	Estimate	*SE*	95% CI		*t*	*p*	*df*	*β*
			LL	*UL*				
Random Effects								
τ^2 (Intercept)	0.36	0.60	-	-	-	-	-	-
σ^2 (Residual)	0.52	0.34	-	-	-	-	-	-
Model Fit								
Model Comparison (χ^2)	53.08	-	-	-	-	< .001	1	-
AIC	4595.07	-	-	-	-	-	-	-
BIC	4635.51	-	-	-	-	-	-	-

Figure 3

Estimated within-patient effects of helplessness on WHO-5 scores in patients with high, mean, and low between-patient helplessness



Note. The high and low between-patient helplessness effects were established based on one standard deviation (+-0.66) above and below the mean between-patient helplessness scores (2.37).

Lastly, a correlation analysis was conducted to confirm the robustness of the model by establishing the independence of between-patient and within-patient effects (Ebbes et al., 2004). The weak correlation between patient helplessness and the intercept (r = -0.06) suggests that individual differences in baseline helplessness minimally influence initial well-being scores, allowing baseline well-being to be assessed independently of chronic helplessness. Similarly, the weak correlation between within-patient helplessness and the intercept (r = -0.10) indicates that session-specific fluctuations in helplessness do not strongly relate to initial well-being levels, implying that these variations reflect distinct situational factors rather than the patient's starting well-being.

The near-zero correlation between between-patient and within-patient helplessness (r = 0.02) further supports the independence of these constructs, affirming that a patient's general helplessness does not predict the magnitude of within-session helplessness fluctuations. These minimal correlations indicate low multicollinearity and suggesting that both dimensions contribute distinct information to the model (Frost, 2019; Hoffman & Stawski, 2009).

Summary of The Findings

In summary, the unconditional model indicated that patient-level differences contribute substantially to overall variance in well-being, establishing a baseline for comparison. The Time Predictor Model showed that each additional session was associated with incremental improvements in WHO-5 scores. The Hybrid Model differentiated between stable, person-level helplessness and session-specific fluctuations, finding that patients with higher stable helplessness experienced worse depressive symptoms, and decreases in session-specific helplessness were linked to immediate symptom improvement, even after detrending for time effects. Finally, the Cross-Level Interaction Model showed that patients with lower baseline helplessness gained more from within-session reductions in helplessness.

Discussion

The present study set out to clarify the role of helplessness as a mechanism of change in CBT for depression, focusing specifically on disaggregating BP and WP effects. By employing multilevel modeling, this study was able to examine how trait-like helplessness influences overall treatment outcomes and how session-specific fluctuations in helplessness

relate to immediate changes in depressive symptoms. On the one hand, by centering BP helplessness around the group mean, stable, trait-like helplessness levels were isolated, and their association with overall depression severity. WP mean-centering, on the other hand, isolated session-specific helplessness variations, revealing that short-term fluctuations contribute uniquely to immediate symptom relief (Zilcha-Mano, 2021). This separation reinforced helplessness as a dynamic mechanism of change, allowing for targeted interventions based on both stable and fluctuating helplessness. In doing so, this study contributes to a growing body of literature seeking to better understand the nuanced ways in which cognitive and emotional processes like *learned helplessness* influence the success of psychotherapy, aiming at establishing them as mechanisms of change and improving treatments (Curran & Bauer, 2010; Falkenström et al., 2017; Zilcha-Mano, 2021).

The research tested two key hypotheses. The first hypothesis proposed that BP helplessness, or a patient's overall enduring level of helplessness, would be associated with depressive symptoms throughout therapy. Results support this hypothesis, as patients who consistently reported higher levels of helplessness across therapy sessions exhibited significantly lower WHO-5 well-being scores. This finding indicates that individuals with a more persistent, trait-like sense of helplessness tend to experience greater depressive symptoms over the course of treatment, confirming the hypothesis.

