The Effect of Deliberate Practice Training on Psychology Students' Empathic Skills
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Abstract
Research suggests that, unlike practitioners of other professions, psychotherapists do not improve their performance with experience. The application of deliberate practice (DP) into psychotherapy training has been suggested as one way to improve psychotherapists’ and psychology students’ performance. This study intends to compare the effect of deliberate practice (DP) training and expositive training as usual (TAU) on the empathic quality of undergraduates’ therapeutic responses to clinical simulation videos. Psychology undergraduates (N = 36) were randomly assigned either to DP or to TAU conditions. They recorded their empathic responses to two videos at three different points in time over the course of three weeks (once before having received any training and twice after the DP or TAU interventions). Blind raters evaluated the empathic quality of the responses using the Measure of Expressed Empathy (Watson, 1999). The results indicate that undergraduate students undergoing DP displayed improvements in their empathic responses from baseline to after the second DP training. In contrast, participants in the TAU condition did not show comparable enhancements.

Keywords
deliberate practice, Randomized Control Trial (RCT), empathy, psychology students’ training/development

Introduction
Psychotherapy has been proven to be effective in treating several psychological disorders across all age groups (Wampold, 2013). This effect appears to be similar across different psychotherapeutic approaches (Gloster et al., 2020; Imel et al., 2008; Luborsky et al., 1975; Smith & Glass, 1977). Moreover, “specific ingredients” seem to account little for therapy efficacy (Ahn & Wampold, 2001; Bell et al., 2013), with common factors, such as the therapist’s ability to be empathic and create and maintain a good therapeutic alliance accounting for most therapy outcomes (Messer & Wampold, 2002). Gender, educational qualifications, and the degree of theoretical integration of therapists are not predictors of clients’ outcomes (Chow et al., 2015; Goldberg et al., 2016). Additionally, it seems that therapists may not improve with experience (Anderson et. al., 2009; Chow et al., 2015; Tracey et al., 2014; Wampold & Imel, 2015), with some even performing worse over time (Goldberg et al., 2016). This effect might be due to the lack of systematic training and feedback that therapists receive (Tracey et al., 2014). Nonetheless, there are therapists who are consistently seen to be more effective than their...
peers (Baldwin & Imel, 2013). While this is still an under-researched field of study, it seems that these therapists tend to be more attentive to feedback and to engage in deliberate practice (DP) trainings (Miller et al., 2007; Miller et al., 2013, Rousmaniere et al., 2017).

This study serves as a proof of concept, aiming to explore the practical application of DP for improving therapeutic skills. Our objective is to showcase the feasibility and potential effectiveness of implementing a DP training method during the early stages of academic development by directing our efforts toward undergraduate students.

Despite the attention given to the development of treatment programs, there is a lack of research regarding the teaching of psychotherapy methods (Pascual-Leone, 2014; Boswell & Castonguay, 2007). Training programs are typically organized based on schools' historical traditions and the factors that professional organizations deem important; however, these programs may not always align with the trainees’ perspective of what they need to know to be effective psychotherapists (Rocco et al., 2019). With this proposal we aim to understand if DP can be an effective method to alleviate the notable, perceived gap in psychotherapist training where there is a clear bias toward theoretical and didactic instruction in psychotherapy training. This bias overshadows the inclusion of hands-on practical experience, experiential training methods, and targeted development of therapeutic skills (Boswell & Castonguay, 2007; Rousmaniere et al., 2017).

The existing research regarding psychotherapeutic or counseling training mainly addresses graduate students and professionals, with fewer authors discussing the effect of training at an undergraduate level (Hill, 2008; Pascual-Leone, 2014). Despite the evident rationale for investigating the effects of psychotherapy training on graduates and professionals, research suggests that, when trained in a comparable manner, undergraduates can demonstrate proficiency in abilities such as providing helpful single sessions and eliciting a helpful reaction from a client. However, there is limited research on the learning potential of this specific group.

