PERFECTIONISTIC SELF-PRESENTATION IN GROUP THERAPY: INTERPERSONAL
BEHAVIOURS AND THERAPEUTIC PROCESS FACTORS

by

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Abstract

The study investigates the associations among perfectionistic self-presentation, interpersonal difficulties, and the process of group therapy based on predictions from the Perfectionism Social Disconnection Model. The study aims to determine whether perfectionistic self-presentation negatively impacts the group therapy process generally and on change over the course of the treatment block. The study also aims to determine whether interpersonal difficulties intervene on the negative associations among perfectionistic self-presentation and group therapy processes. Sixty-nine patients within nine groups attending the Southdown Institute and receiving intensive psychodynamic interpersonal group treatment participated in the study. Patients completed the Perfectionistic Self-Presentation Scale (PSPS; Hewitt et al., 2003), the Inventory of Interpersonal Problems (IIP; Horowitz et al., 1988), the Impact Message Inventory (IMI; Kiesler & Schmidt, 1993) - patient ratings of therapists, the California Psychotherapy Alliance Scales - Group (CALPAS-G; Marmar et al., 1989), and the Curative Climate Inventory (CCI; Furhiman et al., 1986) over the course of one week of daily group therapy. Multilevel modeling analyses were used to analyze direct effects among perfectionistic self-presentation facets and alliance scales and climate factors, as well as indirect effects through interpersonal variables. Perfectionistic self-presentation facets were associated negatively with total alliance and patient contribution scales of the alliance, and positively with interpersonal problems. Perfectionistic self-presentation facets were not associated with change in alliance over the course of the treatment block, with climate factors, or with patients' ratings of therapists' interpersonal impact. Findings suggest that perfectionistic self-presentation influences interpersonal problems and the process of group therapy; however, there was no support for an indirect and intervening role for interpersonal variables in the associations among perfectionistic self-presentation and therapeutic group processes.
Lay Summary

This research looks at whether the patient's personality style of perfectionism negatively influences the patient's interactions with others and the process of group psychotherapy. I looked at the patient's need to appear to others as perfect and the way in which he-or-she seeks to meet this need through the expression of perfection in his-or-her social behaviours with others. I also looked at the problems the patient experiences with others, and the patient's perception of others' behaviours. As well, the patient's connectedness in the therapy group was evaluated. It was found that patients with this need to seem perfect contributed less to their connectedness to the group. These patients also had more problems in their interactions with others. Yet, some of the expected associations in this study were not found. Overall, these patients experience more social problems and more difficulties within group therapy.
Preface

This dissertation is an original intellectual product of the author, J. Kaldas. However, it is ultimately based on archival data that had been collected at the Southdown Institute in collaboration with S. Mikail. The theoretical framework of the dissertation is as a result of working alongside of P. Hewitt. Statistical analyses are my original work with the guidance of J. Biesanz. Interpretation and manuscript composition are my original works with supervisory assistance from P. Hewitt.

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Introduction

The role of personality in psychotherapy research has been of much interest in the past and this interest has been renewed. Historically, in 1953, Cronbach noted the methodological importance of investigating patients' personality and individual differences throughout the course of therapy in understanding more about the process and outcome of therapy. In addition, Kiesler (1966) discussed the *patient uniformity myth*, that patients are heterogeneous even within diagnostic groups, and that psychotherapy can be differentially effective depending on these patient differences. However, in the mid 20th century, different schools of thought were formed and became increasingly prominent, such as behaviourism and the cognitive revolution, which emphasized the situational contingencies of observable behaviours and moved away from the individual differences of patients (Lambert, 2013).

At the same time, in the early and mid 20th century, comparative treatment research demonstrated the *dodo bird effect*, that is, that different types of psychotherapy were equivalently beneficial to patients (see Luborsky, Singer, & Luborsky, 1975). Thereafter, this finding generated two general lines of further research: 1) investigations of the elements of psychotherapy that are nonspecific to the different types and that explain the common benefit across therapy types, and 2) investigations of the interaction between types of psychotherapy and types of patients to try and find differences in benefit. Within this second line of research, however, the majority of psychotherapy research equated patient characteristics with psychological diagnosis, selecting patients and treatments based on DSM classifications. That is, much contemporary psychotherapy research has focused on symptom reduction. What's more, symptom reduction without reductions in characterological vulnerabilities can result in relapse and treatment effects are most likely found and maintained when changes in personality
functioning and the development of resilience are seen (Blatt, Auerbach, Zuroff, & Shahar, 2006; Hewitt, Habke, Lee-Baggley, Sherry, & Flett, 2008). That is, the whole being of the patient should be considered in tailoring psychotherapy (Norcross & Wampold, 2011). Moreover, instead of treatment type and diagnostic group, the primary determinants of treatment outcome are the quality of the therapeutic process, and the patient's personality and its impact on the treatment process (Blatt, 1999; Blatt et al., 2006). The present study focuses on this personality-process link. Yet, choosing and identifying appropriate personality variables for study needs to be done carefully, as there could be an immense number of possible variables with differing levels of influence on treatment. Beutler (1991), for instance, has emphasised that the choice of patient variables requires theoretical and empirical justification.

Within this historical context, the aim of the current study was to examine common process factors and look at these factors in relation to specific personality, that of a component of perfectionism, and to individual differences in ways of relating to others. In particular, this study investigated one component of the construct of perfectionism, the interpersonal expression of perfectionism, and therapeutic process variables. I also investigated indirect effects through the patients' interpersonal vulnerabilities. This was investigated in the context of group psychotherapy. It should be noted that while group therapy has been introduced in the 1940s, it is increasingly in use in contemporary clinical practice (Yalom & Leszcz, 2005) and research on group therapy is thus increasingly important. Subsequently, a comprehensive conceptualization of perfectionism is reviewed, an interpersonal framework of perfectionism is discussed with theoretical and empirical justifications for perfectionistic self-presentation's place in treatment research; then group process factors and interpersonal behaviours are considered.
Comprehensive Model of Perfectionistic Behaviour

Contemporary research has used a variety of conceptualizations and measures of perfectionism, some unidimensional and some multidimensional (Enns & Cox, 2002). For instance, the Dysfunctional Attitudes Scale (DAS; Weissman & Beck, 1978) was designed to measure attitudes or cognitions that may predispose the individual to depression and identifies perfectionism as a unidimensional self-related attitude subtype. Another measure is the Frost Multidimensional Perfectionism Scale (F-MPS; Frost, Marten, Lahart, & Rosenblate, 1990). In an effort to tie in various past definitions of perfectionism, six perfectionism trait cognitive measures were identified: Concern over Mistakes, Doubts about Actions, Personal Standards, Organization, Parental Expectations, and Parental Criticism. There are several other measures of perfectionism as well, such as the Eating Disorder Inventory - Perfectionism subscale (EDI; Garner, Olmstead, & Polivy, 1983), and the Almost Perfect Scale - Revised (Slaney, Mobley, Trippi, Ashby, & Johnson, 1996). Within the broad body of research using various measures of perfectionism, the present study focused, however, on one component, the relational component, of a conceptualization of perfectionism developed by Hewitt, Flett and colleagues and described here.

This conceptualization of perfectionism, the Comprehensive Model of Perfectionistic Behaviour (CMPB), is multifaceted and multileveled with several components functioning as diathetic vulnerability factors, that may be most apparent when an individual is faced with a subjectively significant stressor (Hewitt, Flett, & Mikail, 2017). Perfectionism acts at a motivational trait level (Hewitt & Flett, 1991), directing the individual to be preoccupied with striving for perfection; it also acts at a cognitive level (Flett, Hewitt, Blankstein, & Gray, 1998), with thoughts expressed to and an internal dialogue with oneself around perfection and failure;
and it also acts at a behavioural and relational level (Hewitt et al., 2003), in representing to others the purported perfection. Each component overlaps and interacts with each other but each also contributes uniquely to the conceptualization of perfectionism (Hewitt et al., 2017).

One component of the CMPB incorporates the personal and motivational trait dimensions that energize and drive perfectionistic behavior (Hewitt & Flett, 1991; Hewitt, Flett, Turnbull-Donovan, & Mikail, 1991). These three trait dimensions, self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism, can be distinguished by the person to whom perfection is focused on and the person from whom the perfection is attributed.

A second component of the CMPB addresses the information processing, internal dialogue, element of the perfectionism construct (Flett et al., 1998). This intrapersonal cognitive component involves automatic thoughts of a perfectionistic orientation, including preoccupations with flawlessness, mistakes, and harsh evaluation.

Finally, as the trait component of the CMPB captures the content of perfectionism and the cognitive component, the internal dialogue of perfectionism, the third component captures the interpersonal expression of perfectionism. The perfectionistic self-presentational component entails a stable outward style of presenting perfection (Hewitt et al., 2003). Whereas the trait dimensions look at the need for perfection and the need to avoid imperfections and the cognitive component, the thoughts of perfection and imperfection, the self-presentation facets look at the need to appear to others as perfect and the need to avoid appearing imperfect. Perfectionistic self-presentation alongside trait perfectionism and perfectionism cognitions taps an important component of the perfectionism construct, each component contributing differently to outcomes (Hewitt et al., 2003). Additionally, perfectionistic individuals differ among themselves by their
levels on the different components, but also by their combination of the different components 
(Hewitt et al., 2003; Hewitt et al., 2017).

The perfectionistic self-presentational component of perfectionism includes three facets; one proclaiming in nature (perfectionistic self-promotion), and two concealing in nature (nondisplay of imperfections and nondisclosure of imperfections; Hewitt et al., 2003). The individual with perfectionistic self-promotion tends to show and make people aware of his or her own perfection. This facet involves an active pursuit to demonstrate an image of the individual's purported perfection and draws others' attention to the promoting individual. This style is characterised by a compulsive drive (Sherry, Hewitt, Flett, Lee-Baggley, & Hall, 2007) to impress others, to gain admiration and respect. This behaviour has been found to have a grandiose narcissistic (self-enhancing, exhibitionistic) nature to it (Sherry, Gralnick, Hewitt, Sherry, & Flett, 2014; Casale, Fioravanti, Rugai, Flett, & Hewitt, 2016).

On the other hand, nondisplay of imperfections reflects a style in which the individual avoids any behavioural imperfections in front of others. Similarly, the nondisclosure of imperfections facet is an avoidant style and indicates an individual's unwillingness to verbalise flaws to others. Both of these facets are concealing though the concealment is achieved through different means, behaviourally or verbally (Hewitt et al., 2003). These facets involve an attempt to become 'invisible" to others, in order to prevent others from knowing the individual's imperfections. The two concealing styles of perfectionistic self-presentation have been found to be associated with vulnerable narcissism (Casale et al., 2016), which captures a personality style involving heightened distress, hypersensitivity, fragile self-esteem, feeling ashamed, interpersonal fears, and withdrawal (Dickson & Pincus, 2003). Also, concealing styles of perfectionistic self-presentation are especially associated with relational, emotional and identity
dysregulation, and relational and expressive inhibition (Sherry et al., 2007), with negative self-appraisals of mattering to others (Flett, Galfi-Pechenkov, Molnar, Hewitt, & Goldstein, 2012), and with external (negative perceptions of others’ evaluation) and internal (negative self-evaluation and affect of inadequacy) shame (Ferreira, Trindade, Ornelas, 2015).

Given the present study's interest in interpersonal variables and the interpersonal theoretical framework (to follow), the study centers on the relational component of the CMPB, that of the perfectionistic self-presentation facets as these represent the interpersonal expression of perfectionism and as these may be particularly relevant in group psychotherapy (e.g., Flynn, 2002; Hewitt, Flett, Mikail, Kealy, & Zhang, 2018).

Though the study focuses on one component of the CMPB, the literature reviewed includes studies with other measures of the perfectionism construct to provide a broad understanding of the relationships of interest. It is important to note that though each measure is different there are significant associations among them. For instance, Enns and Cox (2002) discussed several perfectionism measures, such as the Hewitt & Flett Multidimensional Perfectionism Scale, the Frost Multidimensional Perfectionism Scale, and the Almost Perfect Scale-Revised. Hewitt and colleagues (2013) examined and found associations among the Perfectionistic Self-Presentation Scale, the Hewitt & Flett Multidimensional Perfectionism Scale, and the Frost Multidimensional Perfectionism Scale. Further, Stairs, Smith, Zapolski, Combs and Settles (2012) discussed and compared fifteen perfectionism measures including the Frost Multidimensional Perfectionism Scale, the Hewitt & Flett Multidimensional Perfectionism Scale, the Perfectionistic Self-Presentation Scale, the Perfectionism Cognitions Inventory, the Dysfunctional Attitudes Scale, and the Almost Perfect Scale-Revised. These associations among several perfectionism measures suggest that these measures assess the same broad construct of
perfectionism though from different angles. As well, some authors have used dimensions from a few different measures in combination to create latent variables of perfectionism (e.g., Dunkley, Blankstein, Berg, 2012), again suggesting some level of overlap between measures. This convergence among measures allows us to examine the perfectionism literature from a broad perspective. Still, in the present study, I opt to focus on one specific component of perfectionism and its facets in order to gain further understanding in the specific mechanisms in question.

**Perfectionism Social Disconnection Model**

The current study aims to investigate the associations among perfectionistic self-presentation, the process of group therapy, and interpersonal vulnerabilities. The Perfectionism Social Disconnection Model (PDSM; Hewitt, Flett, Sherry, & Caelian, 2006; Hewitt et al., 2017; see Fig. 1) serves as the framework. Although the PSDM looks at perfectionistic behaviours generally and I review this here, I afterward focus specifically on the PSDM and interpersonal expressions of perfectionism.

Generally, the model posits that components of perfectionism, including perfectionistic self-presentation, begin from the individual's insecure attachment which results from the non-attunement and asynchrony between the individual's needs as a child and his-or-her caregivers' responses (Kohut, 1971; Hewitt et al., 2017). Securely attached individuals feel comfortable with balancing both intimacy and independence (Bowlby, 1983). The insecure attachment that occurs in perfectionism results from unsatisfied needs, to belong and for self-esteem, which can persist through the lifespan (Hewitt et al., 2017). This poor fit experienced in early life leads the individual to view others negatively, as unavailable and critical, to view the self negatively, as defective and unworthy, and to lack feeling secure and safe in relationships. These distorted views of self and others are then accompanied by intense emotional experiences of shame, fear,
anger, and so forth (Stolorow, Brandchaft, & Atwood, 1987). These include fears of confirmation and needs to disconfirm these distorted views and beliefs of self and others. That is, perfectionism overall is driven by fears of abandonment and rejection and by needs for acceptance and love from others. On the whole, perfectionism is the product of two fundamental developmental processes, relational and self-definitional concerns. Numerous authors have theorized and identified similar dual personality dimensions (e.g., Ainsworth, 1979; Bowlby 1983; Kiesler, 1983; Blatt, 1990). In healthy individuals, these processes interact and develop to be maturely and mutually balanced. A considerable imbalance in these processes, that is, an overemphasis or underdevelopment of either of these processes, is implicated in psychopathology. Perfectionism thus develops as a defensive strategy against a sense of not fitting in with others and as a reparative strategy for the self being defective (Hewitt et al., 2017).

The latter portion of the PSDM (see right side of Fig. 1) suggests that the perfectionistic individual then is hypervigilant to ambiguous signs by perceived unavailable and critical others (Burns, 1980). These signs may then be interpreted as confirmation of one's fears and views of self as defective and unworthy (e.g., Wagner, Kiesler, & Schmidt, 1995). In other words, according to Hewitt and colleagues (2017), the perfectionistic individual is likely to perceive others as interacting in a rejecting and non-accepting manner and may also hold him-or-herself in a distant and rigid manner in these interpersonal interactions. Perfectionists may engage in avoidance and react with anxiety in their relationships, either by withdrawal from relationships in fear of being hurt and not perfect enough, or by sensitivity to and generation of stress and negative responses in others, and experience poor-quality relationships (Hewitt & Flett, 2002; Hewitt et al., 2017). Thus, although perfectionism works towards hopes of finding a sense of belonging and self-esteem, it produces the opposite effect by generating social disconnection,
both through the individual's distorted perceptions of interpersonal interactions and the individual's cautious and inauthentic behaviours, such as engaged in through perfectionistic self-presentation. This sense of failing to connect with others then heightens the negative emotional experiences associated with the perfectionistic individual's view of self and others and likely leads into experiences of distress, turmoil, poor psychological outcomes. It should be noted that the perfectionistic individual is likely to interpret the failed social connection to have occurred as a result of not being perfect enough (Hewitt et al., 2006; Hewitt et al., 2017). Consequently, this interpretation then exacerbates the unmet needs and the perfectionistic behaviours, such as self-presentation, increasing this defensive dysfunctional strategy (Hewitt et al., 2017).