The second hypothesis suggested that reductions in WP helplessness, or session-specific shifts in helplessness, would be associated with immediate improvements in depressive symptoms. The data supports this hypothesis as well, with significant findings showing that in sessions where patients reported lower-than-usual helplessness levels, their well-being scores increased. This within-session effect reveals that even temporary reductions in feelings of helplessness can lead to concurrent decreases in depressive symptoms. The detrending analysis further solidifies the study's conclusions by demonstrating that the effects of helplessness on depressive symptoms are not solely due to the cumulative impact of time spent in therapy (Falkenstrom et al., 2017).

Finally, we analyzed the interaction between BP and WP helplessness to explore whether overall levels of helplessness moderated the impact of session-specific changes on treatment outcomes. The results demonstrated that patients with lower BP helplessness

experienced greater benefits from WP reductions in helplessness, meaning the ones with higher helplessness scores benefited less from session variations in helplessness.

Helplessness as a Trait-Like Covariate of Depressive Severity

Regarding the first hypothesis, the significant between-patient effect observed in this study suggests that higher levels of helplessness are strongly associated with worse symptom severity. This finding aligns with well-established cognitive theories of depression, which suggest that individuals with a pervasive sense of helplessness tend to view their problems as unchangeable and global, reinforcing feelings of powerlessness (Abramson et al., 1978; Weiner, 1985). This sense of uncontrollability could further exacerbate depressive symptoms by impairing the individual's ability to perceive alternative solutions or positive outcomes (Seligman & Maier, 1967).

Neurobiological evidence also supports these findings, showing that helplessness is linked to dysregulated brain regions, such as the prefrontal cortex, which is responsible for decision-making and emotional regulation (Maier & Seligman, 2016). Therefore, patients who experience chronic, high levels of helplessness could potentially have more severe depressive symptoms due to the reinforcing cycle of negative thinking and emotional dysregulation (Scherer, 2022; Hankin et al., 2009). In turn, it could impair goal-directed behavior by disrupting an individual's perceived ability to exert control over their environment, reinforcing a negative feedback loop in which hopelessness and passivity predominate (Brandstätter & Bernecker, 2022).

In addition, the relationship between helplessness and worse symptom severity can be explained through the concept of self-complexity. Individuals with lower self-complexity—those who have fewer distinct self-identifications that operate across different life domains—are more vulnerable to the generalization of helplessness from one area of failure to others (Linville, 1987; Rothermund & Meiniger, 2004). When individuals' sense of self is narrowly defined, setbacks in one domain (such as work or personal relationships) are more likely to spill over into other areas, causing them to experience feelings of helplessness in multiple aspects of their lives (Scherer, 2022). This overlap in negative emotions across domains leads to increased depressive symptoms, as individuals feel overwhelmed by a sense of pervasive failure (Linville, 1987; Rothermund & Meiniger, 2004).

Therefore, patients with high baseline helplessness are likely to require more intensive or targeted interventions aimed specifically at modifying these deeply held cognitive distortions. Since they often feel they lack control over their circumstances, incorporating strategies like motivational interviewing could be useful in fostering a belief in personal efficacy and reinforcing the possibility of change (Westra, 2004). It has been shown that Schema therapy could be particularly effective for patients with high baseline helplessness, as it addresses deeply ingrained belief systems that contribute to their negative self-perceptions and sense of helplessness (Young et al., 2003). Schemas related to worthlessness or failure may perpetuate the belief that their circumstances are unchangeable, limiting progress in therapy (Shaghaghy et al., 2011). By identifying and modifying these core schemas, patients may begin to develop healthier coping mechanisms and a more adaptive mindset (Edwards & Arntz, 2012). Furthermore, incorporating self-compassion techniques drawn from Acceptance and Commitment Therapy (ACT) might soften self-criticism and encourage a more forgiving view of personal struggles (Trindade et al., 2019). These combined interventions should aim to shift maladaptive thought patterns, ultimately allowing patients to cultivate resilience and reduce the likelihood of relapse (Karl et al., 2018).