Through our research, we aspire not only to advance theoretical understanding but also bridge the practical training gap observed in the education of future psychotherapists. Specifically, we aim to understand if DP can improve key therapeutic skills, such as empathy, in undergraduate students.

**Deliberate Practice**

Deliberate practice (DP) is described as “individualized training activities specially designed by a coach or teacher to improve specific aspects of an individual’s performance through repetition and successive refinement” (Ericsson & Lehmann, 1996, pp. 278–279). This type of training has been proposed as one of the main causes for performance improvement (Ericsson et al., 1993; Ericsson, 2006), and evidence suggests that the number of hours spent practicing a certain domain predicts the practitioner’s performance more than innate characteristics such as “talent” (Ericsson et al., 1993). DP has shown to be effective in areas such as music, sports, chess, and medicine (Ericsson & Pool, 2016; McGaghie et al., 2011). However, until recently, there were no studies investigating its effect on the practice of psychotherapy.

Research on DP’s effect on psychotherapy emerged with the study of so-called “supershinks”; i.e., therapists who consistently have better results than their peers (Miller et al., 2007). This research proposes that the difference between supershrinks and “normal” therapists is that the former engage in DP trainings, work harder, and are more attentive to feedback. Hence, it has been suggested that to become a better therapist it is necessary for one to (a) determine the baseline of effectiveness, (b) engage in DP, and (c) get feedback.

Since DP is similar to repetitive practice and to supervision, it is important to define the differences between each type of training. DP
involves several components, such as the following: (a) the observation of current performance; (b) individualized and immediate feedback; (c) the creation of small learning goals within the trainee's current capacity; (d) behavioral training focusing on the learning objectives identified previously; and (e) performance evaluation over time (Ericsson, 2006; Miller et al., 2007; Rousmaniere, 2017). This differs from mere repetitive practice since trainees under DP training do not repeat their mistakes constantly as they operate under the guidance of an expert. For instance, in mere repetition, participants may fall into the trap of merely reinforcing the current cognitive structure and the current level of performance. In DP repetition, however, there is constant feedback with each repetition allowing for a gradual refinement of performance through repetitions after feedback (Ericsson, 1998). Additionally, with DP, there is constant monitoring to ensure that the repetition stays on the edge of the participant's potential development zone, thus ensuring that they do not remain stagnant in their progress (Miller, et al., 2018).

In DP, there is solitary practice, which refers to time that the trainee spends training on their own (for example at home) without guidance but to be discussed and evaluated in future DP sessions. Therefore, DP training cannot take place entirely alone, without the presence and guidance of an expert coach; there can be only moments of solitary practice within the DP training.

Supervision focuses on three specific areas of training goals: (1) professional and personal characteristics (such as self-efficacy, professionalism, ethics, values and attitudes, self-knowledge), (2) trainee conceptual skills (recognizing client dynamics, understanding client-therapist interactions and sequences), and (3) trainee relationship and technical skills (alliance development/maintenance, managing countertransference, theory-specific skills) (Bernard, 1997). Traditionally, supervision of a therapist involves a discussion between the supervisor and the therapist about case diagnosis and dynamics to be addressed (Rousmaniere, 2017), but with not as much discussion about the therapist's posture, specific interventions, or the degree of therapist responsiveness. During a therapy session, the therapist may not be aware of their performance quality in these areas. Furthermore, without means to observe the actual intervention by the therapist (video recording, audio, one-way observation mirror), supervision is merely descriptive. Thus, it is in this area that DP aims to work, introducing a new proposal that incorporates practical skill-training exercises within each therapist's zone of proximal development.

The literature has shown that DP has a positive effect on therapists' performance (Anderson et al., 2019; Chow et al., 2015; Golberg et al., 2016b; Hill et al., 2019; Westra et al., 2020). Several authors have stressed that, as DP is a new training system, it is crucial to test and assess performance improvement based on skills that predict better outcomes (Miller et al., 2018; Perlman et al., 2020; Tracey et al., 2014), and that are common to all psychotherapeutic approaches, rather than skills specific to one approach (Perlman et al., 2020). Since empathy has shown to be one of the common factors with considerable effect in therapeutic outcomes (Wampold, 2015), the present study uses empathy as its dependent variable.