More specifically, in reference to the interpersonal expression of perfectionism, the PSDM indicates that the individual's temperament (i.e., anxious and hypersensitive) within the family's culture may lead the individual to develop perfectionistic self-presentational tendencies (Hewitt et al., 2017). Family environments that may particularly enhance this self-presentation involve contexts in which the expression of feelings is dismissed or criticized; or when the needs of the individual are disregarded in favor of the image management of the family. This suggests that the individual may be insecurity attached to important others, that his-or-her needs have not been met, and that he-or-she comes to hold a profound sense of dissatisfaction with him-or-herself. The individual may come to perceive that he-or-she must appear as perfect (e.g., engage in proclaiming one’s perfection) or not appear as imperfect (e.g., engage in concealing imperfections). Proclaiming perfection or concealing imperfections are thought to develop as strategies to attempt to achieve a sense of mattering and belonging with others and to repair the deeply flawed self. Additionally, puberty is a developmental stage when perfectionistic self-presentation may be exacerbated as the individual may see changes beyond his-or-her control
and may believe that he-or-she must be more stringent in striving to project a perfect image. Such may be the case, for instance, with anorexic adolescents (e.g., Bruch, 1988). Accordingly, the perfectionistic self-presenting individual then becomes hypervigilant to cues of expectations and expressions from others, and thus becomes more likely to perceive others as responding negatively, to interacting with others in a more withdrawn or aversive manner, and to experiencing intense emotional reactions and psychological distress and dysfunction.

The current study focuses on the latter portion of the PSDM (i.e., right side of Fig. 1), examining the connection between interpersonal expression of perfectionism (i.e., perfectionistic self-presentation) and experiences of disconnection from others that occur via interpersonal vulnerabilities such as interpersonal hostility and sensitivity. Within the context of group therapy and of the current study, it is expected that the associations among the patients’ perfectionistic self-presentation and poor therapeutic process factors (i.e., a form of social disconnection) may be seen through patients’ problematic interpersonal behaviours and perceptions of others’ behaviours. That is, applied to the context of group therapy, the model posits that perfectionistic self-presenting patients engage in and perceive aversive interpersonal behaviours leading to a poor therapeutic process.

**Empirical Support.**

**Overview of Developmental Perspective on Perfectionistic Self-Presentation.** The empirical developmental literature on perfectionistic self-presentation is limited, as such I briefly review support for the broad perfectionism construct and place greater emphasis on perfectionistic self-presentation where possible. First, the perfectionism construct has been empirically found to be equally associated with both the relational and the self-definitional processes. This was found with a few perfectionism components, such as with self-oriented and
socially prescribed perfectionism (Flett, Hewitt, Garshowitz, & Martin, 1997), and with perfectionism as assessed by the revised Personal Style Inventory (Bagby, Parker, Joffe, Schuller, & Gilchrist, 1998; Desmet Coemans, Vanheule, & Meganck, 2008; Hong & Lee, 2001). This suggests that perfectionism is a unique personality construct involving an over-concern on issues both of connection with others and self-esteem. That is, the perfectionistic individual may be preoccupied with issues of interpersonal relatedness, perhaps even lacking differentiation of self from others, and of establishing and maintaining a sense of self-concept, including concerns over control and self-worth.

Second, perfectionism has been associated with insecure attachment styles, for instance, socially prescribed perfectionism has been associated with higher levels of both anxious-preoccupied and fearful-avoidant attachments (Flett, Hewitt, Oliver, & Macdonald, 2002). More importantly, in terms of perfectionistic self-presentation, perfectionistic self-promotion was found to relate to higher anxious-preoccupied attachment, and nondisclosure of imperfections with both fearful-avoidant and dismissive-avoidant attachment (Chen et al., 2012). Thus, the literature supports the developmental portion of the PSDM, though this is not the focus of the present study.

**Overview of Perfectionistic Self-Presentation in the Interpersonal Distress Domain.**

Given the developmental influence on perfectionism, including perfectionistic self-presentation, it can be expected that the dysfunctional influence extends to the interpersonal domain. As the perfectionistic self-presentation component is a newer addition to the perfectionism construct, the literature examining this specific component and interpersonal distress is limited in comparison to literature examining the broad perfectionism construct. I review literature with the
broad perfectionism construct first then turn to review literature with perfectionistic self-presentation.

Self-report research has indicated that perfectionistic individuals identify several interpersonal difficulties. For instance, Martin and Ashby (2004) found that individuals with elevated levels of maladaptive perfectionism reported greater levels of fear of intimacy in relationships. Dunkley, Sanislow, Grilo, and McGlashan (2006) found that perfectionistic attitudes was longitudinally related to more negative social interactions and lower perceived social support. In another study, socially prescribed perfectionistic parents were found to have higher parental stress and lower parental self-efficacy (Lee, Schoppe-Sullivan, & Kamp Dush, 2012). These studies suggest that perfectionistic individuals subjectively report experiencing more interpersonal vulnerabilities and difficulties relating with others.

In addition to the perfectionistic individual’s subjective experience of his-or-her social world, an individual’s perfectionism may impact his-or-her relationships with others, as well as the others’ experience of this relationship. The PSDM states that perfectionistic individuals experience social disconnection also from an objective perspective (Hewitt et al., 2006; Hewitt et al., 2017). A few studies have been conducted with reports from both partners in the relationship. For example, Hewitt, Flett, and Mikail (1995) found that those with a spouse who is elevated on trait perfectionism reported lower levels of relationship adjustment and more family difficulties. Similarly, Haring, Hewitt, and Flett (2003) found that individuals with trait perfectionism were more likely to experience lower marital adjustment as rated by the perfectionistic individual and by his-or-her partner. Further, perceiving discrepancies in a romantic partner’s ability to live up to expectations, as measured by a dyadic modification of the revised Almost Perfect Scale, was found to predict more relationship distress and an increased
likelihood for the relationship to be discontinued after 3 months (Lopez, Fons-Scheyd, Morua, & Chaliman, 2006). Couples that consisted of a partner with high *maladaptive perfectionism*\(^1\) were more likely to be in a conflicted relationship (Ashby, Rice, & Kutchins, 2008). Also, Mackinnon and colleagues (2012) found that dyadic perfectionistic concerns were associated with conflict in romantic relationships, which mediated the relationship to depression. The authors suggested that perfectionism bears both on the generation of negative and the degeneration of positive social experiences, such as conflict and intimacy, respectively. Sherry and colleagues (2014) found that socially prescribed perfectionism was correlated with partner daily conflict, both as self-reported and as other-reported. Briefly, perfectionistic individuals' close others also report difficulties in their relationship with the perfectionistic individual.

Interpersonal difficulties have also been found for the interpersonal expression component of perfectionism. For instance, Sherry, Hewitt, Besser, Flett, and Klein (2006) found that all three perfectionistic self-presentation facets were correlated, among both men and women, with Machiavellianism, a personality style of interpersonal manipulation and cynicism. As well, the two concealing facets of perfectionistic self-presentation, nondisplay and nondisclosure of imperfections, were found to be negatively correlated with and predictive, above and beyond trait perfectionism dimensions, of social self-esteem (Hewitt et al., 2003). Besser, Flett and Hewitt (2010) found that all three perfectionistic self-presentation facets were negatively correlated with several subscales of social problem solving skills. In addition, Roxborough and colleagues (2012) found that youths elevated in the three facets of perfectionistic self-presentation experienced more social hopelessness; in addition, the three perfectionistic self-presentation facets were correlated with the experience of being bullied. These associations further mediated the relationship to suicide risk; that is, perfectionistic self-
presenting youths with negative interpersonal experiences were more suicidal. It was also found that perfectionistic self-presentation facets were associated with validation seeking and rejection sensitivity, suggestive of the interpersonal needs of these individuals (Flett, Besser, and Hewitt, 2014). In sum, there is accumulating empirical support to suggest that perfectionistic self-presentation adds to the experience of relational difficulties.

**Overview of Perfectionistic Self-Presentation in Psychopathology.** As perfectionistic self-presenting individuals experience interpersonal distress, this is likely to extend as well to psychopathological distress. According to the PSDM, perfectionistic self-presentation is associated with significant distress and negative outcomes. While there is an extensive literature on the association between the broad construct of perfectionism and psychopathology, this literature is limited when looking specifically at perfectionistic self-presentation. Thus, the literature presented here provides a brief and broad review.

To begin, the literature on perfectionism in depression is extensive. Self-oriented and socially prescribed perfectionism trait dimensions were found to be correlated with depressive symptoms in a clinical sample (Hewitt & Flett, 1991), even after controlling for neuroticism and extraversion (Enns & Cox, 1999), to interact with achievement and interpersonal stressors in this pathway (Hewitt & Flett, 1993; Hewitt, Flett, and Ediger, 1996), and to be predictive of depressive symptoms one year later in adolescents (Soenens et al., 2008). Perfectionistic attitudes predicted depressive symptoms 3 years later among a clinical sample, and were mediated by negative social interactions and lack of perceived social support (Dunkley, Sanislow, Grilo, & McGlashan, 2006). As well, and importantly, Hewitt and colleagues (2003) found that the perfectionistic self-presentation facets were correlated with depression and were uniquely predictive beyond perfectionism trait dimensions in hierarchical regression analyses.
among university and clinical samples. Additional research found that, in a community sample, negative social problem-solving (Besser, Flett, & Hewitt, 2010), and in a student sample, a lower sense of mattering (Flett, Galfi-Pechenkov, Molnar, Hewitt, & Goldstein, 2012) mediated the negative associations among perfectionistic self-presentation and depression. Additionally, Nepon, Flett, Hewitt and Molnar (2011) found in a student sample that negative social feedback and interpersonal rumination mediated the negative associations with specific facets, that is, associations among perfectionistic self-promotion and nondisplay of imperfections with depression. In sum, there is a notable association between perfectionism and depression, and this association is also apparent with the perfectionistic self-presentation component.

Similarly, research has examined perfectionism in bipolar disorders (e.g., Hewitt et al., 1998; Scott, Stanton, Garland, & Ferrier, 2000; Thomas, Bentall, Knowles, & Tai, 2009; Egan, Wade, & Shafran, 2010), anxiety disorders (e.g., Antony, Purdon, Huta, & Swinson, 1998; Alden, Ryder, & Mellings, 2002; Frost & DiBartolo, 2002), eating disorders (e.g., Fairburn, Welch, Doll, Davies, & O’Connor, 1997; Fairburn, Cooper, Doll, & Welch, 1999; Vohs, Bardone, Joiner, & Abramson, 1999; Cockell et al., 2002), personality disorders (e.g., Morey, Waugh, & Blashfield, 1985; Hewitt & Flett, 1991a; Hewitt, Flett, & Turnbull, 1992), and suicidality (e.g., O’Connor, 2007). The perfectionism construct seems to represent a general vulnerability factor for psychopathology and distress as it applies to several disorders and difficulties.

Further, given its wide range of applicability to psychopathology, a few studies have started to examine perfectionism in the context of comorbidity. Iketani and colleagues (2002) found that perfectionism components were associated with comorbidity among panic disorder, agoraphobia, and cluster C personality disorders. In two studies, authors found that
perfectionism components were correlated with increased number of diagnoses among anxiety and depressive disorders, even after controlling for symptom severity (Bieling, Summerfeldt, Israeli, & Antony, 2004; Wheeler, Blankstein, Antony, McCabe, & Bieling, 2011). Thus, authors have suggested that comorbidity occurs due to a common maintenance factor, that of the perfectionism construct (e.g., Egan et al., 2010). Accordingly, as the role of perfectionism in psychopathology is so broad, examining components of perfectionism (such as perfectionistic self-presentation) and its mechanisms, such as those outlined in the PSDM, in therapy may be essential to understanding how to appropriately treat perfectionistic self-presenting patients.

**Overview of Perfectionistic Self-Presentation in Psychotherapy.** Psychotherapy is another interpersonal setting in which the perfectionistic self-presenting individual’s relationship difficulties are demonstrated by his-or-her interactions with therapists or group members. Accordingly, the PSDM has been applied within the context of psychotherapy (Hewitt et al., 2018), and proposes that perfectionistic self-presenting patients would experience poorer therapeutic outcomes as a consequence of in-session social disconnection (see Fig. 2). The PSDM within the clinical context suggests that the perfectionistic behaviours produce aversive interpersonal hypersensitive and off-putting behaviours, such as through an inauthentic perfectionistic self-presentation. This then is postulated to create the patient's transference response and the therapist's (or group's) countertransference response. That is, the patient may view others as harsh, critical and rejecting and may become resentful, cautious, and hypervigilant; and the therapist or group members may view their efforts toward the patient as futile and may become annoyed, defensive, and feel defeated. If these responses are left unattended, in both pathways, withdrawal is likely to occur, either on the part of the patient or of the therapist or group, resulting in a disrupted therapeutic process and poorer outcomes. Use of
this framework can be helpful in clinicians' understanding of perfectionistic behaviours in a clinical context and what to attend to in psychotherapy. Given that the application of the PSDM in the clinical context is new, there is yet to be research to directly support it. However, I review perfectionism (where possible, specifically perfectionistic self-presentation) treatment literature that pertains to this application and the current study.

In supporting the importance of examining perfectionistic self-presentation in the therapeutic process, I first look at perfectionistic self-presenting individuals' abilities to seek psychological help. Resembling the component of perfectionistic self-presentation, it was found that trait perfectionism was positively associated with self-concealment; this then in turn explained the association to psychological distress (Kawamura & Frost, 2004) and negative attitudes toward seeking psychological help (Abdollahi, Hosseinian, Beh-Pajooh, & Carlbring, 2017). The combination of trait perfectionism with self-concealment suggests that these findings may extend to the perfectionistic self-presentation component. Further, Hewitt, Kaldas, Sherry, Bae, and Flett (2018) found that the three self-presentation facets were associated with negative attitudes toward seeking psychological help, fears concerning psychotherapy, and discomfort in seeking, participating and benefitting from psychotherapy in university and community samples. This suggests that perfectionistic self-presentation has a negative impact on entering treatment, limiting attempts to seek help and engagement in treatment, indicative of a hypervigilant response.

Second, once a perfectionistic self-presenting individual does actually access psychological services, the process of assessment is difficult for him-or-her. Hewitt and colleagues (2008) measured individuals' cognitive, affective and physiological reactions in a clinical interview. It was found that at pre-interview nondisclosure of imperfections was
associated with negative anticipatory cognitions of performance; and at post-interview, the three perfectionistic self-presentation facets were associated with negative cognitive appraisals and satisfaction of performance. The three self-presentation facets were also significantly correlated with elevated levels of negative affect at pre- and post-interview, as well as with elevated heart rate at various points throughout the interview. In hierarchical regression analyses, nondisclosure of imperfections was found to be a unique predictor of cognitive and physiological reactions after controlling for other variables including trait perfectionism dimensions. In addition to the perfectionistic self-presenting individual's own experience, the study also found that the ratings on the individual from clinicians conducting the interview were negatively associated with the three perfectionistic self-presentation facets. That is, the clinician liked the individual less and was less willing to have him-or-her as a patient, the more the patient was perfectionistic in self-presentation.

Third, treating perfectionistic patients poses several challenges. For instance, it was found that the process of therapy was quite distress-provoking for perfectionistic individuals, and this was found to be particularly the case in consideration of perfectionistic self-presentation (Flynn, 2002). Specifically, in a group therapy study, nondisplay of imperfections was significantly correlated with self-reported anxiety at pre- and post-sessions, particularly in early phase of treatment; and nondisclosure of imperfections was significantly correlated with self-reported anxiety at post-sessions especially in later phase of treatment. Nondisclosure of imperfections was additionally associated with higher cortisol levels (i.e., a stress hormone) during assessment and with more disruptive therapy behaviours (e.g., missing sessions). What's more, in the National Institute of Mental Health Treatment of Depression Collaboration Research Project (NIMH-TDCRP), one component of the broad perfectionism construct, dysfunctional
perfectionistic attitudes, was studied. Shahar, Blatt, Zuroff, Krupnick, and Sotsky (2004) have found that patients with dysfunctional perfectionistic attitudes had difficulties in developing interpersonal relationships, both within (i.e., contributing to the alliance) and outside of therapy (i.e., building a satisfying social network), which both restricted the therapy process and led to poorer treatment outcomes. In another study, Rice, Sauer, Richardson, Roberts and Garrison (2015) measured symptom distress and interpersonal problems at every session. It was found that patients with maladaptive perfectionism had high levels of symptoms distress and interpersonal problems at the beginning of therapy, as compared to non-perfectionistic patients. Perfectionism was also associated with consistently higher levels of symptom distress and with no change in levels of interpersonal problems over the course of therapy. In addition, Hewitt and Flett (2007) have discussed, from clinical experience, ways in which perfectionistic behaviours can challenge the process of treatment. Generally, patients may impose perfection onto the therapist, expressing hostility or anger towards the therapist when they don't get what they want. As individuals strive for perfection, or the appearance of perfection, across a broad range of contexts, there is no exception for therapy. These individuals may strive to be or present as the ‘perfect patient’ or perceive more demands coming from the therapist. When therapeutic change isn't quick enough, effective enough, or perceived as ‘perfect’, patients may feel a sense of failure due to their all-or-nothing thinking and may terminate early. With specific regard to perfectionistic self-presentation, patients may experience more shame and anxiety in treatment, and behave in a more avoidant or withdrawn manner and be nonadherent in treatment.