Helplessness as a State-Like Mechanism of Change

The second hypothesis explored WP effects, specifically investigating whether session-specific reductions in helplessness corresponded with immediate improvements in depressive symptoms. The results confirmed that decreases in helplessness during therapy sessions were directly linked to a decrease in depressive symptoms, shown as a significant factor in driving recovery during depression treatment. This could be understood under the attributional bias scope, meaning that when patients feel more control over their circumstances, a sense of agency replaces the passive, hopeless state often seen in depression (Abramson et al., 1978; Seligman, 1975). This empowerment allows them to engage more actively with their treatment, fostering emotional resilience and problem-solving abilities (DeRubeis et al., 1990).

The moment-to-moment reductions in helplessness within therapy indicate that it functions as a dynamic state, not just a fixed trait. This suggests that therapists can capitalize on these fluctuations by actively targeting helplessness to maximize therapeutic gains (Zilcha-Mano, 2021; Lambert et al., 2018). Implementing real-time assessments, such as brief self-

reports or therapist observations, could allow for immediate adjustments to treatment strategies, and help patients regain control when they experience spikes in hopelessness during sessions (Marchetti et al., 2023).

While cognitive restructuring is effective in challenging irrational beliefs tied to helplessness, it may not fully address the emotional distress that arises within sessions, such as feelings of despair or powerlessness, that often accompany these beliefs (Ezawa & Hollon, 2023). Therefore, adding emotion regulation strategies could be beneficial in managing the emotional intensity associated within-session helplessness (Sønderland et al., 2023). Techniques drawn from Emotion-Focused Therapy (EFT) or Mindfulness-Based Cognitive Therapy (MBCT) might be especially useful for addressing these emotional aspects, offering a more well-rounded approach to treatment (Gross, 1998; Kuyken et al., 2008).

The Interaction of Trait and State Mechanisms

The interaction between trait-like and state-like helplessness, shown by the cross-level interaction model, provides further depth to the understanding of helplessness in depression treatment. Specifically, the results suggest that patients with lower overall helplessness benefit more from session-specific reductions in helplessness than those with high baseline helplessness. This could be explained by the fact that helplessness has been shown to impair cognitive functioning by diminishing "functional efficiency," a term used to describe how repeated experiences of failure reduce individuals' ability to process information and pursue goals effectively (Kuhl, 1981). This functional inefficiency means that individuals with higher levels of helplessness are less likely to benefit from therapeutic interventions, as their cognitive capacity to integrate new information and challenge distorted beliefs is diminished (Brandstätter & Bernecker, 2022). Their lower self-efficacy and cognitive biases, such as memory biases toward negative outcomes and pervasive pessimism, further inhibit their ability to work on therapeutic goals, as they are less likely to believe that their circumstances can change (Duda & Joormann, 2022).

However, an alternative perspective suggests that patients experiencing "*Motivated Helplessness*" (Lifshin et al., 2020) might intentionally adopt a sense of helplessness not purely due to a perceived lack of control but rather as a form of self-protection. Instead of helplessness stemming solely from an absence of control, it may be a strategy to avoid engagement with emotionally challenging situations. In CBT, where active participation and

emotional processing are central, this tendency to "choose" helplessness as a perceived control mechanism could hinder therapeutic progress, as patients may disengage from confronting distressing emotions and necessary behavioral changes. This perspective contrasts with traditional views, highlighting how the sense of helplessness can sometimes act as a protective stance rather than a reaction to uncontrollable circumstances (Lifshin et al., 2020).