The researchers intend to analyze two hypotheses:

• (H1): Participants under the DP training improve the quality of their empathic responses when compared to a group in the Training as Usual (TAU) condition. It is expected that, at the baseline, the quality of responses is the same for participants in both the DP and TAU groups and that, after the interventions, the responses in the DP group are significantly more empathic than the responses of the TAU group.

• (H2): Participants in the DP group improve the quality of their responses throughout the second and third evaluation moments (after the DP training), while participants in TAU maintain the quality of their responses in the three moments.
Method

Overview and Design

This study is a randomized control trial (RCT) following a mixed design. Participants recorded their interventions to clinical-simulation videos (Video A and B) on three occasions, with a week interval between collection of data. The Theravue® platform (2020) was used to record the interventions. Once the data were collected, the interventions were coded and rated by two master’s students, blind to participants’ conditions, who were trained to use the Measure of Expressed Empathy (MEE) (Watson, 1999).

The interrater agreement was assessed using the intraclass correlation coefficient (ICC). The Intraclass correlation analysis (ICC) yields a good agreement for participants’ empathy scores: The average ICC was .824 with a 95% CI [.653, .910] ($F(35,35) = 5.549, p<.001$) for the first responses; the average ICC was .749 [.483, .878] ($F(31,31) = 3.902, p<.001$) for the second responses; and .768 [.486, .896] ($F(25,25) = 4.279, p<.001$) for the third responses.

Participants

Participants were students enrolled in a clinical psychology seminar, a course in a Psychological Sciences bachelor’s degree program at a Portuguese university. The overall sample comprised 36 participants ($M_{age} = 25.67, SD_{age} = 10.61$, age range = 19 – 56; Table 1). However, due to subject loss during the three weeks only 26 participants took part in all evaluation moments (Figure 1). None of the participants completed clinical hours professionally. However, two participants were trained in specific psychotherapy approaches (Table 1). All participants signed an informed consent.

![Figure 1. CONSORT flow chart of participants allocation](image)

Note. One participant responded to Video A but not B. Hence, video A $n = 15$; Video B $n = 14$
Table 1. Condition allocation and Demographics of the study sample

<table>
<thead>
<tr>
<th>Condition</th>
<th>2018</th>
<th>2019</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP</td>
<td>8</td>
<td>9</td>
<td>17</td>
</tr>
<tr>
<td>TAU</td>
<td>9</td>
<td>10</td>
<td>19</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>6</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>Male</td>
<td>2</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Nationality</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Portuguese</td>
<td>7</td>
<td>15</td>
<td>22</td>
</tr>
<tr>
<td>Brazilian</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Ethnicity b</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>6</td>
<td>15</td>
<td>21</td>
</tr>
<tr>
<td>Black</td>
<td>-</td>
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<td>1</td>
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<td></td>
</tr>
<tr>
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<td>12</td>
<td>17</td>
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<tr>
<td>Bachelor’s degree</td>
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<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Postgraduate degree</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Master’s degree</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Previous training in psychotherapy c</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cognitive-behavioral Therapy</td>
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<td>1</td>
<td></td>
</tr>
<tr>
<td>Systemic Family Therapy</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

Note. N = 36; a only 24 participants provided their demographic data; b 2 participants refused to answer this question; c Only 2 participants had previous psychotherapeutic training

Materials
The training and assessment were implemented using Theravue® (2020), an online system for therapy education, in which participants watch clinical-simulation videos and record their interventions. The demographic survey was implemented in Qualtrics software, XM (March 2020). Additionally, the Measure of Expressed Empathy (MEE) (Watson, 1999) was used to rate the quality of the empathic responses given by the participants (see the Appendix) to the clinical-simulation videos (Video A and B).