Fourth, perfectionistic attitudes has been found in the TDCRP and other studies to be a significant factor impeding therapeutic gains, that is, perfectionistic patients experience poorer outcomes. This hindrance of perfectionistic attitudes was consistent across different types of
brief treatment approaches, i.e., cognitive-behavioural therapy, interpersonal therapy, pharmacotherapy and placebo (Blatt, Quinlan, Pilkonis, & Shea, 1995). A large sample of patients were randomly assigned to these treatments, were assessed on two dysfunctional attitudes (i.e., perfectionistic and need for approval) and on change via general clinical functioning, severity of depression and level of social adjustment. Perfectionistic attitudes, but not need for approval, at pre-treatment significantly predicted more impairment in all these outcome variables at termination (controlling for pre-treatment levels) across all these treatment modalities. Pre-treatment perfectionistic attitudes was also found to be associated with poorer outcomes and less therapeutic gains at 18-month follow-up as rated by therapists, clinical evaluators and patients (Blatt, Zuroff, Bondi, Sanislow, & Pilkonis, 1998). In the same study it was additionally found that pre-treatment perfectionistic attitudes impeded gains in the latter half of treatment. In another study, Zuroff and colleagues (2017) found that perfectionistic attitudes related with higher controlled motivation for therapy, that is, motivation derived from a sense of pressure due to, for instance, guilt or demands. Perfectionistic attitudes and controlled motivation in turn related with smaller reductions in depression symptoms during and after treatment. I believe that these findings are suggestive as well of the potential role of the relational component of perfectionism (perfectionistic self-presentation) in psychotherapy.

Clearly, perfectionistic individuals respond to treatment differently than other patients. The challenges that relate to perfectionism suggest that it is an important patient characteristic that influences therapy process and benefit. Within the interpersonal context of group therapy, this may be especially the case for the interpersonal expression of perfectionism (i.e., perfectionistic self-presentation, e.g., Flynn, 2002). Therefore, poorer therapeutic processes and outcomes are also expected to be related to the perfectionistic self-presentation component,
which would suggest its role in the genesis and maintenance of distress, and indicate the importance of targeting this personality vulnerability to achieve continued therapeutic gains.

**Summary.** Perfectionism has roots in early attachment and develops as an attempt to satisfy needs. Perfectionistic individuals experience distress in many domains and specifically perfectionistic self-presentation may be involved in distress through its effect on the individual's interpersonal behaviours and subsequent experiences. As discussed in the PSDM and reviewed previously, perfectionistic self-presentation may engage in more hypervigilant, withdrawn or aversive interactions with others, experiencing less connectedness and increased distress (Hewitt et al., 2017). This may also apply within psychotherapy through the experience of transference and countertransference (Hewitt et al., 2018). Perfectionistic self-presentation facets may particularly interfere with the process and hinder therapeutic gains. With the PSDM in mind, I turn my attention to the specific variables and mechanism of interest in the current study: the pathway among perfectionistic self-presentation and social disconnection as seen in the group therapy process, and the role within that pathway for aversive interpersonal behaviours and perceptions of others.

**Group Therapeutic Factors**

The current study suggests that highly perfectionistic self-presenting patients experience social disconnection in the context of group therapy. Group therapy is a form of psychotherapy in which the therapist(s) assists a small group of patients to come together in treatment. While there is much variability in groups, across the gamut group members are encouraged to share their own experiences, to relate to one another, to offer and receive support and feedback to and from one another (e.g., Montgomery, 2002; Yalom & Leszcz, 2005). This space to interact with more than one person, with other members, and not exclusively with the therapist(s), can then be
used as a mechanism of therapeutic change. Accordingly, the present study investigates disruptions in the process of group therapy as a form of social disconnection in the PSDM.

Research in the area of group therapy process started to gain interest in the 1950s and has since expanded (e.g., Corsini & Rosenberg, 1955; Bloch, Crouch & Reibstein, 1981). Yalom has been highly influential in theorizing on and researching the curative or therapeutic climate factors of this complex process (Yalom & Leszcz, 2005). Although the factors cannot be isolated from one another, are related and interact together, the factors are conceptualised as follows: instillation of hope, universality, imparting information, altruism, the corrective recapulation of the primary family group, development of socializing techniques, imitative behaviour, interpersonal learning, transference, insight, group cohesiveness, catharsis, and existential factors (Yalom & Leszcz, 2005). Further, some factors may be more salient at some stages of the therapy process than at other stages; the factors come together in a diverse manner according to the stage of the group, and the nature of factors and their interaction fluctuates and changes as the group progresses (Yalom & Leszcz, 2005). Different clusters of factors are emphasized by different therapists and within different groups and approaches, yet a few factors are consistently valued. There are discrepancies between therapists' and patients' views about the most valued factors; therapists are found to value most highly factors relating to technical skills and techniques; and patients, factors indicating the importance of the relationship. Moreover, patient ratings of these factors have been found to be more predictive of therapeutic outcome than therapist ratings of the same factors, indicating the importance of the patient's view. This difference can be reconciled by recognising, as Norcross and Lambert (2011) suggested, that how well techniques work depends on the context and therapeutic environment in which they are applied. Interpersonal learning, catharsis, cohesiveness, and insight are found to be most
importantly ranked by patients, across a variety of settings, disorders, and types of groups. Moreover, Fuhriman, Drescher, Hanson, Henrie, and Rybicki (1986) conducted a factor analysis on the items of these four factors, which resulted in three factors (i.e., cohesion, catharsis, and insight). Items from interpersonal learning did not constitute a factor but rather were spread across the other factors. That is, although interpersonal learning is important in the group therapy process, it is not a factor in its own right but is rather an underlying condition for the other factors. In other words, the therapeutic group process occurs in an interpersonal context which allows these other factors to develop. These three factors are defined as follows (Yalom & Leszcz, 2005):

- **Group cohesiveness** is the idea of the therapeutic relationship applied in the context of the group format. There is more than one relationship to consider; the relationship of the patient with the therapist(s), with each group member, and with the group as a whole. Cohesion can be described as the attractiveness of the group to its members, and indicates the patient’s valuing of the group.

- **Catharsis** is the patient’s emotional discharge by the experiencing and expressing of feelings within the interpersonal context of the group. This factor includes a sense of liberation or personal effectiveness, as well as the acquisition of communication skills, that of expressing one’s needs.

- **Insight** is the process of a patient discovering important things about him-or-herself. Patients may discover how they are seen by others; what their patterns of behaviours are; what beliefs, fears and needs drive their behaviours; and how they have come to be who they are.
**Alliance.** Group cohesiveness and alliance are very similar concepts and are particularly important to the therapy process, in individual and group formats (Yalom & Leszcz, 2005). The alliance represents the constructive and actual relationship focused on the here-and-now (Horvath, 2000; Meissner, 2001). A good quality alliance is required to develop an intersubjectivity between therapist and patient (e.g., Natterson, 1993), that is to enter into each other's subjective worlds and come to a shared understanding and meaning of situations. The alliance is built on the patient's mature and healthy capacities, the therapist’s abilities, and an agreement between both parties on the work to be done (Bordin, 1979; Marmar, Gaston, Gallagher, & Thompson, 1989; Marmar, Weiss, & Gaston, 1989; Gaston, 1990). That is, the alliance is a relationship in which each party contributes to collaboration with each other. The patient’s attitudes and dispositions (e.g., hope, trust) impact his-or-her capacities to engage in the therapy, as well as his-or-her affective bond to the therapist. In terms of the therapist, characteristics such as empathy, acceptance, involvement and activity in the relationship are implicated in the alliance. Together the therapist and patient come to an understanding of each other’s respective role and to a consensus on the goals and tasks of therapy (Bordin, 1979). These elements do not occur in isolation from one another, they are interactive and influence each other. In addition, these dimensions fluctuate throughout the process of therapy, although alliance tends to increase over the course of therapy (Marziali, 1984). These dimensions are also applicable in the context of group therapy, in defining the alliance between each patient and the group as a whole.

The therapeutic alliance has been extensively studied and continues to receive attention due to its predictive value in relation to therapeutic outcomes (see Castonguay, Constantino, & Holtforth, 2006 for a review). The association between the quality of the alliance and therapy
outcomes is consistent in the literature, across treatment orientations, patient populations, and
types of outcomes, as found for instance in meta-analytic studies (e.g., Horvath & Symonds,
1991; Martin, Garske, & Davis, 2000). This correlation is still apparent when controlling for
general pre-treatment symptoms and distress. Although the effect is small, it is robust (Horvath
& Symonds, 1991; Martin et al., 2000; Castonguay et al., 2006). It has been found, as well, that
the patient’s perspective on the alliance is more predictive than ratings from other sources (e.g.,
Orlinsky, Grawe, & Parks, 1994). The patient's involvement and contribution to the alliance was
found to increase across sessions and was found to be, of the contributing components in the
alliance, the most predictive of therapeutic outcome (O'Malley, Suh, & Strupp, 1983).
Additionally, alliance is associated with outcome even when alliance is assessed early in
treatment (e.g., Horvath & Symonds, 1991). Nevertheless, the overall pattern of change in
alliance is meaningful: patients with better outcomes experience an increase in alliance over the
course of treatment; whereas an overall decrease in alliance is predictive of poor outcomes
(Morgan, Luborsky, Crits-Christoph, Curtis, & Solomon, 1982; Frieswyk et al., 1986).
Further, patient characteristics have been found to impact the quality of the alliance
between patient and therapist, both in relation to initial level of alliance and in its development
over the course of therapy. Patient expectations and motivation for improvement, interpersonal
functioning, and pre-treatment symptom severity are some of those characteristics (see Connolly
Gibbons et al., 2003; Constantino, Arnow, Blasey, & Agras, 2005; Castonguay et al., 2006).
Patients' personality traits were also found to impact the alliance, such as that agreeableness
especially, as well as openness, conscientiousness, and extraversion were positively correlated
with alliance, and neuroticism negatively correlated with alliance (e.g., Coleman, 2006; Hirsh,
Perfectionistic Self-Presentation & Therapeutic Process Factors. Although there is little work on perfectionistic self-presentation in the therapeutic process, there is some work looking at other components of perfectionism. For example, a few articles have investigated the association between perfectionistic attitudes, alliance and therapeutic outcomes in the NIMH-TDCRP, consisting of individual interpersonal therapy, cognitive-behavioural therapy, pharmacology and placebo treatment modalities. Blatt, Zuroff, Quinlan, and Pilkonis (1996) found that perfectionistic attitudes interacted with the quality of the therapeutic relationship in predicting therapeutic outcomes. At high and low levels of perfectionistic attitudes, outcomes were poor and good, respectively. However, at moderate levels of perfectionistic attitudes, the quality of the relationship exerted an effect. Poorer outcomes were found if the quality of the relationship was also poor or the outcomes were good if the quality of the relationship was good. In Zuroff and colleagues' (2000) analyses, videotaped sessions were coded for the patient and therapist contributions to the alliance. Perfectionistic attitudes negatively related to increases in patient contributions to alliance, that is, patients with lower levels of perfectionistic attitudes experienced higher increases in alliance (patient contributions) and patients with high perfectionistic attitudes did not increase on alliance over time – in both psychotherapy modalities. The authors also found that patient contributions to the alliance partly mediated the association between perfectionistic attitudes and therapeutic outcome. On the other hand, Hawley, Ho, Zuroff, and Blatt (2006) found that higher patient contribution to the alliance predicted greater decreases in perfectionistic attitudes, which then predicted greater decreases in depressive symptoms. Also, patients with low perfectionistic attitudes experienced higher levels of their therapist providing the Rogerian condition (i.e., empathy, positive regard, genuineness), whereas patients with high perfectionistic attitudes did not distinguish between this therapist
effect (Zuroff, Shahar, Blatt, Kelly, & Leybman, 2016). In sum, perfectionistic attitudes negatively impacted the therapeutic relationship and outcomes in individual therapy.

In addition to the findings from the TDCRP, van der Kaap-Deeder, Smets, and Boone (2016) examined the relationship between perfectionism components (concern over mistakes and doubts about actions) and the therapeutic alliance in a clinical sample with an eating disorder. It was found that patients' perfectionism was associated negatively and directly with their subsequent therapeutic alliance. Perfectionism was also indirectly associated with subsequent body dissatisfaction through the relationship with therapeutic alliance. On the whole, it appears that perfectionism components negatively predict patient contributions to the alliance and perceptions of the alliance. There is also a bidirectional influence in predicting therapeutic outcome, that is, that the patient's contributions to the alliance may also influence perfectionistic attitude levels and predict outcome. Although the findings with perfectionistic attitudes and cognitive measures are important, these studies only examined one component of perfectionism and only examined these in individual therapy. I chose to examine a different, relational, component of perfectionism in group therapy.

As indicated, perfectionistic attitudes and traits seem to be negatively associated with the therapeutic alliance. In addition, though not directly measuring therapeutic factors as described above, a few other studies specifically examined perfectionistic self-presentation in a clinical context. Hewitt and colleagues (2008) examined patients’ experience in an initial clinical interview. It was found that the three self-presentational facets of perfectionism were associated with negative appraisals of the interview (in addition to experiencing affective and physiological arousal). Nondisclosure of imperfections was also related to perceived interpersonal threat of the clinical setting. Therapists’ likeability ratings of patients were also negatively correlated with
perfectionistic self-presentation facets. Moreover, in a group therapy study, Flynn (2002) found that nondisplay and nondisclosure of imperfections were associated with patients' self-reported anxiety during early and late stages of treatment, respectively. Nondisclosure of imperfections was also associated with disruptive behaviours and with a decrease in negative self-disclosures over the course of group therapy. Taken together, it can be suggested that the broad construct of perfectionism negatively impacts the therapeutic process, with perfectionistic self-presentation facets likely being particularly important to the group process.

**Interpersonal Behaviour**

The current study suggests that interpersonal behaviours of highly perfectionistic self-presenting individuals act in an indirect mechanism to social disconnection. Interpersonal behaviours are characterised as expressing a certain degree of control (dominance vs. submission) and affiliation (friendliness vs. hostility), two bipolar dimensions (e.g., Leary, 1957; Benjamin, 1974; Wiggins, 1979; Kiesler, 1983). In every exchange with another, an individual is proclaiming his or her power or status and his or her warmth or agreeableness towards this other. The other’s response will also be reflective of control and affiliation, and so on as the interaction continues. In other words, all interpersonal behaviours are viewed as combinations of these two dimensions at varying degrees. As these two dimensions are orthogonal, they can be represented on a two-dimensional Cartesian coordinate system, with control on the vertical axis and affiliation on the horizontal axis. The (0,0) point represents the theoretical absolute point of interpersonal neutrality. As different interpersonal behaviours fall at different degrees on the bipolar dimensions, falling at different points on the coordinate system, the totality of possible interpersonal behaviours creates a circular figure, that is, the interpersonal circumplex. These behaviours can then be categorised, divided and clustered around the circle according to where
they fall on the Cartesian system based on control and affiliation (see Fig. 3). These categories are intercorrelated systematically around the circle; categories that are directly adjacent have large positive correlations, categories in direct opposition are most strongly negatively correlated, and categories perpendicular to one another have the smallest degree of correlation (e.g., Wiggins, 1979; Kiesler, 1983).

Within this framework, normal personality is defined as interpersonally adaptive, flexible in exhibiting different types of interpersonal behaviours around the circumplex (usually situationally driven), although with a certain preference in interpersonal behaviours, and with interpersonal behaviours expressed at mild-moderate degrees on the circumplex (see Leary, 1957; Kiesler, 1983). Abnormal personality, on the other hand, can occur either as a rigid display of a limited range of interpersonal behaviours across situations and persons, or as inconsistent behaviours at extreme levels of the circumplex. Interpersonal behaviours are also seen as defensive responses to some experienced affective state, driven by an unmet need, to provide relief from the distressing state (Malan, 1979; Strupp & Binder, 1984). The relief is only temporary however, particularly when the behaviour is inappropriate and problematic. A stylistic pattern may then develop from the same dysregulated states being experienced and producing the same range of interpersonal responses. Further, in exchanges with an individual with abnormal personality, his or her interpersonal style usually overrides situational differences and may often frustrate the other individual and lead the other to respond in specific ways. Thus, problems would arise from these dynamics (Horowitz, Rosenberg, Baer, Ureno, & Villasenor, 1988; Alden, Wiggins, & Pincus, 1990).
Complementarity. The orderliness of interpersonal behaviours as conceptualized by the circumplex allows for the study and prediction of which behaviours are associated with which other behaviours. That is, interpersonal dynamics between persons do not occur at random or in isolation from one another. Persons mutually influence each other in their interpersonal behaviours and reactions. According to complementarity, interpersonal behaviours pull for a specific range in type of reaction (Leary, 1957; Carson, 1969; Benjamin, 1974; Kiesler, 1983; Wagner, Kiesler, & Schmidt, 1995). This reaction then pulls for another specific type of response, usually reinforcing the original type of behaviour. In other words, an individual pulls for responses from others that confirm one's view of one's self-concept. With perfectionistic self-presenting behaviours, for instance, although adopted in attempts to gain connection to others, the individual’s style is often perceived as rigid and distant as discussed in the PSDM. Via complementarity, others will be cold and distant with the perfectionistic self-presenting individual, strengthening the perfectionistic self-presenting individual’s beliefs that he-or-she does not belong or fit with others, that others are harsh and unaccepting, and that he-or-she is of little worth and is perceived as not being perfect enough (Hewitt et al., 2017). This individual will then continue to be increasingly interpersonally distant and perfectionistic in self-presentation.