In addition, this finding supports the need for personalized approaches in CBT (Deisenhofer et al., 2023; Huibers et al., 2021). For patients with high baseline helplessness, therapy might first need to focus from the start on addressing the underlying, persistent feelings of helplessness through strategies that strengthen cognitive control and promote adaptive emotion regulation, like reappraisal (Joormann & Gotlib, 2010). In contrast, patients with lower baseline helplessness could benefit more from interventions aimed at reducing helplessness as they arise during therapy sessions. By adapting the treatment approach to the patient's level of helplessness, therapy could help patients reduce these feelings and develop emotional resilience, improving both immediate session outcomes and long-term recovery (Huibers et al., 2021; Sønderland et al., 2023).

Clinical Implications

Given the significant role of helplessness as a mechanism of change in depression, clinicians should prioritize relapse prevention by addressing helplessness not only during therapy but also after treatment. Relapse is a known risk for patients who continue to struggle with chronic helplessness, especially if helplessness remains unresolved by the end of therapy (Pryce et al., 2011). One key strategy might be to implement relapse prevention plans that include multidisciplinary techniques that patients can use independently to combat feelings of helplessness post-therapy. MBCT has been shown to be effective in preventing relapse in patients with MDD, especially with recurrent depressive episodes (Zhang et al., 2018).

As mentioned earlier, the study's findings strongly support the necessity for personalized therapeutic interventions, especially when considering how patients with varying baseline levels of helplessness respond differently to session-specific reductions in helplessness. For patients with high trait-like helplessness, therapy might initially focus on building foundational skills like cognitive restructuring and schema-focused therapy to gradually challenge the ingrained beliefs that contribute to feelings of helplessness. Patients with lower baseline helplessness could benefit more from therapies that are adaptable and

responsive to session-specific changes, such as emotion-focused or mindfulness-based therapies (Gross, 1998; Kuyken et al., 2008). These personalized approaches allow therapists to directly address the fluctuating emotional states associated with helplessness, maximizing immediate gains during therapy sessions.

Nonetheless, in order to address these state variations, real-time monitoring of helplessness is essential for maximizing the efficacy of treatment (Deschênes & Dugas, 2012; Moldovan & Pintea, 2015). Clinicians might incorporate brief self-report scales or therapist observational tools during therapy sessions to assess the patient's level of helplessness and emotional distress in real time. These assessments could allow therapists to make immediate adjustments to their treatment approach, aligning with the personalized psychotherapy movement, advocating for treatments that adapt to the patient's current state rather than focusing solely on rigid treatment plans (Deisenhofer et al., 2023; Gómez Penedo et al., 2023). Additionally, employing digital tools or mobile apps to track patients' helplessness levels outside of therapy sessions could provide valuable insights into how helplessness fluctuates in everyday contexts (De Angel et al., 2022). This could inform follow-up interventions, ensuring that patients remain on track toward recovery and that they receive targeted support when needed.

Finally, the complex interaction between trait- and state-like helplessness implies that therapists require specialized training to recognize these subtleties and adapt their interventions accordingly. Training programs could emphasize the importance of differentiating between chronic, deeply embedded helplessness and more dynamic, session-specific changes in helplessness. Therapists should be equipped with a variety of techniques, as a means to navigate these different levels of helplessness. This way, therapists can offer more comprehensive care that addresses both the immediate and underlying factors contributing to depression (Fairburn & Cooper, 2011).

Limitations and Future Research

Despite its contributions, this study has several limitations that should be addressed in future research. One limitation of the study is using self-report measures to assess both helplessness and well-being. Although self-reports are widely used in psychotherapy research for their practicality and accessibility, they are subject to biases, including response bias and shared variance (McHugh et al., 2010). The use of self-report measures was chosen because

they allow for the efficient collection of session-by-session data, which is crucial in capturing the dynamics of therapy (Demetriou et al., 2015). However, future research would benefit from incorporating multi-method assessments, such as clinician ratings or observational data, to validate these findings and provide a more comprehensive understanding of the constructs being measured. Another limitation lies in the use of a single-item measure to assess helplessness. While this approach helped reduce participant burden in an intensive longitudinal design (Song et al., 2022), it also limited the depth of our understanding of helplessness. Helplessness is a complex construct, encompassing cognitive, biological, and emotional dimensions, and future studies should consider using multi-item scales that offer a more nuanced view of this mechanism of change (Fisher & Boswell, 2016).