The Measure of Expressed Empathy (MEE) is a 10-item observer-rated measure that addresses the time length in which therapists maintain empathic verbal and nonverbal behaviors. It is built to evaluate segments of therapy sessions constituted with a 9-point scale (from 0 = “never” to 8 = “all the time”), which addresses the amount of time during the segment that the therapist showed a certain behavior. Hence, if the therapist showed a behavior (e.g., the therapist looked concerned) 50% of the segments’ time, he would receive a 4 for the item addressing that behavior. After the
evaluation of the 10 items, a global empathy score is calculated by the mean of the 10 items. This measure shows a high ($\alpha = .88$) internal consistency and construct validity ($r = .66, p < 0.01$) measured by Barrett-Lennard Relationship Inventory (BLRI; Barrett-Lennard, 1962) (Malin, 2016).

Video A is 59 seconds long and depicts a woman with PTSD symptoms who says she feels misunderstood by her husband. She describes her symptoms and her inability to stop thinking about her concerns.

Video B is 47 seconds long and shows a young man with a conflictual relationship with his sister that frustrates him and negatively influences the relationship with his nephew.

**Procedure**

Data collection occurred during two academic years (2018-2019 and 2019-2020). Participants were invited to participate in a study investigating the effect of different training methods on key clinical skills. Their participation was voluntary, and there was no reward for participating. Students and coaches met three times during the study. In the first meeting, coaches explained that the study included two training sessions and the self-recording of participants’ responses to a pre-recorded video of a therapy situation where a client expresses their concerns.

The schedule was explained to the participants and the importance of responding to all the videos after each training session and before the next was stressed. However, to maintain the internal validity of the study, no explanation about the differences of the groups was disclosed. Additionally, no discussion of DP was conducted. At the end of the first meeting, participants filled an informed consent explaining all the procedures and data treatment policy. After agreeing in participating in the study, all participants filled the demographic form and were randomly allocated to one of the two conditions.

After the first meeting, participants received an email with their credentials to log in to their Theravue® account, and they were requested to record the first response to both video A and B before the second meeting with the coaches. Until this point, the procedure was the same for both the experimental (DP) and the control (TAU) groups. From the second meeting onward, the participants’ activities differed depending on the group to which they are allocated.

The DP workshop consisted of a 90-minute group workshop with a certified DP coach who was also a university lecturer. In this group, participants had a brief introductory discussion about empathy and its importance in therapy outcomes. The participants were also told that the purpose of this workshop was to help them get feedback on their performance and to tailor training to improve it. The coach invited the first participant to show one of their responses to the videos. After watching the responses, objective and precise performance feedback was given to each participant, followed by an open group discussion of the performance. The coaches proposed objective exercises involving verbal and/or nonverbal tasks that were at the edge of the participants’ current capacity. These may pertain to the participants’ attitude, voice, responsiveness, or understanding of the client’s situation. The participant then re-watched the video and tried to give a new response taking into consideration the feedback and the proposed exercises, which were rehearsed at least 3 times for each response. This procedure occurred for all participants, and group discussion of individual performance was encouraged. At the end of the session the participants were invited to form small groups and practice the proposed exercises to improve therapeutic skills through role play. They were also asked to train alone with these exercises before the next session. The coach provided feedback to the groups during role play. All Rousmanière’s (2017) assumptions of DP were met in this training.

The TAU workshop also consisted of a 90-minute group workshop with a university lecturer who was also an experienced psychotherapist. This condition aimed to simulate the environment of a more traditional lecture. The lecturer gave a presentation on
empathy and its importance in clinical outcomes. The lecturer presented empathy literature and initiated a debate on the importance of empathy in psychotherapy. Theoretical papers and books regarding this topic were shown. Topics such as therapist attitude, voice, responsiveness, and understanding of the client’s situation were debated and examples discussed. To avoid differences in content in the discussion of empathy, the DP and the TAU workshop explored the same content when addressing empathic skills.