Specifically, a complementary response is one in which the response is opposite in control and matching in affiliation. The respondent can overtly react in a complementary fashion or not, still this pull does occur covertly and influences the individual’s overt reaction. That is, one’s interpersonal behaviour (e.g., hostile-dominant) creates an unconscious pull on the other to respond in a complementary manner (e.g., hostile-submissive), increasing the likelihood that this other will respond verbally and behaviourally according to complementarity. This
complementarity then pulls the original person to respond in a similar manner as his-or-her first interpersonal behaviour (e.g., hostile-dominant), unconsciously promoting the same interpersonal cycle to continue on. In the case of abnormal personality, the patient rigidly displays the same type or extreme levels of interpersonal behaviour, and others in his or her life learn to respond to him-or-her with behaviour of limited range or of extreme levels. This sometimes leads the patient to blame others, disregarding one’s own generation or maintenance of the pattern. The more rigid and extreme a person’s interpersonal behaviours, the more he-or-she shapes his-or-her relationships with others (Leary, 1957; Carson, 1969). That is, the other person with a more flexible range of interpersonal behaviours is more likely to respond in accordance to the complementary pull and as interactions continue the relationship is highly likely to be molded by the first person’s consistent pull, particularly if this other is attached to the relationship.

This pattern can also be found in the group therapy context, where members of the group will be aroused to feel a certain way (i.e., covert) in response to each patient. In this way the group may act out (i.e., overt) the interpersonal pattern for the patient, particularly by members with a complementary personality (Leary, 1957; Carson, 1969). According to Leary (1957), it is also possible to describe the behaviour or “personality” that characterizes the group, not only the individuals, usually reflecting the interpersonal tendencies of the majority of the group members.

Further, research on the covert complementary pull has looked at pairs of interactions and at the group psychotherapy domain. Wagner and colleagues (1995) found that the self-reported interpersonal behaviours of an individual significantly matched with his-or-her covert pull as rated by another, with 92% convergence, supporting the interpersonal cycle of interactions. Tracey (1994) also found that interpersonal behaviours significantly elicited overt complementary behaviours, although complementarity in behaviours was more prominent on the
friendly hemisphere compared to the hostile hemisphere. Although proportions of complementary interactions were high and predominantly on the friendly hemisphere, securely attached patients engaged in more therapist-patient complementary interactions early in group psychodynamic-interpersonal psychotherapy, as compared to anxiously-avoidant patients (Maxwell et al., 2012).

Additionally, there is some research that has investigated interpersonal changes in psychotherapy, particularly with depressed patients. A decrease in total interpersonal problems was found over the course of various approaches of psychotherapy (Rosenthal, Muran, Pinskier, Hellerstein, & Winston, 1999; Vittengl, Clark, & Jarrett, 2004; Ravitz, Mander, & McBride, 2008). More specifically, depressed patients were found to have a reduction in hostile-submissive impact messages (i.e., covert complementary pull), as rated by the therapist (Constantino et al., 2008; Constantino et al., 2012). The authors suggested that changes along the affiliation dimension may be more important in bringing improvements.

**Perfectionistic Self-Presentation & Interpersonal Behaviour.** A portion of the PSDM proposes an association between perfectionistic self-presentation and interpersonal behaviours that lead to social disconnection and distress. A review of the empirical work follows on perfectionism and the interpersonal circumplex (e.g., Habke & Flynn, 2002). While the majority of this literature did not specifically examine the interpersonal expression component of perfectionism, findings from other components may suggest associations among the perfectionistic self-presentation facets and the interpersonal circumplex.

A few studies have investigated the interpersonal trait or problem profiles of perfectionistic individuals among an undergraduate student population. In Hill, Zrull and Turlington’s (1997) study of university students, men with perfectionism traits had a strong
predominance of interpersonal traits and problems in the hostile or hostile-dominant range. For women the pattern differed and was less clearly defined: perfectionism trait dimensions were associated with interpersonal traits or problems in the friendly-dominant, hostile-dominant, hostile-submissive octants, or across the range of the circumplex. In another study of students, results indicated that perfectionism traits among men were found to be associated with hostile-dominant traits and problems, and among women with traits and problems in friendly-dominance, hostile-dominance, or hostile-submissiveness (see Habke & Flynn, 2002). Findings with other perfectionism dimensions differed: all of the Frost perfectionism traits were spread around, in terms of interpersonal traits, on the friendly hemisphere of the circumplex. Further, in Wiebe and McCabe's (2002) study, the interpersonal behaviours of female participants were rated by a female friend. It was found that the association between participants' dysphoria and hostile behaviours (as rated by a friend) was mediated by participants' perfectionistic relationship expectations. Slaney, Pincus, Uliaszek, and Wang (2006) found that maladaptive perfectionism\(^1\) was clustered into two groups of interpersonal problems, that is, in the hostile and in the friendly-submissive octants. Dyadic perfectionism was also found to relate with interpersonal problems in the hostile range. In terms of perfectionistic self-presentation, it was found in a student sample that the three facets were associated with hostile-dominant problems among men and with hostile-submissive problems among women (Hewitt & Flett, 2018). Taken together these results do not paint a clear profile. Overall, it appears that perfectionistic individuals struggle with hostility and dominance, although men and women differ; some of the data also suggests difficulties in the range of friendliness and submission. Specifically, for perfectionistic self-presenting individuals, the pattern appears to reflect one of hostility with either dominance or submission depending on gender.
Although the profile of perfectionists is already complex among a student population, it is likely to be even more complex with a clinical population. Indeed, in a recent analysis of 515 patients, all CMPB components, including perfectionistic self-presentation facets, were found to have an undifferentiated profile of interpersonal problems, indicating that all components of perfectionism are associated with more than one area of the circumplex, that is, with a broad range of interpersonal problems (L. E. Ayearst, personal communication, 2011-2012). Those high on concealing styles of perfectionistic self-presentation, nondisplay of imperfections and nondisclosure of imperfections, were found to be particularly highly interpersonally distressed. Further, different disorders, subtypes, characteristics or symptoms are found to have different interpersonal profiles (e.g., alexithymia, Vanheule, Desmet, & Meganck, 2007; binge eating, Eldredge, Locke, & Horowitz, 1998; body dysmorphic disorder, Didie, Loerke, Howes, & Phillips, 2012; borderline personality disorder, Hilsenroth, Menaker, Peters, & Pincus, 2007, and Ryan & Shean, 2007; generalized anxiety disorder, Salzer et al., 2008; social phobia, Kachin, Newman, & Pincus, 2001), and perfectionism is found to be associated with comorbidity among several disorders (e.g., Iketani et al., 2002; Bieling, Summerfeldt, Israeli, & Antony, 2004; Wheeler, Blankstein, Antony, McCabe, & Bieling, 2011; Egan et al., 2010), complicating the picture further. Still, one study found that over the course of, and at follow-up from, a psychodynamic/interpersonal group treatment, perfectionistic self-presentation levels significantly decreased, and that change particularly in nondisplay of imperfections was associated with significant reductions in total interpersonal problems (Hewitt et al., 2015). No research was found to investigate perfectionism and interpersonal complementarity.

Overall, the literature on the broad perfectionism construct and the interpersonal circumplex suggests that while there is a clear association, the direction of the association is less
clear; and this is likely to occur as well for perfectionistic self-presentation as described above. Findings suggest that perfectionistic self-presentation is associated especially with hostility. Along the control dimension of the interpersonal circumplex, associations for perfectionistic self-presentation are also suggested with both dominance and submissiveness. Then again, associations may be undifferentiated and found across the range of the circumplex, as suggested in clinical samples reviewed above.

**Interpersonal Behaviours & Therapeutic Process Factors.** Several studies have investigated the association between interpersonal problems and alliance in individual therapy, first examining the association in early sessions. In cognitive therapy, interpersonal problems in the friendly-submissive quadrant positively correlated with, and in the hostile-dominant quadrant negatively correlated with, the collaborative subscale of alliance (Muran, Segal, Samstag, & Crawford, 1994). Paivio and Bahr (1998) found that overall interpersonal distress negatively correlated with the affective bond in early stages of experiential therapy. The friendly dimension of interpersonal problems was positively associated with early affective bond in the alliance. Most particularly, hostile-submissive problems were negatively associated with total alliance and the affective bond both early and late into therapy. Beretta and colleagues (2005) found that alliance at the third session of dynamic individual therapy was negatively correlated with total interpersonal problems, although positively correlated with the affiliation dimension. Johansson and Eklund (2006) found that, as early as the first session, interpersonal problems within the hostile hemisphere correlated negatively with alliance. Overall, an association between interpersonal problems and alliance can be found from early in treatment, with hostility most particularly relating negatively with alliance.
Second, the association between interpersonal problems and alliance at later stages of individual therapy have also been examined. Connolly Gibbons and colleagues (2003) found that, after controlling for symptom improvement, total interpersonal problems negatively predicted overall alliance of dynamic and cognitive individual therapy at mid-treatment. Constantino and colleagues (2005) found that total interpersonal problems at pre-treatment negatively predicted alliance at session 12, after controlling for symptom change, in individual interpersonal therapy. Puschner, Bauer, Horowitz, and Kordy (2005) investigated the association between interpersonal problems and alliance early in treatment and one-and-a-half years later across various orientations. Hostile, hostile-dominant, and hostile-submissive patients had poor alliance early in treatment and one-and-a-half-years later, with the most dominating of these patients experiencing poorer alliance at one-and-a-half year follow-up. Another study found that, at mid-treatment of individual cognitive therapy, total interpersonal problems and dominant problems were negatively related with, and friendly problems positively related with, alliance total and its subscales (Renner et al., 2012). After the course of 16-20 sessions, interpersonal problems across all eight octants were significantly decreased. On the whole, interpersonal problems continue to be related to poorer alliance at later stages of treatment, with hostility and dominance being of particular importance.

Third, change in therapy through the association between interpersonal problems and alliance has been investigated. Howard, Turner, Olkin, and Mohr (2006) found that alliance mediated the relationship between pre-treatment interpersonal problems and change in depression symptoms from pre-to-post treatment in individual cognitive-behavioural therapy. Further, total interpersonal problems negatively correlated with, and friendliness problems positively correlated with, alliance early and at mid-treatment for both cognitive-behavioural and
interpersonal individual therapy (Constantino & Smith-Hansen, 2008). However differences were found for the two treatment approaches on alliance at mid-treatment. In cognitive-behavioural therapy, dominant problems were negative correlated with, and friendly problems positively correlated with, alliance at mid-treatment. In interpersonal therapy, submissive problems were negatively correlated with alliance at mid-treatment. Further, three clusters of patients with different alliance trajectories across time were identified: initially high alliance and increasing over time, initially low alliance and increasing over time, and initially low alliance and slightly declining over time. Higher total interpersonal problems, and particularly hostile-submissive problems, were associated with the initial low alliance and increasing over time cluster; whereas hostile-dominant problems were associated with the cluster of those that had initially low alliance and slightly declining over time. In another study, it was found that problems in the hostile-dominant range were associated with lower alliance early in psychodynamic therapy and with increases in alliance overtime (Hersoug, Hoglend, Havik, von der Lippe, & Monsen, 2009). Again, hostility and dominance appear problematic in association with alliance across the course of therapy.

Fourth, the association between interpersonal complementarity and alliance has received some research focus. In the early stage of individual therapy, the more the interaction between patient and therapist matched in complementarity, the stronger the alliance was, particularly in terms of hostile complementarity (Keisler & Watkins, 1989). This is most likely the case with milder degrees of interpersonal behaviour. The authors also found that with more extreme and rigid patient behaviour, especially within the hostile hemisphere, the alliance was found to be less strong. The authors discussed, as supported by Dietzel and Abeles (1975), that in patients with successful therapy outcomes, in early stages the complementarity is high but the therapist
moves the patient away from complementarity in mid-stages. In another study, Auerbach, May, Stevens, and Kiesler (2008) found that in client-therapist pairings, impact messages by one (rated by the other) along the affiliation dimension was positively correlated with the other’s rating of alliance for both clients and therapists. Further, complementarity matching in the affiliation dimension was associated with more agreement in the pairings on the strength of the alliance. Constantino and colleagues (2010) also found that, after controlling for depressive symptoms and medication status, friendly impact messages of patients, as rated by the therapist, was associated with stronger alliance at the third session of individual interpersonal therapy.

Additionally, although not investigating alliance specifically, Zuroff and colleagues (2017) found that patients’ perception of therapists’ friendly messages were associated with motivation derived from a sense of meaningfulness and free choice (autonomous), which in turn related with better therapeutic outcomes.

Fifth, the association between interpersonal behaviours and therapeutic process factors specifically in the context of group therapy has also been studied. Lorentzen, Sexton, and Hoglund (2004) investigated alliance, cohesion, and interpersonal problems in a psychoanalytic therapy group. It was found that alliance and cohesion were correlated, that alliance early in group was negatively associated with dominance problems; however, neither alliance nor cohesion early in group predicted changes in interpersonal problems. In a cognitive-behavioural therapy group, patients’ engagement (a concept similar to cohesion) to the group at termination significantly correlated with decreased total interpersonal problems at one-year follow up, after controlling for pre- and post-treatment interpersonal problems (Ryum, Hagen, Nordahl, Vogel, & Stiles, 2009). In a group treatment program, group engagement, group cohesion, and particularly alliance to therapists during treatment were associated with reductions in total interpersonal
problems at post-treatment (Joyce, Ogrodniczuk, & Kealy, 2017). Moreover, no research was found to examine group therapeutic factors and interpersonal complementarity; however greater patient-therapist complementarity early in group therapy has been associated with greater therapeutic outcomes at treatment termination (e.g., Maxwell et al., 2012).

Overall, it appears that total interpersonal problems impact negatively on the therapeutic process, and that behaviours in the hostile hemisphere are particularly impeding. Findings are mixed on the control dimension but dominance seems to be associated with low change in alliance. However, little research has addressed the association between interpersonal behaviours and the range of therapeutic process factors in the context of group therapy, and thus the current study extends research in this area.

The Present Study

Methodological Overview. Patients attending a psychodynamic interpersonal group therapy as part of a residential treatment program were assessed over five consecutive sessions in group therapy. Patients were assessed for levels of perfectionistic self-presentation facets and interpersonal problems. Further, throughout the week of sessions, patients rated the group on alliance scales and climate factors, in addition to rating the co-therapists' interpersonal impact messages (i.e., rating another's interpersonal behaviours to assess the covert complementary pull experienced by the rater). The aim of the study was to investigate the relationships among perfectionistic self-presentation facets and process factors, generally and on the rate of change over the course of the five sessions of the week. In addition, I examined the intervening role of interpersonal variables on process levels generally and on the rate of change over the week. Overall, I posited that the perfectionistic self-presentation facets were negatively associated with the process factors. I also looked at the association among the perfectionistic self-presentation
facets with interpersonal problems and impact messages. I also posited that interpersonal problems were associated with the process factors. Similarly, I examined the patient's rating of the therapists' impact messages in the association with process factors. Moreover, I suggested that the association between the patients’ perfectionistic self-presentation to poor group process was indirectly impacted by interpersonal variables.

In terms of specific variables, the study's dependent variables are total alliance and its scales (i.e., patient working capacity, patient commitment, work strategy consensus, and group understanding and involvement), as well as cohesion, catharsis, and insight. Independent variables are the perfectionistic self-presentation facets (i.e., perfectionistic self-promotion, nondisplay of imperfections, and nondisclosure of imperfections). Intervening variables are the interpersonal problems and interpersonal impact messages (i.e., covert complementary pull). Weighted scores are computed for affiliation and control dimensions of the interpersonal problems and of the impact messages. The affiliation by control interactions (for the interpersonal problems as well as for the impact messages) have been included to capture the circumplex nature of interpersonal behaviours.