A further limitation of the study is the use of the WHO-5 Well-Being Index instead of the more commonly used Beck Depression Inventory-II (BDI-II) (Beck et al., 1996). The decision to use the WHO-5 was motivated by its applicability in session-by-session assessments and its ability to reduce participant burden, particularly in an intensive longitudinal design. However, this choice could be seen as a limitation because, although the WHO-5 is a validated tool for assessing well-being (Krieger et al., 2014; Omani-Samani et al., 2020), it may lack the granularity and specificity of the BDI-II, which is widely regarded as a more comprehensive measure of depressive symptoms (Beck et al., 1996). Future research might consider incorporating both measures to balance ease of use with measurement precision.

In addition, the study did not account for therapist effects. Variability in therapist skill, style, and experience may have influenced the outcomes, as different therapists might apply CBT techniques with varying degrees of efficacy. However, previous research, such as (Falkenström et al., 2020b), has shown that including therapist effects does not necessarily improve model performance and may introduce bias, especially when the number of therapists is limited. While we focused on patient-centered changes for the purposes of this study, future research should use models that account for therapist variability, such as three-level hierarchical models (Falkenström et al., 2020b). Additionally, while we observed significant within-patient effects of helplessness on well-being, the directionality of these effects remains unclear. It is possible that the observed reductions in helplessness are a byproduct of symptom reduction rather than the driver of symptom improvement. Future

longitudinal studies should incorporate cross-lagged panel models to disentangle these effects and clarify the direction of causality. Such methods would allow for a more nuanced understanding of how reductions in helplessness may serve both as a mechanism of change and a result of successful therapy (Falkenström et al., 2020a, 2023).

Moreover, it is important to explore the long-term effects of helplessness reduction in therapy. Future studies should include longitudinal follow-up periods to assess whether changes in helplessness during therapy are sustained after treatment and whether patients who maintain high levels of helplessness post-therapy are more likely to relapse. This could inform relapse prevention strategies, ensuring that patients who are at greater risk receive the necessary support to maintain their improvements.

Furthermore, it is important to acknowledge that helplessness is not the only cognitive and emotional process relevant to depression. Other variables such as hopelessness, rumination, and emotional dysregulation are also known to play significant roles in the course of depressive symptoms (Gross, 1998; Joormann & Gotlib, 2010). It has been found that impaired cognitive inhibition could lead to difficulties in emotion regulation, particularly through increased rumination and decreased use of adaptive strategies like reappraisal. These cognitive deficits would not only sustain negative affect but also limit the individual's ability to recover from negative emotional states, like helplessness (Joormann & Gotlib, 2010). By examining how these factors compound emotional regulation issues in depression, future research could provide valuable insights into developing more effective treatments aimed at improving cognitive control and emotional flexibility.

Moreover, the sample's lack of diversity may limit the generalizability of the findings. Future research should aim to include more demographically diverse participants to ensure that the results are applicable across different populations. Cultural factors may influence how helplessness manifests and is addressed in therapy.

In conclusion, this study highlights the critical role of helplessness as a mechanism of change in CBT for depression, both at the between-patient and within-patient levels. The findings indicate that reductions in helplessness, both across therapy and within individual sessions, are strongly linked to improved well-being. These insights are particularly useful for tailoring interventions in CBT, as they emphasize the importance of addressing helplessness as a dynamic, session-specific factor. By focusing on this mechanism, the study aims to

contribute to reducing the high relapse rates observed in depression by offering more targeted and personalized treatment strategies. Future research should further explore these mechanisms to optimize relapse prevention and long-term recovery.

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