These processes were repeated two times during the study: First, the participants recorded their responses to the videos taking into consideration the fact that they were to have an “empathic intervention”; they then had their first DP or TAU session, after which they recorded their response to the videos again; in the following week, they had their second and last sessions (either DP or TAU) and repeated the process a third time.

### Results

#### Empathic Quality of Responses Between Groups

The comparison of empathic scores between the experimental (DP) and control group (TAU), assessed through a Mann-Whitney test, partially support the first research hypothesis.

The **$DP$** ($Mdn = 3.58$) and **$TAU$** ($Mdn = 2.78$) conditions did not differ at baseline $U = 126$, $z = -1.13$, $p = .271$, $r = .19$. After the first intervention, there was no difference between **$DP$** ($Mdn = 4.15$) and **$TAU$** ($Mdn = 3.54$) $U = 86$, $z = -1.58$, $p = .119$, $r = .28$. However, in the last intervention, the **$DP$** group ($Mdn = 4.90$) performed significantly better than the **$TAU$** group ($Mdn = 3.84$) $U = 45$, $z = -2.01$, $p = .046$, $r = .39$.

![Empathy scores](image)

**Figure 2.** Empathy scores at baseline and post-interventions

<table>
<thead>
<tr>
<th></th>
<th><strong>$DP$</strong></th>
<th><strong>$TAU$</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$Mdn$</td>
<td>$Mdn$</td>
</tr>
<tr>
<td>Time 1</td>
<td>3.58</td>
<td>2.78</td>
</tr>
<tr>
<td>Time 2</td>
<td>4.15</td>
<td>3.54</td>
</tr>
<tr>
<td>Time 3</td>
<td>4.90</td>
<td>3.84</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>$U$</th>
<th>$Z$</th>
<th>$p$</th>
<th>$r$</th>
</tr>
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<tbody>
<tr>
<td>Time 1</td>
<td>126</td>
<td>-1.13</td>
<td>.271</td>
<td>.19</td>
</tr>
<tr>
<td>Time 2</td>
<td>86</td>
<td>-1.58</td>
<td>.119</td>
<td>.28</td>
</tr>
<tr>
<td>Time 3</td>
<td>45</td>
<td>-2.01</td>
<td>.046</td>
<td>.39</td>
</tr>
</tbody>
</table>
Empathic Quality of Responses Within Groups

Friedman’s ANOVA was used to test if the participants’ performance increased within groups. That is, if the participants’ performance on the DP group and the TAU group increased, separately. For participants in the DP group, there was a significant increase in the responses’ empathic quality, $X^2 (2) = 9.143, p = .010, W = .327$. Dunn-Bonferroni post hoc tests were carried out to analyse the differences between the three measures and these yielded a significant difference between the baseline (time 1) and the last intervention (time 3) $X^2 (2) = -1.143, p = .007$. There were no significant differences in the control (TAU) group for the different measures $X^2 (2) = 2.167, p = .338, W = .090$. These results partially support the second hypotheses since participants in the experimental group performed better after two DP interventions and participants in the control condition did not improve their responses.

Table 3. Friedman’s ANOVA for within-groups comparisons at the three times

<table>
<thead>
<tr>
<th></th>
<th>Time 1</th>
<th>Time 2</th>
<th>Time 3</th>
<th>$X^2$</th>
<th>df</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP</td>
<td>3.58</td>
<td>4.15</td>
<td>4.90</td>
<td>9.143*</td>
<td>2</td>
<td>.327</td>
</tr>
<tr>
<td>TAU</td>
<td>2.78</td>
<td>3.64</td>
<td>3.84</td>
<td>2.167</td>
<td>2</td>
<td>.090</td>
</tr>
</tbody>
</table>