I chose a group psychotherapy format because psychotherapy is an interpersonal context and the group format provides great opportunity for patients’ interpersonal styles to be revealed (Rutan & Rice, 2000; Yalom & Leszcz, 2005). Interactions among several members, each with his-or-her own style or preference, offer the chance to observe various dynamics and their consequences, and to explore them when problematic interactions occur among group members. The group format also allows patients to receive feedback about their interpersonal behaviours and impact on others from a variety of persons. Given the current study’s purpose of
investigating interpersonal behaviours and process factors, the group format was deemed most conducive.

Similarly, I chose a psychodynamic approach because this orientation emphasizes interpersonal behaviours and the therapeutic process, in fitting with the aim of the study. The group psychodynamic interpersonal psychotherapy used in this study is an integration of several theories from psychodynamic, interpersonal and group therapy backgrounds (Tasca, Mikail, & Hewitt, 2005; Yalom & Leszcz, 2005; Rutan, Stone, & Shay, 2007). The approach capitalizes on the interpersonal nature of symptoms, relational behaviours and the process of therapy in a group context. This treatment is also applicable to a large variety of psychological problems and symptoms. That is, it does not specifically target any given set of symptoms but resolves various symptoms through the interpersonal process.

**Hypotheses.** With the aim of investigating associations among perfectionistic self-presentation facets, group therapy process factors, and interpersonal behaviours, the current study is based within the framework of the Perfectionism Social Disconnection Model (Hewitt et al., 2006; Hewitt et al., 2017; Sherry et al., 2016). In terms of the analytic strategy, I examined associations among perfectionistic self-presentation facets, group process factors, and interpersonal variables first via bivariate correlations, and then within multilevel models. In terms of multilevel analyses, I first examined associations among perfectionistic self-presentation facets and process factors (alliance and its scales, and climate factors), controlling for the patients' number of sessions in treatment. This was followed by the evaluation of associations among perfectionistic self-presentation facets and the rate of change over the week on process factors, controlling for the patients' number of sessions in treatment. The evaluation of associations generally and on the rate of change over the week occurred within the same
analytic models. Then, I examined associations among perfectionistic self-presentation facets and interpersonal variables (affiliation and control dimensions of interpersonal problems and of ratings of therapists' impact messages). Finally, depending on the aforementioned findings, in order to evaluate whether interpersonal variables have an intervening role on the relationship among perfectionistic self-presentation facets and process factors, upon inclusion of the interpersonal variables, the reduced relationships between perfectionistic self-presentation facets and process factors were examined. Specific hypotheses are outlined below.

**Relationship Among Perfectionistic Self-Presentation Facets and Process Factors.** The current study is an extension of literature that has primarily looked at one unidimensional component of perfectionism (e.g., dysfunctional perfectionistic attitudes) in an individual therapy context (from the NIMH-TDCRP, e.g., Shahar et al., 2004). The study extends this literature by examining a different multifaceted component of perfectionism in a group therapy context. Thus, I expected that each of the perfectionistic self-presentation facets would have similar associations to the process factors. At the same time, each facet is also considered to be distinct from one another (Hewitt et al., 2003), and it is important to investigate whether each facet is associated with the group process.

1. **Proclaiming and concealing facets of perfectionistic self-presentation were expected to be negatively associated with total alliance.** This is because perfectionistic self-presentation involves an interpersonal fear of judgment (Hewitt et al, 2003) and an inauthenticity or hostility towards others that likely hinders the patient's sense of connection and relationship to others in the group (Hewitt et al, 2003; Hewitt et al., 2017, Hewitt et al., 2018).

2. In terms of specific scales of the alliance, **the three facets of perfectionistic self-presentation were expected to be negatively associated with each scale of the alliance.**
Specifically, it was expected that patient contribution scales (i.e., patient working capacity, and patient commitment) would most relate to the process difficulties of perfectionists. This is because perfectionistic self-presenting individuals tend to be more cautious in revealing of themselves and engaging in the work of therapy and tend to struggle to be emotionally vulnerable and are less likely to affectively bond to the other members in group (Hewitt et al., 2003; Hewitt et al, 2006; Hewitt et al., 2017; Hewitt et al., 2018). Still, associations were predicted for the scales of work strategy consensus and group understanding and involvement, as these may also be impacted by the perfectionistic self-presenting patient's alienation of the group.

3. Proclaiming and concealing facets of perfectionistic self-presentation were expected to be negatively associated with the rate of change of alliance scales over the week. It is hypothesized that perfectionistic self-presenting individuals are likely to continue to experience process difficulties throughout the week and show slower increases on the alliance.

4. Facets of perfectionistic self-presentation were hypothesized to be negatively associated with the three climate factors, cohesion, catharsis, and insight. In terms of cohesion, this is because perfectionistic self-presenting individuals tend to have difficulty experiencing a sense of belonging with others (Hewitt et al., 2017; Hewitt et al., 2018). The inauthenticity and anxiety of these patients interferes with building interpersonal connections (Hewitt et al., 2003). This inauthenticity of the perfectionistic self-presenting patient would also interfere with the patient's expression and release of emotions within the group (i.e., catharsis). In terms of insight, these patients would also experience little new understanding of themselves, little discovery of the complexity and richness of various aspects of themselves.
Relationship Among Perfectionistic Self-Presentation Facets and Interpersonal Variables. Associations among perfectionistic self-presentation facets and interpersonal problems were expected to be found as perfectionistic self-presenting individuals tend to experience several interpersonal difficulties (see, for example, Habke & Flynn, 2002). Additionally, associations between perfectionistic self-presentation facets with perceptions of therapists' impact messages were expected to be found across the range of facets as perfectionistic individuals tend to view others aversively (Hewitt et al., 2017).

5. I expected that the three facets of perfectionistic self-presentation would be positively associated with total interpersonal problems. This is because the perfectionism construct broadly has been found to be associated with interpersonal distress (e.g., Hill et al., 1997; Habke & Flynn, 2002), as well as specifically the perfectionistic self-presentation facets (L. E. Ayearst, personal communication, 2011-2012; Hewitt & Flett, 2018).

6. All three facets of perfectionistic self-presentation were expected to be negatively associated with interpersonal affiliation problems (i.e., low affiliation or hostility problems). In addition to analyses with the total score, the specific dimensions of interpersonal problems are of interest in gaining an understanding of perfectionistic self-presenters' interpersonal difficulties. The association with hostility was hypothesized because perfectionistic self-presenting individuals have a tendency to hold themselves distant from others due to fears of rejection and resentment towards others (Habke & Flynn, 2002; Hewitt et al., 2003; Hewitt et al., 2017). All three facets were previously found to be associated with hostility problems (Hewitt & Flett, 2018).
7. Proclaiming and concealing facets of perfectionistic self-presentation and interpersonal control problems were expected to be associated, though in different directions. I expected the two concealing facets to relate to low control (i.e., submissiveness problems). This is because nondisplaying and nondisclosing individuals tend to submit in an attempt to gain acceptance from others and engage in an avoidant interpersonal style (Hewitt et al., 2003; Hewitt et al., 2017). The proclaiming facet, perfectionistic self-promotion, however, was suggested to relate to high control (i.e., dominance problems), as this is a style of actively seeking admiration (Jones & Pittman, 1982; Hewitt et al., 2003).

8. Facets of perfectionistic self-presentation were expected to be negatively associated with impact affiliation messages (i.e., patients rating therapists as less friendly or more hostile). This is because perfectionistic self-presenting individuals tend to perceive others as critical and rejecting (Hewitt et al., 2017).

9. Perfectionistic self-presentation and impact control messages were suggested to be positively associated (i.e., patients rating therapists as more dominant or less submissive). This is because perfectionistic self-presenting individuals tend to perceive others as imposing, placing demands and conditional in their love (Hewitt et al., 2017).

Intervening Role of Interpersonal Variables on the Relationship Among Perfectionistic Self-Presentation Facets and Process Factors. The intervening role of interpersonal problems and impact messages on the associations among perfectionistic self-presentation facets and process factors was evaluated. This set of hypotheses was dependent on the findings from the aforementioned hypotheses and was only conducted in cases in which associations in the aforementioned hypotheses were found. That is, that a perfectionistic self-presentation facet was associated with a process factor (hypotheses sets 1 through 4) and that this perfectionistic self-
presentation facet was associated with an interpersonal variable (interpersonal problems or impact messages, hypotheses sets 5 through 9). In these cases, it was tested whether any of these interpersonal variables were associated with this process factor when controlling for the perfectionistic self-presentation facet. The possible interaction between affiliation and control dimensions (interpersonal problems or impact messages) was examined to determine whether problems or messages in different quadrants of the circumplex have particular effects.

10. I expected that the patients' interpersonal problems and/or the patients' ratings of the therapists' impact messages would have an indirect effect on and would intervene on the direct association between perfectionistic self-presentation facets and process factors, generally or on the rate of change over the week.

In terms of the role of interpersonal variables on process factors, those patients with hostility problems or perceiving hostile messages (low affiliation) may experience low levels on therapeutic process factors (e.g., Keisler & Watkins, 1989; Connolly Gibbons et al., 2003; Johansson & Eklund, 2006). For example, it has been found that friendliness fosters a positive therapeutic environment, while hostility impedes it (e.g., Constantino et al., 2010). In other words, perfectionistic self-presenting individuals were expected to experience more hostility (either in themselves or perceived in others) which in turn hinders them from engaging and benefitting from the group process.

In addition, interpersonal control problems and/or ratings of therapists’ impact control messages were also expected to be associated with process factors. Control may be important in determining the trajectory of change over the course of group therapy. While patients with hostile-dominant (low affiliation, high control) and hostile-submissive (low affiliation, low control) problems may both begin at low levels of process factors, those with hostile-dominant...
problems appear to be more likely to experience a lower rate of change, and those with hostile-submissive problems a higher rate of change on process factors (Constantino & Smith-Hansen, 2008). This is such that either high control (dominance) in self (i.e., interpersonal problems) or views of low control (submissiveness) in others (i.e., impact messages) were expected to impede the rate of change. I expected that the role of control would be seen in cases of low affiliation (hostility) and may be unapparent in cases of high affiliation (friendliness); in other words, the interaction between affiliation and control dimensions was expected to be important for the slope. In sum, the role of control may be conditional on levels of affiliation; that is control (problems or perceived messages) would have an impact on the rate of change in therapeutic process factors only when affiliation is low (i.e., hostility).

I expected additionally that an intervening role would be found on the given perfectionistic self-presentation and process association. That is, I examined whether the association among the given perfectionistic self-presentation facet and the given process factor remained, upon inclusion of the given interpersonal variable(s).
Method

Participants

A total of 69 patients in 9 psychotherapy groups (i.e., of 6 to 9 patients each) at the Southdown Institute in Ontario, Canada, participated in the study. According to work by Green (1991) on regression analyses, 69 patients should allow the current study to have sufficient power of .80 to detect large effect sizes (Cohen, 1988), though with limited power for medium or small effects. In other words, it is possible that the present study did not have a sufficient sample size and power to significantly detect true effects of a medium or small (especially) size.

Although the current study uses multilevel modeling, sample size and power estimates based on regression analyses provides for a good foundation as these statistical methods are related.

The Southdown Institute offers residential treatment to Christian clergy, and thus constitutes the study's sample. Clergy were referred to and were often financed to attend the Southdown Institute by their particular church organization when problems arose that impeded the clergyperson's ministry. Although presenting problems vary, research has found that the clergy are more dominant than the average population (Patrick, 1990). In comparing the clergy with Christian and public school teachers, Rickner and Tan (1994) found that the clergy and Christian teachers had higher guilt than public school teachers, and that clergy rated their family of origin as less healthy than the teachers did. Members of the clergy are found to be particularly empathic, warm-hearted, social and outgoing, as well as conscientious, worried, tense and sensitive to criticism, as compared to the general population (Musson, 1998). Further, given the high demands of the profession, the rates of burnout (e.g., Lewis, Turton, & Francis, 2007), depression and anxiety (Knox, Virginia, & Lombardo, 2002) have been found to be far greater in the clergy than in the general population. Elevated scores were found among the clergy on
depression, feelings of inadequacy or inferiority, obsessive-compulsive thoughts, psychoticism, global severity, and symptom breadth (Knox, Virginia, & Smith, 2007). Further, in a sample of 249 patients attending the Southdown Institute, the Minnesota Multiphasic Personality Inventory-2 (MMPI-2) and the Millon Clinical Multiaxial Inventory-III (MCMI-III) were administered. On the MMPI-2, 31% of patients scored in the markedly elevated range (i.e., two standard deviations or more above the norm) on the Depression scale, 25% on the Hysteria scale, 23% on the Psychasthenia scale, 16% on the Schizophrenia scale, 15% on the Hypochondriasis scale, 13% on the Paranoia scale, 10% on the Psychopathic Deviate scale, and 10% on the Social Introversion scale. In terms of the MCMI-III, 14% of patients scored as clinically higher than norms (i.e., base rate of 85 or higher) on the Anxiety scale, 11% on the Depressive Personality scale, 8% on the Compulsive Personality scale, 7% on the Major Depression scale, 7% on the Avoidant Personality scale, 7% on the Histrionic Personality scale, 6% on the Masochistic (Self-Defeating) Personality scale, and 5% on the Dependent Personality scale. Clearly, clergy members that are referred to and admitted into the residential treatment program at the Southdown Institute are distressed.

Patients in the current study consisted of 36 females and 33 males, ranging in age from 28 to 74 ($M = 53.52, SD = 9.49$). Patients had been receiving treatment at the Southdown Institute, including within the psychotherapy group under investigation, ranging from 0 to 32 ($M = 11.97, SD = 7.94$) weeks prior to the start of the study. 69.9% of patients identified their ethnicity as Caucasian, 2.9% as Asian, 1.4% as Hispanic, 1.4% as African American, and 1.4% as Multi-racial. Ethnicity information was missing for the remainder of patients. 40.6% of patients indicated their educational level as receiving a post graduate degree, 23.2% as receiving a college or university degree, 10.1% as receiving a high school degree, and 2.9% as receiving a
master’s degree. Educational information was missing for the remainder of patients. Primary diagnoses within the sample consisted of: 89.9% with a Personality Disorder (81.1% Personality Disorder NOS), 69.6% with a Depressive Disorder (43.5% Major Depressive Disorder, 23.2% Dysthymic Disorder), 17.4% with an Anxiety Disorder (8.7% Generalized Anxiety Disorder, 7.2% Panic Disorder), 11.6% with an Adjustment Disorder, 8.7% with a Sexual Disorder, and 7.2% with a Substance Use Disorder.

**Measures**

**Perfectionistic Self-Presentation Scale.** The PSPS (Hewitt et al., 2003) is a 27-item questionnaire assessing participants’ tendencies toward outward expressions of perfection. The PSPS measures 3 facets. The perfectionistic self-promotion facet contains 10-items, and measures the tendency to narcissistically show off and makes people aware of one’s perfections (e.g., *It is very important that I always appear to be “on top of things”*). The nondisplay of imperfections facet contains 10-items, and reflects an avoidant nature in which the individual feels a need to behaviourally try to cover up one’s own mistakes from being apparent to others (e.g., *Failing at something is awful if other people know about it*). The nondisclosure of imperfections facet consists of 7-items, and indicates an individual’s avoidant nature in one’s unwillingness to verbalise one’s flaws to others (e.g., *I should solve my own problems rather than admit them to others*). Participants rate items on a 7-point Likert scale, from 1 (*disagree strongly*) to 7 (*agree strongly*). Some items are reverse-coded. Higher scores reflect higher perfectionistic self-presentation. Internal consistencies were found to range from .78 to .86 for the facets (Hewitt et al., 2003). Test-retest reliabilities over a 4-month period were .81 for perfectionistic self-promotion, .81 for nondisplay of imperfections, and .79 for nondisclosure of imperfections. Good convergent, discriminant and concurrent validity have also been
demonstrated. In the current study, internal consistency coefficients of .90, .87, and .82, respectively, were found.

**California Psychotherapy Alliance Scales - Group.** The CALPAS-G is a modified version of the patient version (CALPAS-P) designed to accommodate the group format. The CALPAS is a self-report questionnaire assessing therapeutic alliance (Marmar, Weiss, & Gaston, 1989; Gaston, 1991; Gaston & Marmar, Gallagher, & Thompson, 1991). The 12 items of the group version are identical to the items in the patient version except that the word “therapist” has been changed to “group” or "group members". Items are rated on a 7-point Likert scale from 1 (not at all) to 7 (very much so), with higher scores indicating higher alliance. Some items are reverse-coded. There are four scales: Patient Working Capacity measures the patient's ability to engage and work actively in treatment (e.g., *How much did you hold back your feelings during this session?* reverse-coded); Patient Commitment measures the patient's affective bond in treatment including trust and commitment towards treatment (e.g., *Did you feel that even if you might have moments of doubt, confusion or mistrust, that overall therapy was worthwhile?*); Working Strategy Consensus measures perception of agreement on goals and tasks of treatment (e.g., *Did you feel that you were working together with the group members, that you were joined in a struggle to overcome your problems?*); and Group Understanding and Involvement measures perception of empathic understanding and active participation towards the patient (e.g., *Did you feel accepted and respected by the group members for who you are?*). Coefficient alphas for the patient version were reported to be .64, .43, .51, and .73, respectively, and the total alliance as .83 (Gaston, 1991). In the current study, averaged coefficient alphas were found for the CALPAS-G as .88 for the total alliance, .82 for the patient working capacity scale, .64 for patient commitment, .87 for working strategy consensus, and .82 for group understanding and
involvement. Further, test-retest reliabilities over the five days, or the intraclass correlations, were found as .77 for total alliance, .73 for patient working capacity, .82 for patient commitment, .71 for working strategy consensus, and .75 for group understanding and involvement.