*p = 0.01

Table 4. Dunn-Bonferroni post hoc for DP condition

<table>
<thead>
<tr>
<th></th>
<th>$X^2$</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time 1 – Time 2</td>
<td>-.571</td>
<td>2</td>
<td>.392</td>
</tr>
<tr>
<td>Time 2 – Time 3</td>
<td>-.571</td>
<td>2</td>
<td>.392</td>
</tr>
<tr>
<td>Time 3 – Time 1</td>
<td>-1.143</td>
<td>2</td>
<td>.007</td>
</tr>
</tbody>
</table>

Discussion

Results revealed significant differences in scores for the DP condition across the three time points. Post hoc analysis using Dunn-Bonferroni correction indicated no significant differences in scores between Time 1 and Time 2 or between Time 2 and Time 3 in the DP condition. However, a significant difference was observed between Time 3 and Time 1, suggesting notable changes in scores during this interval.

For the TAU condition, there were no statistically significant differences in scores across the three time points. It seems that the DP condition exhibited significant changes in scores over the three time points, while the TAU condition did not show significant differences across the assessed time points. No interaction between training group and time was found.

While the data do not reveal an interaction effect between the training group and time, we posit that these findings may serve as a promising indicator of the potential efficacy of DP. Nevertheless, the absence of interaction between time and training method implies that the conclusions of this study should be approached with caution.

Of particular significance is the recognition that DP is a medium- to long-term method, and it is crucial that its application remain consistent over time. Unfortunately, due to the constraints of this study, only two sessions of DP or TAU were allowed, potentially compromising the ability to thoroughly examine the effects of DP.

Our findings go along with Pearlman and colleagues’ (2020) and Westra and colleagues’ (2020) results, where participants who were
under an active learning condition improved compared to participants in a TAU condition, and also with Chow and colleagues (2015) and Goldberg and colleagues (2016) findings, where participants under an DP training improved their clients’ outcomes.

The fact that the effect of DP is only significant after the second intervention goes along with the DP literature that states that DP training has no immediate results (Ericsson et al., 1993; Ericsson & Pool, 2016; Tracey et al., 2014; Miller et al., 2018). In fact, DP training is a highly mental and physically demanding activity, which requires extreme focus and effort for short periods of time, over a long period of time (Ericsson et al., 1993; Ericsson & Pool, 2016). Consequently, trainees need to focus on long-term achievements and gains to sustain their practice (Ericsson et al., 1993; Ericsson & Pool, 2016). This dynamic may pose a challenge for DP training, particularly in solitary practice, as aspiring psychotherapists express that they feel overwhelmed when practicing alone and exhibit a preference for working in the presence of a coach rather than engaging in solitary assignments (Hill et al., 2019).

As indicated by the literature (Goldberg et al., 2016), there are no substantial differences in performance associated with years of experience. However, it is plausible to hypothesize that students without previous clinical experience may have a lower baseline empathy compared to experienced therapists, thus making them more susceptible to improvement. Research indicates that inexperienced therapists or novice trainees enhance their clinical skills through various means such as modeling, practice, and feedback.

(Hill & Lent, 2006). Consequently, one might speculate that DP training for experienced therapists could take a longer time to yield positive results. To ensure the sustainability of the observed trends, ongoing monitoring of performance would be essential.

Our results suggest that despite being an “individualised training activity” (Ericsson & Lehmann, 1996, pp. 278–279), DP trainings can be effective when applied in a group setting since it is possible to provide individualized feedback and training within group activities. This might be promising for the application of DP in continuing learning (e.g., supervision, postgraduate degrees, professional development workshops, etc.) since this is often occurs in groups. Moreover, as suggested by Westra and colleagues (2020), group sessions may be helpful for trainees since they can watch other trainees’ performance and feedback. The effectiveness of DP in groups reduces the effect of certain limitations of individualized DP for both the trainee and the coach. Personal DP sessions might be too expensive for trainees and too time-consuming for coaches. Hence, the suggested effectiveness of group DP training might remove these two considerable DP constraints. We stress that in a group training it is necessary to ensure a non-judgmental and safe environment, as well as to avoid non-purposeful and non-individualized repetition (Ericsson et al, 1993; Ericsson & Pool, 2016; Rousmaniere, 2017).

The results of this study may provide insights into the effect of commonly used methods in continuing education, such as lectures and theoretical supervision, on the skills of psychotherapy trainees. One common criticism is that continuing learning methods tend to have a theoretical rather than a practical nature (Rousmaniere et al., 2017) and offer no feedback focused on individual performance (Ericsson & Pool, 2016). While this type of training is valuable for knowledge development in the field of psychotherapy, it may not fully address the imperative for enhancing the performance of psychotherapists (Rousmaniere, 2017). The trend observed in the results of the present study suggest that incorporating DP training into these methods could mitigate the limitation of a purely expository training approach.

DP applied to psychotherapists and psychology students’ training is a recent area of study and therefore still lacks empirical literature. The present results advocate that interpersonal skills such as empathy might be improved by DP training, at least in participants with no previous clinical skills. However, it is important to bear in mind that all the points
mentioned above indicate that this study is a proof of concept. Its method needs to be applied to other populations and include more training sessions so that results can be tested and corroborate (or not) the trend demonstrated by the presented data.

**Limitations and Future Research**

As previously mentioned, the study sample comprises students with no clinical experience. The sample size is also a limitation of the study, as there is a small number of participants in each condition which might increase the probability of a Type II error.

Regarding the study procedure, participants were aware that their recordings would be evaluated. These recordings may have contributed to a feeling of being unsafe and a sense of judgment, which is not conducive to DP training (Ericsson et al., 1993; Rousmaniere, 2017). Last, since training with practical activities is uncommon, and undergraduate students are used to theoretical lectures, our results might have suffered from a novelty effect. This effect may occur when an innovation is introduced (e.g., a new treatment) and increases participants’ motivation; that is, the newness of the training approach, rather than the experimental manipulation, produced an effect.

For future research, it is crucial to replicate this study with a larger sample size to control for and analyze differences among experienced and non-experienced therapists, while also incorporating long-term follow-ups for data collection. The expanded sample size should include both trainees and experienced therapists to investigate potential interaction effects between conditions and therapist experience. Additionally, exploring whether the hours spent practicing alone affect participants’ improvement would provide valuable insights. Longitudinal monitoring of participants’ performance and the collection of clients’ outcomes over time are essential aspects to consider. To ensure the quality of the DP manipulation, participants’ evaluation of DP training quality and coaches’ competence, use of the Deliberate Practice Coach Competency Scale (DPTCS) (Vaz & Rousmaniere, 2020), should be integrated. Furthermore, it is recommended to replicate this study with individualized DP sessions to examine potential differences between group and individual training.

These findings suggest that DP might be a reliable training method to help undergraduate students develop clinical skills such as empathy. Hence, the present study contributes not only to the development of scientific research on the application of DP to students’ training but also to the effectiveness of current teaching practices.

**Authors’ Declarations**

The authors declare that there are no personal or financial conflicts of interest regarding the research in this article.

The authors declare that the research reported in this article was conducted in accordance with the Ethical Principles of the *Journal of Expertise*.

The authors declare that they are not able to make the dataset publicly available but are able to provide it upon request.

This article is an extension of the first author’s master’s dissertation, *The Application of a Deliberate Practice Training in the Improvement of Students’ and In-training Psychotherapists’ Empathic Skills* (2020), available here: http://hdl.handle.net/10400.12/7746.

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Appendix

Measure of Expressed Empathy (MEE)

Measure of Expressed Empathy (MEE) (Watson, J. C., 1999)
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Five-minute segments should be rated. Each segment is given a global rating on a nine-point scale on therapist’s behaviours that reflects aspects of expressed empathic communication. To score the measure add the items and calculate the mean.