**Curative Climate Instrument.** The CCI is a 14-item self-report questionnaire measuring therapeutic factors present in group treatment (Furhiman et al., 1986) and was derived from Yalom and Leszcz’s (2005) group factor theorizing. Items are rated on a 5-point Likert scale from 1 (*not helpful*) to 5 (*extremely helpful*). Factor analytic methods indicated three salient scales: Cohesion measures the helpfulness of forces holding the group together (e.g., *Belonging to and being valued by a group.*); Catharsis measures the helpfulness of the release of emotionally loaded material (e.g., *Expressing my feelings even though I am uncertain.*); and Insight measures the helpfulness of experiencing and understanding of oneself in a new way (e.g., *Discovering and accepting previously unknown or unacceptable parts of myself.*). Coefficient alphas were previously found as follows: .87, .81, and .79, respectively (Furhiman et al., 1986). In the current study, average internal consistency coefficients were found to be .90, .88, and .74, respectively. The intraclass correlations were .73, .40, and .50, respectively.

**Inventory of Interpersonal Problems - Circumplex.** The IIP-C was designed to assess interactional patterns that may cause frustration and interpersonal problems, and follows the interpersonal circumplex octant structure (Horowitz et al., 1988; Alden et al., 1990). The octant scales are Domineering\Controlling (D), Vindictive/Self-Centered (HD), Cold/Distant (H), Socially Inhibited (HS), Nonassertive (S), Overly Accommodating (FS), Self-Sacrificing (F), and Intrusive/Needy (FD). There are two sections to the IIP, one following the form of: *The following are things you find hard to do with other people ...* e.g., *show affection to people* (Cold/Distant), the other the form of: *The following are things you do too much ...* e.g., *I am too*
easily persuaded by other people (Overly Accommodating). Items are scored on a 5-point Likert scale, from 0 (not at all) to 4 (extremely). In the current study, patients filled the original 127-item inventory; however for scoring items were cut down to the 64 items for circumplex use. Octants based on the 64-items were previously found with internal consistencies ranging between .72 and .85 (Alden et al., 1990). Coefficient alphas for the octants in the current study ranged from .75 to .90, with an internal consistency of .96 for the total interpersonal problems. T-scores were calculated based on standard scoring in the general population. Instead of having eight octant variables, weighted axis scores were derived for the affiliation and control dimensions (Affiliation = F – H + .707(FD + FS) - .707(HD + HS), and Control = D – S + .707(HD + FD) - .707(HS + FS)). The interaction between affiliation and control captures the patient's location on the circumplex.

Impact Message Inventory - Circumplex. The IMI-C was developed as an other-rater questionnaire to measure an interactant's experience of the pull or covert reaction from another, based on the octant structure of the circumplex and on interpersonal complementarity (Kiesler & Schmidt, 1993; Schmidt, Wagner, & Kiesler, 1999). From a rater's covert perception, the ratee's overt behaviour can be inferred to reflect similar affiliation and opposite control. The octant scales are: Dominant, Hostile-Dominant, Hostile, Hostile-Submissive, Submissive, Friendly-Submissive, Friendly, and Friendly-Dominant. Items take the following form: When I am with this person, he/she makes me feel ... e.g., that I could relax and he/she'd take care of it; here indicating the interactant's experience of being pulled to be friendly and submissive, and perceiving the other as Friendly-Dominant. Items are scored on a 4-point Likert scale, from 1 (not at all) to 4 (very much so). In the current study, the patients rated each co-therapist (male and female), using the 90-item version. However, the 56-item version has been found to have
better psychometric and circumplex properties (Kiesler & Schmidt, 2006). Thus the inventory was scored based on the 56 items. It has been found that the median internal consistencies for the octants ranged from .69 to .85 (Kiesler & Schmidt, 2006). In the current study, average coefficient alphas ranged from .61 to .89 across the octants and the two therapists. The weighted axis scores for affiliation and control are used, and their interaction (i.e., Affiliation = F – H + .707(FD + FS) - .707 (HD + HS), and Control = D – S + .707(HD + FD) - .707(HS + FS)). Test-retest reliabilities over the five days, or the intraclass correlations, for the affiliation and control axis scores were .94 and .91 for ratings of female therapist, and .93 and .84 for ratings of the male therapist, respectively. Due to limitations in statistical modeling in the current study, it was not viable to analyze ratings separately for female and male therapists. Specifically, gender of therapists is a group level variable (level 3), and level 3 analyses are beyond the scope of the current study as is discussed shortly (see data modeling section). Thus patients' ratings for female and male therapist were averaged into one score for each day.

**Group Psychotherapy**

The study's research questions were examined within the context of group psychodynamic interpersonal therapy. This treatment integrated psychodynamic, interpersonal and group therapy approaches (see Tasca et al., 2005; Yalom & Leszcz, 2005; Rutan et al., 2007 for further details). The group psychodynamic interpersonal therapy focused on facilitating changes in patients' maladaptive interpersonal and intrapersonal patterns, and underlying processes. The group worked to understand and explore patients' patterns and interpersonal pull and interpret responses within the group. Group members were encouraged to share feedback with one another and remain in the "here-and-now" in exploring relationships within the group. A safe environment must be created to allow patients to begin to risk giving up on their
defensive mechanisms, tolerating intense discomfort, and testing their beliefs and new ways of interacting within the group. When tolerance is deepened, patients' views of themselves and others are widened and he-or-she experiences him-or-herself with more authenticity. Changes in patients' patterns were acknowledged and reinforced.

Patients entered the group on different weeks as they were admitted into the Southdown Institute program. Patients received intensive daily group psychodynamic interpersonal treatment throughout their stay but data was collected for the duration of one week (i.e., five consecutive days, Monday through Friday). Sessions were 75 minutes in length and were conducted by two co-therapists, one of each gender. Co-therapists had either a masters' or doctorate degree in clinical psychology, or a masters' degree in social work, and had above seven years of clinical experience post-registration. Therapists were blind to the study's questions and to patients' levels on the variables under investigation.

**Procedure**

Group therapy was conducted in a naturalistic setting, that of the residential program at the Southdown Institute and thus capitalizes on ecological validity. Patients were not randomly assigned, manuals were not used in conducting sessions, and patient pathologies were not isolated into groups. Admission into the groups occurred as in natural clinical practice and psychotherapy sessions were conducted as usual in accordance with the site's procedures, preserving the complexity of real-life treatment. The groups under study were open, that is, patients entered the group at different weeks as they were admitted to the Southdown Institute. In other words, at any one given time, a group was composed of patients who recently began treatment, patients who were soon terminating treatment, and patients at various stages of treatment in between. Patients were in treatment for an average of 5 months, ranging from 4 to 7
months. In the study, groups were followed from Monday to Friday of one particular week. Patients had been receiving treatment prior to the start of the study from 0 to 32 (\(M = 11.97, SD = 7.94\)) weeks. One group had Thursday off as a day of reflection, and five patients missed a session for a variety of reasons (e.g., sick day). Patients completed the PSPS and IIP at admission to the Southdown Institute. Patients answered the CALPAS-G and IMI after each group treatment session of the week under study. The CCI was completed by the patients after the first and last sessions of the week.

**Data Analyses**

**Data screening and cleaning.** Data were examined based on procedures from Tabachnick and Fidell (2007). Once data entry errors were corrected, regression analyses were run to estimate cook’s distance, leverage, studentized deleted residuals and mahalanobis distance scores for each independent variable. These serve to detect possible univariate outliers. One univariate outlier was found at one time-point for one patient on patient commitment. Visually, this value was the lowest in and far from the entire sample; it also did not fit with the particular patient’s scores on patient commitment which were much higher on the remaining days. The outlier's studentized deleted residual score was extremely low. This value was substituted by the respective patient's mean on patient commitment across the remaining days. Further, skewness and kurtosis values were examined for all variables and were found to be within appropriate range. However, according to the Shapiro-Wilk test of normality, nonnormal distributions were found for nondisclosure of imperfections, patient working capacity, patient commitment, cohesion, catharsis, impact affiliation messages, and impact control messages. Upon graphical inspection of these variables (i.e., frequency histograms and expected normal probability plots), and given skewness and kurtosis values within appropriate range, it was deemed that
distributions were sufficiently near-normal. Data were left intact, that is untransformed, in order to facilitate interpretation of results. Missing data at the repeated measures level were left as is as multilevel modeling is robust in estimating analyses with these types of missing data. Multilevel modeling, however, is not robust in estimating analyses with missing data at the patient level. Initially, multiple imputations were attempted for the patient level; however, this coding resulted in error messages despite trouble shooting. Ultimately, missing data at the patient level were handled by substituting mean values. Mean values were calculated within the patient's treatment group and within gender, allowing more variance than using the entire sample's mean. There were 17 patients with missing values for the IIP-C scores, and 2 for the perfectionistic self-presentation facets.

Next, scatterplots were examined and it was found that several bivariate relationships between variables were nonlinear and rather took a quadratic shape. This was found for Session by the process factors, indicating an initially quicker increase on process factors that then slows down as treatment progresses. In order to capture these relationships, the squared term of the Session variable was included in the analytical models (further information to follow).

Additionally, several quadratic relationships were also found among the perfectionistic self-presentation facets and the interpersonal variables by the process factors. It is important to acknowledge these quadratic scatterplots as it suggests that the assumption of linearity is not met. Still, given that the study's hypotheses are framed in terms of linear relationships, analyses maintained a linear framework. Quadratic analyses of the independent and intervening variables are beyond the scope of this study and were deemed to be too complex and exploratory for interpretation within the purposes of this study.
Finally, to check for multivariate outliers, as well as for multivariate normality, linearity and homoscedasticity of residuals, preliminary test regressions were conducted as suggested by Tabachnick and Fidell (2007). This does not, however, capture all residual terms for multilevel modeling, such as the slope's residuals. In terms of multivariate outliers, Mahalanobis distance and Cook's distance for all cases were found to be within the appropriate range. Multivariate normality, linearity and homoscedasticity were inspected visually based on residual plots (i.e., frequency histograms, expected normal probability plots, and standardized scatterplots). Residuals were deemed to be sufficiently near-normal, near-linear, and near-homoscedastic.

**Data modeling.** Modeling the relationship among perfectionistic self-presentation facets, process factors, and interpersonal variables, over the course of sessions, that is, with nested data such as in this study, requires multilevel modeling. Measurements of process factors, and some interpersonal variables (i.e., impact message scores), are repeated (level 1 of the model) and are nested by patient (level 2), and patients are nested by treatment group (level 3), and this structure should be accounted for in a more accurate model (e.g., Raudenbush & Liu, 2000; Snijders & Bosker, 1999; West, Ryu, Kwok, & Cham, 2011; see Fig. 4). Further, multilevel modeling allows for the estimation of the slope (i.e., rate of change across sessions). However, in this study, due to the limited sample size at the group level (i.e., 9), level 3 analyses were not conducted, such as discussed by Tasca, Illing, Joyce, and Ogrodniczuk (2009) and such as in the case of group treatment analyses by Hewitt and colleagues (2015).

To capture and disentangle effects at each level, it is helpful to center independent and intervening variables at each level (Enders & Tofighi, 2007). Variables with repeated measurements are centered within each patient to capture level 1 effects, such that the patient's mean on the given variable is subtracted from each of the patient's measurements on that variable.
(denoted as WP). WP centering demonstrates the patient's own variability or change throughout the week under study. At level 2, variables are grand mean centered, that is the sample's mean on the given variable is subtracted from the patient's one score (if no repeated measurements) or mean score (if repeated measurements) on the variable (denoted as C). C centering demonstrates differences between patients across the sample.

To note, given the structure of the data and the curvilinear progression of process factors over sessions, it was important to also consider how best to handle the Session variable. Specifically, because the group had an open format (i.e., patients entered the group at different times) and the groups were assessed for one week, this means that each patient contributed one week of data, or 5 sessions worth of data, however, the week of data, or session numbers, each patient contributed was quite different. One patient's data might have represented sessions 1 to 5 for him-or-her, another patient's sessions 31 to 35, yet another patient's sessions 86 to 90, and so on. When all the patients' data across the wide range of sessions is graphically illustrated on the process factors, a quadratic shape is seen. I needed to capture this overall quadratic function while also being able to examine what was going on for each particular patient in the one week he-or-she was assessed. It was thus necessary to separate the Session variable into two methods of centering. The patient's first measured session in his-or-her overall treatment was centered across the sample's wide range of first measured session (i.e., SessionC). At the same time, each patient's Monday assessment was numbered as 0 (i.e., to capture the week's intercept), Tuesday as 1, and so on to Friday as 4 (i.e., SessionWP). For example, if a patient was assessed from sessions 86 to 90 in their treatment, SessionC would be calculated as the sample's mean on first assessed session subtracted from 86, and SessionWP would be indicated as 0, 1, 2, 3, 4 for the patient. With this centering approach, it is then possible to add the squared term of SessionC into
modeling and capture the overall quadratic function over the range of sessions. SessionC + SessionC^2 must remain in the equation as fixed variables regardless of their significance levels to capture this overall shape (see Fig. 5). Then independent variables can be examined as having effects at the intercept of the patient's week (i.e., when a variable is found to have a main effect) or on the patient's slope of the week (i.e., when a variable is found to interact with SessionWP) to estimate each patient's level on the process factor across his-or-her specific one week of measurements (see Fig. 6). It should be noted that hypotheses of general associations were tested based on the intercept (i.e., the first data-point assessed for each patient, or the first session of the assessed week) for consistency in data modeling. The process difficulties that perfectionistic self-presenting individuals tend to experience are likely to be seen at any given session, including the first session of the assessed week.

All models were estimated using R's multilevel model lme4 package (R Development Core Team, 2016; Bates & Sarkar, 2007) under restricted maximum likelihood. Given the interest in investigating pathways with intervening variables, analyses included modeling direct effects (among perfectionistic self-presentation facets and process factors), indirect effects (among perfectionistic self-presentation facets and interpersonal variables, and among interpersonal variables and process factors controlling for perfectionistic self-presentation facets), and direct effects after controlling for intervening variables. Analytic equations are specified in a subsequent section of the method.

It is important to mention that multicollinearity is of concern in the study's multilevel modeling approach as perfectionistic self-presentation facets are highly related as are the interpersonal variables as well (though still distinct; Hewitt et al., 2003; Alden et al., 1990; Schmidt et al., 1999). To address this concern and allow for cleaner results, models were
conducted with one independent variable of interest at a time (e.g., one perfectionistic self-presentation facet per model). This also allows us to avoid the difficulties of partialing out among similar variables (e.g., perfectionistic self-presentation facets) which may modify the resultant variables (e.g., Hill, 2014). Additionally, higher-order (e.g., interaction) terms may be trimmed depending on significance level. $\text{Session}_i, \text{Session}_i^2, \text{age}_i, \text{and gender}_i$ were maintained in all models, regardless of significance levels, to consistently control for the overall quadratic shape over sessions and for demographic differences. Otherwise, models with a significant independent variable of interest (e.g., a perfectionistic self-presentation facet) were further expanded upon in following steps of analysis.

It is important to acknowledge that the current study includes a large number of hypothesized analyses. While analyses are conducted in a step-wise fashion towards the examination of indirect intervening pathways, and while variables were selected based on theoretical and empirical foundations, the large number of analyses poses a statistical risk of chance positive or false findings (i.e., Type I errors). One might consider evaluating these analyses with a lower significance or probability value (i.e., alpha correcting); however, this approach would reduce the already limited power of the study (as a result of the small sample size). Retaining the limited power, that is the probability of detecting a true effect, was thus prioritized in the present study. Findings from the current study will need to be further investigated in future research, for empirical replication and support, with larger power and sample size, allowing for an approach to protecting against increased Type I error rates.