1. Does the therapist’s voice convey concern?
Listen for high energy, colour (expressive of the emotions that it is trying to convey, flexible, musical), soft resonance that matches the verbal expression of concern; calmness, a grounded, open quality to the therapist’s voice. The voice should not sound rigid
0..................2...............4.................6.....................8
Never 25% Half the time 75% All the time

2. Is the therapist’s voice expressive?
(Listen for high energy, colour, varied pitch; is it expressive where it needs to be?)
0..................2...............4.................6.....................8
Never 25% Half the time 75% All the time

3. Does the therapist’s vocal tone or response match the intensity of the client’s feelings?
(Listen for high energy, colour, emphasis, pitch variation that matches intensity of client’s feelings).
Note: There are neutral states and in that case the therapist would match that state – doesn’t necessarily have to be highly emotional or field with intense feeling. (The vocal tone should convey a sense that therapist can meet the client at the same level of intensity; voice should show that therapist can handle the intensity and can hold client’s feelings e.g. show comfort when client is depressed; A score of 0 = nonchalant, non-caring attitude captured in vocal tone or complete mismatch between the subject matter that the client is conveying and the therapists response (e.g. vocal tone worried or flat if client excited).
0..................2...............4.................6.....................8
Never 25% Half the time 75% All the time

4. Does the therapist convey warmth and an atmosphere of safety?
(Does the therapist smile, maintain eye contact, convey softness, and appear receptive to the client’s concerns (receptiveness is not involvement; more low key respectful, open); (0 = “cold fish”; blank); (Does the therapist communicate an atmosphere of safety, of “holding” for the client?)
0..................2...............4.................6.....................8
Never 25% Half the time 75% All the time

5. Is the therapist responsively attuned to the client’s inner world moment by moment in the session?
(Does the therapist provide moment-to-moment acknowledgements, not let things go by; pick up the live edges of the client’s experience; fine-tune their responses to fit with their client’s? Is the therapist attuned to client’s facial and/or non-verbal behaviour that may be different from the content of client’s responses? Is the therapist attentive to nuances of meaning and feeling (doesn’t package what was said
and just reiterate it back?). Responses are not just a reflection of surface content but show an understanding of the client’s inner world. (Inner world is defined as client’s feelings, perceptions, memories, construal, bodily sensations (felt sense, and core values).

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time

### 6. Does the therapist look concerned?
(Does the therapist look engaged and involved and maintain eye contact, or does the therapist look bored, disengaged, blank, and listless? Being attentive is an aspect of concern)

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time

### 7. Is the therapist responsive to the client?
(Does he or she adjust his/her responses to follow the client’s track?)

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time

### 8. Do the therapist’s responses convey an understanding of the client’s feelings, and inner experience?
(Do the therapist’s responses show a sensitive appreciation and gentle caring for the client’s feelings and inner world? Do the therapist’s responses convey an emotional understanding of the client’s inner world, for example – “so you’re just like a little girl in the corner?”). Does the therapist convey the emotional meaning and emotional significance of events? Feelings are not just labels of anger, sadness, etc., but can also be metaphors. Keep in mind that if the therapist hasn’t said much 5-minute segment that may be appropriate.

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time

### 9. Do the therapist’s responses convey an understanding of the client’s cognitive framework and meanings?
(It is expected that most therapists will show an understanding of what their clients are saying. To score 0 one person would have to be saying the sky is blue and the other talking about loud music so that there is no overlap in content or continuity between the participants). Ask yourself “Are they on the same page?”). Is there a back and forth quality to the interaction? Is the therapist following what the client is saying? To score highly the therapist captures the client’s construal/or idiosyncratic perception.

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time

### 10. Is the therapist accepting the clients feeling and inner experience?
(8 = sincere i.e. conveying that you mean what you say – being authentic, open, prizing, genuine; 0 = invalidating of the client’s experience and dismissing their perspective or being insincere, putting on an act; trying to appear empathic but coming across as inauthentic.).

0………………2……………4………………6………………8
Never 25%  Half the time 75%  All the time