Additionally, given the complexities of including interaction terms (i.e., interpersonal variables) within multilevel models, analytic steps in evaluating indirect effects via intervening variables are limited, at this time. Biesanz, Falk, and Savelei (2010) discussed the limited
understanding of assessing indirect effects. While confidence interval approaches have gained popularity, with smaller sample sizes (such as in the present study), the accuracy of these approaches is unclear. Biesanz and colleagues (2010) investigated the use of approaches to assess indirect effects in the context of incomplete and nonnormal data. However, the accuracy of these approaches, as well as how to apply these approaches, in assessing conditional indirect effects (i.e., interactions), within a multilevel model, remains unclear. Given the complexity of the current study's data, and the need for further statistical research, I proceeded with a null hypothesis testing approach, the classical joint significance approach of Baron and Kenny (1986). In other words, if both associations among a perfectionistic self-presentation facet and an interpersonal variable and among an interpersonal variable(s) and a process factor (controlling for a perfectionistic self-presentation facet), at intercept or slope, are found to be significant, it can be suggested that there is an indirect (intercept or slope) effect through the intervening variable; if either of these associations are not significant, there is no indirect effect. The joint significance approach is generally found to "provide a reasonable balance between controlling Type I error rates and maximizing power (Biesanz et al., 2010, p. 696)". Thus, the joint significance approach is sufficiently effective in assessing for intervening effects. This was the approach taken in the current study, as supplemental computational methods are difficult to implement in the study and present with risks to rates of Type I error and power (see Biesanz et al., 2010). Additionally, Preacher, Rucker, and Hayes (2007) discussed conditional indirect effects (i.e., interactions). Within the joint significant approach, I can use simple slopes analyses and graphical illustrations of these to further investigate conditional indirect effects. By centering the interaction terms at values of interest (i.e., mean, 1 standard deviation below, and 1 standard deviation above), I can interpret the indirect effect at each given value of interest.
Multilevel Modeling Assumptions. Separating out and examining the individual differences of the intercept and of the slope for each outcome variable allows me to test whether there is sufficient variance on the intercept and slope to include predictors to account for this variance. Significant individual differences were found across patients in the level of total alliance, patient working capacity, patient commitment, work strategy consensus, and group understanding and involvement, on their intercept, $\tau^2 = 0.53, \chi^2(1) = 3.53, p < .05; \tau^2 = 0.79, \chi^2(1) = 56.32, p < .001; \tau^2 = 0.65, \chi^2(1) = 9.84, p < .001; \tau^2 = 0.69, \chi^2(1) = 3.87, p < .05; \tau^2 = 0.85, \chi^2(1) = 59.35, p < .001$; respectively. Individual differences for the slope of total alliance, patient working capacity, patient commitment, work strategy consensus, and group understanding and involvement were not significant, $\tau^2 = 0.06, \chi^2(1) = 0.89, p = .17; \tau^2 = 0.17, \chi^2(1) = 1.25, p = .13; \tau^2 = 0.08, \chi^2(1) = 1.68, p = .09; \tau^2 = 0.08, \chi^2(1) = 0.83, p = .18; \tau^2 = 0.18, \chi^2(1) = 2.29, p = .07$; respectively. In accord with Hox (2010), p-values are too large and were divided by 2. Individual differences for the intercept or slope allows for the examination of predictors that may affect levels of the intercept or slope. Overall, there is sufficient variance at the intercept for all alliance scales such that predictors of the intercept can be included for these models. However, predictors of the slope are not to be included. This suggests that patient level predictors (e.g., perfectionistic self-presentation facets) have no effects on the slope, and thus analyses of slope predictors would not be appropriate.

As noted previously, due to too few repeated measurements of cohesion, catharsis and insight, the slope itself (and its predictors) cannot be included in these models. In this way, analyses for cohesion, catharsis, and insight drop from multilevel models down to regression models with variables at the between-patient level.
Further, significant individual differences were found across patients in the level of impact messages, affiliation and control scores, on their intercept; $\tau^2 = 1.10$, $\chi^2_{(1)} = 282.78$, $p < .001$, and $\tau^2 = 0.47$, $\chi^2_{(1)} = 100.54$, $p < .001$, respectively; as well as on their slope; $\tau^2 = 0.17$, $\chi^2_{(1)} = 9.24$, $p < .01$, and $\tau^2 = 0.13$, $\chi^2_{(1)} = 25.68$, $p < .001$, respectively. P-values were divided by 2 (Hox, 2010). Accordingly, predictors can be included for the intercept and for the slope of the impact message inventory, affiliation and control dimensions.

**Analytic Equations.**

**Relationships Among Perfectionistic Self-Presentation Facets and Process Factors.**

For analyses examining hypotheses of the relationships among perfectionistic self-presentation facets and process factors (sets 1 to 4), in consideration of the two approaches to centering (as previously discussed), the general equation is as follows:

$$Alliance_{ij} = \beta_0i + \beta_1SessionC_i + \beta_2SessionC^2_i + \beta_3SessionWP_{ij} + \varepsilon_{ij}.$$  
$$\beta_0i = \beta_{00} + \beta_{01}ageC_i + \beta_{02}genderC_i + \beta_{03}perfectionisticC_i + \mu_{0i}.$$  
$$\beta_3i = \beta_{30} + \beta_{31}ageC_i + \beta_{32}genderC_i + \beta_{33}perfectionisticC_i + \mu_{3i}.$$  

Here, $Alliance_{ij}$ is the assessment of the patient $i$ on the process factor at time $j$. In this study, different models used $Alliance_{ij}$ to represent total alliance, patient working capacity, patient commitment, work strategy consensus, or group understanding and involvement. Further, $ageC_i$ and $genderC_i$ are the patient $i$'s age and gender, included in the model as demographic covariates. $perfectionisticC_i$ is the patient $i$'s level on the perfectionistic self-presentation facet. $perfectionisticC_i$ represents perfectionistic self-promotion, nondisplay of imperfections, or nondisclosure of imperfections in different models. Additionally, note that intercept and slope effects are examined simultaneously within the model; that is, $\beta_{0i}$ and $\beta_{3i}$ equations estimate the intercept and slope effects, respectively, with the random effects by patient for the intercept, $\mu_{0i}$, and for the slope, $\mu_{3i}$. These random effects were estimated as
variance components with standard deviations $\tau_{00}$ and $\tau_{30}$, respectively. Note additionally that $\beta_1$ and $\beta_2$ are fixed effects. Importantly, for the purposes of examining these sets of hypotheses, the values and significances of coefficients $\beta_{03}$ and $\beta_{33}$ within each model are the focus of the present study. These allow for the evaluation of the effect of the respective perfectionistic self-presentation facet on the intercept and slope for the given alliance scale.

However, as significant individual differences were not found for the slope on any of the alliance scales (see previous), $\beta_{31}\text{age}_i$, $\beta_{32}\text{gender}_i$, $\beta_{33}\text{perfectionistic}_i$ must be removed from the equation, as these represent patient level predictors on the slope. The slope itself still remains in the model. Then coefficient $\beta_{03}$ becomes of prime interest in examining the role of each perfectionistic self-presentation facet on each alliance scale at the intercept. Thus, the general equation becomes:

\[
\text{Alliance}_{ij} = \beta_{0i} + \beta_1\text{Session}_i + \beta_2\text{Session}^2_i + \beta_3\text{SessionWP}_{ij} + \epsilon_{ij}, \\
\beta_{0i} = \beta_{00} + \beta_{01}\text{age}_i + \beta_{02}\text{gender}_i + \beta_{03}\text{perfectionistic}_i + \mu_{0i}, \\
\beta_{3i} = \beta_{30} + \mu_{3i}.
\]

Further, the general equation for the climate factors is different. This is due to the fewer repeated measurements (i.e., twice) for cohesion, catharsis and insight. As a result, the slope itself and any effects on the slope could not be evaluated and thus the equation omits $\beta_{3i}$ components, as shown here:

\[
\text{Climate}_i = \beta_{0i} + \beta_1\text{Session}_i + \beta_2\text{Session}^2_i + \epsilon_i, \\
\beta_{0i} = \beta_{00} + \beta_{01}\text{age}_i + \beta_{02}\text{gender}_i + \beta_{03}\text{perfectionistic}_i + \mu_{0i}.
\]

$\text{Climate}_i$ is the assessment of the patient $i$ on either cohesion, catharsis, or insight depending on the model. Again, I am interested in coefficient $\beta_{03}$ in examining hypotheses set 4.
**Relationship Among Perfectionistic Self-Presentation Facets and Interpersonal Variables.** For analyses examining hypotheses of the relationships among perfectionistic self-presentation facets and interpersonal problems (sets 5 to 7), the general equation is as follows:

\[ \text{IntProblems}_i = \beta_{0i} + \varepsilon_i. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_i + \beta_{02}\text{gender}_i + \beta_{03}\text{perfectionistic}_i + \mu_{0i}. \]

Here, \( \text{IntProblems}_i \) is the assessment of the patient \( i \) on the level 2 interpersonal variable, in this case, scores from the Inventory of Interpersonal Problems (IIP) (i.e., total score, affiliation dimension, or control dimension, depending on the model). For the purposes of examining these sets of hypotheses, the values and significances of coefficients \( \beta_{03} \) within each model are the focus of the present study, allowing for the evaluation of the effect of the respective perfectionistic self-presentation facet on the particular dimension of interpersonal problems.

However, the general equation for the impact messages is different as a result of the repeated measurement of the variable (hypotheses sets 8 and 9). \( \text{ImpMessages}_{ij} \) is the assessment of patient \( i \) on the interpersonal variable at time \( j \), thus a level 1 variable, and represents, in different models, either affiliation messages or control messages on a given day \( j \). Note that individual differences on the slope were found to be significant for the impact messages dimensions (see previous), and thus the equation includes slope effects, as follows. Here, either \( \beta_{03} \) or \( \beta_{13} \) would be of interest.

\[ \text{ImpMessages}_{ij} = \beta_{0i} + \beta_{1i}\text{Session}_i + \varepsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_i + \beta_{02}\text{gender}_i + \beta_{03}\text{perfectionistic}_i + \mu_{0i}. \]

\[ \beta_{1i} = \beta_{10} + \beta_{11}\text{age}_i + \beta_{12}\text{gender}_i + \beta_{13}\text{perfectionistic}_i + \mu_{1i}. \]
Intervening Role of Interpersonal Variables on the Relationship Among Perfectionistic Self-Presentation Facets and Process Factors.

Analyses examining hypotheses of the indirect and intervening role (set 10) are dependent on results of the aforementioned equations. Only in those instances in which significant associations were found between a perfectionistic self-presentation facet and a process factor, and between this same facet and an interpersonal variable would proceed to this next step of analysis. Depending on the variables in question, general equations are as follows:

\[ \text{Alliance}_{ij} = \beta_{0i} + \beta_{1i}\text{Session}_C + \beta_{2i}\text{Session}_C^2 + \beta_{3i}\text{Session}_WP_{ij} + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_C + \beta_{02}\text{gender}_C + \beta_{03}\text{perfectionistic}_C + \beta_{04}\text{TotProblems}_C + \mu_{0i}. \]

\[ \beta_{3i} = \beta_{30} + \mu_{3i}. \]

Or,

\[ \text{Alliance}_{ij} = \beta_{0i} + \beta_{1i}\text{Session}_C + \beta_{2i}\text{Session}_C^2 + \beta_{3i}\text{Session}_WP_{ij} + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_C + \beta_{02}\text{gender}_C + \beta_{03}\text{perfectionistic}_C + \beta_{04}\text{AffProblems}_C + \beta_{05}\text{ConProblems}_C + \beta_{06}\text{AffProblems}_C\text{ConProblems}_C + \mu_{0i}. \]

\[ \beta_{3i} = \beta_{30} + \mu_{3i}. \]

Or,

\[ \text{Alliance}_{ij} = \beta_{0i} + \beta_{1i}\text{Session}_C + \beta_{2i}\text{Session}_C^2 + \beta_{3i}\text{Session}_WP_{ij} + \beta_{4i}\text{AffMessages}_WP_{ij} + \beta_{5i}\text{ConMessages}_WP_{ij} + \beta_{6i}\text{AffMessages}_WP_{ij}\text{ConMessages}_WP_{ij} + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_C + \beta_{02}\text{gender}_C + \beta_{03}\text{perfectionistic}_C + \beta_{04}\text{AffMessages}_C + \beta_{05}\text{ConMessages}_C + \beta_{06}\text{AffMessages}_C\text{ConMessages}_C + \mu_{0i}. \]

\[ \beta_{3i} = \beta_{30} + \mu_{3i}. \]

\[ \beta_{4i} = \beta_{40} + \mu_{4i}. \]

\[ \beta_{5i} = \beta_{50} + \mu_{5i}. \]

\[ \beta_{6i} = \beta_{60} + \mu_{6i}. \]

Or,

\[ \text{Climate}_i = \beta_{0i} + \beta_{1i}\text{Session}_C + \beta_{2i}\text{Session}_C^2 + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_C + \beta_{02}\text{gender}_C + \beta_{03}\text{perfectionistic}_C + \beta_{04}\text{TotProblems}_C + \mu_{0i}. \]

Or,

\[ \text{Climate}_i = \beta_{0i} + \beta_{1i}\text{Session}_C + \beta_{2i}\text{Session}_C^2 + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01}\text{age}_C + \beta_{02}\text{gender}_C + \beta_{03}\text{perfectionistic}_C + \beta_{04}\text{AffProblems}_C + \beta_{05}\text{ConProblems}_C + \beta_{06}\text{AffProblems}_C\text{ConProblems}_C + \mu_{0i}. \]
Or,

\[ Climate_i = \beta_{0i} + \beta_1 SessionC_i + \beta_2 SessionC_i^2 + \epsilon_{ij}. \]

\[ \beta_{0i} = \beta_{00} + \beta_{01} ageC_i + \beta_{02} genderC_i + \beta_{03} perfectionisticC_i + \beta_{04} AffMessagesC_i + \beta_{05} ConMessagesC_i + \epsilon_{0i}. \]

Note that I investigated the interaction between affiliation and control dimensions on either the interpersonal problems or impact messages to capture the circumplex nature of these variables. An interaction here would suggest a conditional indirect effect. Note further that the equation examining alliance and impact messages includes the impact message dimensions at level 1 and level 2, given the repeated measurement of these variables. As well, it includes all theoretical random effects though it may not be feasible to include all of these. Coefficients of importance would be those for the interpersonal variables (i.e., \( \beta_{04}, \beta_{05}, \beta_{06}, \) or \( \beta_{04i}, \beta_{05i}, \beta_{06i}, \) depending on the model), looking for a significant effect, suggesting an association between the interpersonal variable and the process factor, the second part to investigating an indirect effect. Next, coefficients for the perfectionistic self-presentation facet (i.e., \( \beta_{03} \)) would be important, looking for a reduction in the effect, suggesting that the association between the facet and the process factor was intervened on by the interpersonal variable(s).

Moreover, at any analytic step, effect sizes can be calculated as

\[ d = \frac{2 \beta_{\text{predictor}} SD_{\text{predictor}}}{SD_{\text{residual}}} \]

(\( Tymms, 2004 \)). In this equation, \( \beta_{\text{predictor}} \) represents the estimate for the predictor in question (e.g., perfectionistic self-presentation facet, interpersonal variable), \( SD_{\text{predictor}} \) represents the standard deviation of the predictor, and \( SD_{\text{residual}} \) represents the standard deviation of the residuals in the model. It is unclear at present, however, how to calculate confidence intervals for these effect sizes. As suggested by Cohen (1988), effect sizes (\( d \)) of 0.20, 0.50, and 0.80 are considered to be small, medium, and large, respectively.
Results

The means, standard deviations, and bivariate correlations among age, gender, perfectionistic self-presentation facets, alliance scales (scores on Monday, the first session of the assessed week), climate factors (scores averaged across Monday and Friday sessions), interpersonal problems, and patients' ratings of therapists' impact messages (scores on Monday, the first session of the assessed week) are displayed in Table 1. As expected, means of perfectionistic self-presentation facets, alliance scales, climate factors, interpersonal problems, and impact messages were comparable to clinical samples in the literature (Hewitt et al., 2003; Gaston, 1991; Furhiman et al., 1986; Alden et al., 1990; Schmidt et al., 1999).

Correlations. Upon examination of the correlations with demographic variables, age was not significantly correlated with perfectionistic self-presentation facets, process factors, or interpersonal variables. Although age was not correlated with the variables of interest in the present study, age is often an important demographic variable in the perfectionism and clinical literatures as a covariate (e.g., MacKinnon et al., 2012; Zuroff et al., 2017) or in comparing or counterbalancing assignment to conditions (e.g., Blatt et al., 1995; Hewitt et al., 2015). Gender was significantly correlated with work strategy consensus, group understanding and involvement, and interpersonal affiliation problems. Age and gender were brought forward consistently in analytic models as demographic covariates.

With regard to perfectionistic self-presentation, only nondisclosure of imperfections was correlated with any of the alliance scales - it was negatively correlated with total alliance and with patient working capacity. That is, nondisclosing patients experienced less engagement with the therapy group. The perfectionistic self-presentation facets were not found to have a significant correlation with any of the climate factors. In addition, all three facets were
positively correlated with total interpersonal problems and with interpersonal affiliation problems, and negatively correlated with interpersonal control problems. This suggests that perfectionistic self-presenting patients experienced more interpersonal distress particularly of an overly-friendly-submissive nature. None of the perfectionistic self-presentation facets were significantly correlated with the dimensions of patients' ratings of therapists' impact messages.

In terms of the relationship among interpersonal variables and process factors, total, affiliation and control dimensions of the interpersonal problems were not significantly correlated with any of the alliance scales. Additionally, only interpersonal control problems was found to have a correlation with one climate factor, that of cohesion (negatively). This suggests that dominant patients experienced less sense of togetherness with the group, and vice versa that submissive patients experienced more togetherness. On the other hand, the patients’ ratings of therapists' impact affiliation messages significantly and positively correlated with total alliance, patient working capacity, and patient commitment; and impact control messages, positively with work strategy consensus. This suggests that patients who perceived therapists as more friendly and dominant experienced a stronger connection with the group. Ratings of affiliation messages were positively correlated with catharsis, suggesting that perceptions of friendlier therapists allowed patients to feel more at ease experiencing emotions within the group.

**Analytic Modeling**

It should be noted that while the aforementioned correlations provide a first basis to further analyze associations, these correlations may be limited. This is especially because the time element of the associations was not controlled for in correlations. This is particularly important in consideration of associations with variables containing a time element (i.e., alliance scales and impact messages). Thus, nonsignificant correlations did not thwart further multilevel
analyses of these possible associations. As such, associations found in multilevel models (to follow) may be different from associations found in correlations.

**Relationship Among Perfectionistic Self-Presentation Facets and Process Factors.**

*Perfectionistic Self-Presentation Facets and Total Alliance.* In testing associations among perfectionistic self-presentation facets and total alliance (hypotheses set 1), results of multilevel modeling are displayed in Table 2. Analyses were conducted (separately) for perfectionistic self-promotion, nondisplay of imperfections, and nondisclosure of imperfections, and controlling for age, gender, session in treatment, and rate of change of total alliance. The patients’ level of perfectionistic self-promotion was found to be significantly and negatively associated with the patients’ level of total alliance at the intercept with a medium-to-large effect, \( b_{03} = -0.019, t(61) = -2.64, p < .05, d = 0.60 \). This was also the case for nondisplay of imperfections with a medium-to-large effect \( b_{03} = -0.020, t(61) = -2.69, p < .01, d = 0.62 \), and nondisclosure of imperfections with a medium effect \( b_{03} = -0.026, t(61) = -2.37, p < .05, d = 0.54 \). Thus, patients with higher levels of perfectionistic self-presentation began the week with lower levels of alliance, suggesting that these patients are at a disadvantage in connecting and engaging with the group.

*Perfectionistic Self-Presentation Facets and Alliance Scales.* In terms of testing associations among perfectionistic self-presentation facets and specific alliance scales (hypotheses set 2), these results are found in Tables 3 (patient working capacity), 4 (patient commitment), 5 (work strategy consensus), and 6 (group understanding and involvement).

In terms of patient working capacity, patients’ level of perfectionistic self-promotion was found to be significantly and negatively associated with levels of patient working capacity at the intercept with a medium effect, \( b_{03} = -0.021, t(61) = -2.21, p < .05, d = 0.49 \). This was
also the case for nondisplay of imperfections with a medium effect ($b_{03} = -0.024$, $t(61) = -2.51$, $p < .05$, $d = 0.54$), and nondisclosure of imperfections with a nearly-large effect ($b_{03} = -0.051$, $t(61) = -3.69$, $p < .001$, $d = 0.76$). These findings suggest that patients with elevated perfectionistic self-presentation have more difficulty working actively in the group. Further, significant and negative associations were also found with levels of patient commitment at the intercept for perfectionistic self-promotion with a nearly-large effect, $b_{03} = -0.022$, $t(61) = -2.80$, $p < .01$, $d = 0.73$, and for nondisplay of imperfections with a medium-to-large effect ($b_{03} = -0.020$, $t(61) = -2.43$, $p < .05$, $d = 0.64$). On the other hand, the patients' level of nondisclosure of imperfections was found not to be significantly associated with levels of patient commitment at the intercept ($b_{03} = -0.022$, $t(61) = -1.74$, $ns$, $d = 0.47$). Results suggest that perfectionistic self-promoting and nondisplaying patients struggle to trust and bond with the group.

However, associations with other alliance scales were not significant. Specifically, patients' levels of perfectionistic self-promotion, nondisplay of imperfections, and nondisclosure of imperfections were not found to be significantly associated with levels of work strategy consensus at the intercept; $b_{03} = -0.016$, $t(61) = -1.64$, $ns$, $d = 0.35$; $b_{03} = -0.017$, $t(61) = -1.70$, $ns$, $d = 0.36$; $b_{03} = -0.023$, $t(61) = -1.53$, $ns$, $d = 0.33$; respectively. This suggests that perfectionistic self-presentation did not impact the patients' perceptions among the group of the agreement on goals. As well, the patients' levels of perfectionistic self-promotion, nondisplay of imperfections, and nondisclosure of imperfections were not found to be significantly associated with levels of group understanding and involvement at the intercept; $b_{03} = -0.015$, $t(61) = -1.47$, $ns$, $d = 0.35$; $b_{03} = -0.017$, $t(61) = -1.59$, $ns$, $d = 0.39$; $b_{03} = -0.012$, $t(61) = -0.72$, $ns$, $d = 0.18$; respectively. This suggests that perfectionistic self-presentation did not affect patients' perceptions of group members' participation.
In terms of assessing associations among perfectionistic self-presentation facets and the rate of change over the week (i.e., slope) of alliance scales (hypotheses set 3), as indicated previously, there were no individual differences found on the slope. That is, it was no longer appropriate to test this set of associations. This suggests that perfectionistic self-presentation did not influence change in alliance scales.

**Perfectionistic Self-Presentation Facets and Climate Factors.** In testing associations among perfectionistic self-presentation facets and the climate factors (hypotheses set 4), results are found for each climate factor in Tables 7 (cohesion), 8 (catharsis), and 9 (insight).

None of the patients' levels on any of the perfectionistic self-presentation facets were found to be significantly associated with levels of cohesion (perfectionistic self-promotion, $b_{03} = -0.0060$, $t(62) = -0.85$, $ns$, $d = 0.29$; nondisplay of imperfections, $b_{03} = -0.0021$, $t(62) = 0.29$, $ns$, $d = 0.10$; nondisclosure of imperfections, $b_{03} = -0.0038$, $t(62) = 0.35$, $ns$, $d = 0.12$; respectively), catharsis (perfectionistic self-promotion, $b_{03} = -0.011$, $t(62) = -1.80$, $ns$, $d = 0.41$; nondisplay of imperfections, $b_{03} = -0.0072$, $t(62) = -1.14$, $ns$, $d = 0.26$; nondisclosure of imperfections, $b_{03} = -0.0091$, $t(62) = -0.97$, $ns$, $d = 0.22$), and insight (perfectionistic self-promotion, $b_{03} = -0.0098$, $t(62) = -1.52$, $ns$, $d = 0.36$; nondisplay of imperfections, $b_{03} = -0.012$, $t(62) = -1.88$, $ns$, $d = 0.43$; nondisclosure of imperfections, $b_{03} = -0.0083$, $t(62) = -0.82$, $ns$, $d = 0.20$). This suggests that perfectionistic self-presentation levels did not impact patients' sense of togetherness with the group, patients' perceptions of the helpfulness of releasing emotions or of understanding oneself within the therapy group.

**Summary.** It was seen that perfectionistic self-presentation facets were found to be negatively associated with total alliance. Upon further examination, this negative association applied to the patient contribution scales of the alliance, patient working capacity and patient
commitment, and not to the other scales of work strategy consensus and group understanding and involvement. Some particularities among the three facets were seen with the scales, mostly that nondisclosure of imperfections showed no association with patient commitment. No significant associations were found among perfectionistic self-presentation facets and any of the climate factors, nor was there any evidence that perfectionistic self-presentation influenced change in alliance.

**Relationship Among Perfectionistic Self-Presentation Facets and Interpersonal Variables.**

*Perfectionistic Self-Presentation Facets and Interpersonal Problems.* Results for total interpersonal problems are found in Table 10, for interpersonal affiliation problems in Table 11, and for interpersonal control problems in Table 12.

In terms of testing associations among perfectionistic self-presentation facets and total interpersonal problems (hypotheses set 5), patients' level of perfectionistic self-promotion was found to be significantly and positively associated with the patients' level of total interpersonal problems, $b_{03} = 0.23$, $t(64) = 5.54$, $p < .001$. This was also the case for nondisplay of imperfections ($b_{03} = 0.33$, $t(64) = 7.98$, $p < .001$), and nondisclosure of imperfections ($b_{03} = 0.33$, $t(64) = 5.17$, $p < .001$). Note that effect sizes ($d$) were not calculated though it can be said that the effect sizes for all three effects are very large. This suggests that perfectionistic self-presenting patients experienced more interpersonal distress.

In terms of testing associations among perfectionistic self-presentation facets and interpersonal affiliation problems (hypotheses set 6), patients' level of perfectionistic self-promotion was found to be significantly and positively associated with the patients' level of interpersonal affiliation problems, $b_{03} = 0.48$, $t(64) = 5.79$, $p < .001$. This was also the case for
nondisplay of imperfections ($b_{03} = 0.43, t(64) = 5.00, p < .001$), and nondisclosure of imperfections ($b_{03} = 0.77, t(64) = 7.07, p < .001$). As aforementioned, effect sizes ($d$) were not calculated though are very large$^2$. Perfectionistic self-presenting patients had more problems on the positive pole of the affiliation dimension (i.e., over-friendliness problems).

In terms of testing associations among perfectionistic self-presentation and interpersonal control problems (hypotheses set 7), patients' level of perfectionistic self-promotion was found to be significantly and negatively associated with the patients' level of interpersonal control problems, $b_{03} = -0.60, t(64) = -5.41, p < .001$. This was also the case for nondisplay of imperfections ($b_{03} = -0.87, t(64) = -7.41, p < .001$), and nondisclosure of imperfections ($b_{03} = -1.43, t(64) = -8.97, p < .001$). As above, despite not conducting calculations, effect sizes for all three effects are very large$^2$. Perfectionistic self-presenting patients had more problems on the negative pole of the control dimension (i.e., submissiveness problems).

**Perfectionistic Self-Presentation Facets and Impact Messages (Patients' Ratings of Therapists).** Results are found for patients' ratings of therapists' impact affiliation messages in Table 13 and for patients' ratings of therapists' impact control messages in Table 14.

In terms of testing associations among perfectionistic self-presentation facets and impact affiliation messages (hypotheses set 8), patients' levels on any of these perfectionistic self-presentation facets were not found to be significantly associated with patients' ratings of therapists' impact affiliation messages, either at the intercept (perfectionistic self-promotion, $b_{03} = -0.0042, t(60) = -0.33, ns, d = 0.18$; nondisplay of imperfections, $b_{03} = 0.0021, t(60) = 0.16, ns, d = 0.09$; nondisclosure of imperfections, $b_{03} = -0.017, t(60) = -0.89, ns, d = 0.47$) or on the rate of change over the course of the week (perfectionistic self-promotion, $b_{13} = 0.00049, t(60) = 0.18, ns, d = 0.02$; nondisplay of imperfections, $b_{13} = 0.00023, t(60) = 0.08, ns, d = 0.02$; nondisclosure
of imperfections, $b_{13} = 0.0018, t(60) = 0.44, ns, d = 0.02)$. This suggests that perfectionistic self-presentation levels did not impact the patient's perception of therapists' level of affiliation. Further, in terms of testing associations among perfectionistic self-presentation facets and impact control messages (hypotheses set 9), the patients' levels on any of these facets were not found to be significantly associated with patients' ratings of therapists' impact control messages, either at the intercept (perfectionistic self-promotion, $b_{03} = -0.0017, t(60) = -0.24, ns, d = 0.11$; nondisplay of imperfections, $b_{03} = -0.012, t(60) = -1.56, ns, d = 0.77$; nondisclosure of imperfections, $b_{03} = -0.022, t(60) = -2.02, ns, d = 0.94$) or on the rate of change over the course of the week (perfectionistic self-promotion, $b_{13} = 0.000085, t(60) = 0.05, ns, d = 0.16$; nondisplay of imperfections, $b_{13} = 0.0024, t(60) = 1.28, ns, d = 0.16$; nondisclosure of imperfections, $b_{13} = 0.0039, t(60) = 1.40, ns, d = 0.16$). This suggests that perfectionistic self-presentation levels did not impact the patients' perceptions of therapists' level of control. It should be noted that even with the slope interactions trimmed out of the impact affiliation messages and impact control messages models, the intercept effects of the perfectionistic self-presentation facets remain nonsignificant.

Summary. Perfectionistic self-presentation facets were found to be associated with interpersonal problems. All three perfectionistic self-presentation facets were positively associated with total interpersonal problems and specifically with affiliation problems (i.e., over-friendliness) and negatively with control problems (i.e., submissiveness). Results are partly consistent with hypotheses, although in opposing direction for interpersonal affiliation problems. This suggests that perfectionistic self-presenting patients in the study behave in a less hostile and more friendly manner than was expected. Additionally, perfectionistic self-presentation facets were not found to be associated with patients' ratings of therapists' impact messages, at the
intercept or the rate of change over the course of the week. This suggests that patients with elevated perfectionistic self-presentation did not rate or perceive therapists’ interpersonal behaviours or messages differently than other patients.

**Intervening Role of Interpersonal Variables on the Relationship Among Perfectionistic Self-Presentation Facets and Process Factors.** The examination of indirect intervening hypotheses (set 10) is dependent on the combination of results from previously examined associations. Testing of an indirect association was only examined when the required direct associations were first found between a perfectionistic self-presentation facet and a process factor, and between this perfectionistic self-presentation facet and an interpersonal variable. When these two required direct associations were found, I then examined whether this interpersonal variable was associated with this process factor and whether this interpersonal variable intervened on the direct association between the perfectionistic self-presentation facet and the process factor.

Results for total alliance are found in Tables 15 (with total interpersonal problems as an indirect variable) and 16 (with interpersonal affiliation and control problems as indirect variables).

Although perfectionistic self-promotion was negatively associated with total alliance, and positively associated with total interpersonal problems (see previous), no association between total interpersonal problems and total alliance at the intercept was present ($b_{04} = -0.00066$, $t(60) = -0.07$, $ns$, $d = 0.02$) while controlling for perfectionistic self-promotion, age, gender, session in treatment, and the rate of change of total alliance. Thus the model reduced back to the initial perfectionistic self-promotion and total alliance model (direct effect; previously reviewed). In other words, no indirect or intervening effect through total interpersonal problems was found.
Similar results were found for nondisplay of imperfections (total interpersonal problems: $b_{04} = 0.0028$, $t(60) = 0.28$, $ns$, $d = 0.07$) and nondisclosure of imperfections (total interpersonal problems: $b_{04} = -0.0015$, $t(60) = -0.15$, $ns$, $d = 0.04$). Each of these models reduced back to the initial direct effect model.

Further, although perfectionistic self-promotion was negatively associated with total alliance, and perfectionistic self-promotion positively associated with interpersonal affiliation problems and negatively with interpersonal control problems (see previous), no association among these interpersonal variables, including their interaction, and total alliance at the intercept was present while controlling for perfectionistic self-promotion, age, gender, session in treatment, and rate of change of total alliance (affiliation problems: $b_{04} = -0.0017$, $t(58) = -0.29$, $ns$, $d = 0.08$; control problems: $b_{05} = -0.00059$, $t(58) = -0.17$, $ns$, $d = 0.04$; interaction: $b_{06} = 0.0000067$, $t(58) = 0.03$, $ns$, $d = 0.01$). Thus the model reduced back to the initial perfectionistic self-promotion and total alliance model (direct effect; previously reviewed). In other words, no indirect or intervening effect was found through interpersonal affiliation and control problems. Similar results were found for nondisplay of imperfections (affiliation problems: $b_{04} = -0.0022$, $t(58) = -0.39$, $ns$, $d = 0.10$; control problems: $b_{05} = -0.0022$, $t(58) = -0.58$, $ns$, $d = 0.15$; interaction: $b_{06} = -0.000039$, $t(58) = -0.18$, $ns$, $d = 0.04$) and nondisclosure of imperfections (affiliation problems: $b_{04} = -0.0014$, $t(58) = -0.24$, $ns$, $d = 0.06$; control problems: $b_{05} = -0.0020$, $t(58) = -0.52$, $ns$, $d = 0.13$; interaction: $b_{06} = -0.00011$, $t(58) = -0.51$, $ns$, $d = 0.12$). Each of these models reduced back to the initial direct effect model. It should be noted that even with the interaction trimmed out of the models, the affiliation and control dimensions remain nonsignificant. Overall, no indirect effects were found, and consequently no intervening effect, in the associations among perfectionistic self-presentation facets and total alliance.
Moreover, results for patient working capacity are found in Tables 17 (with total interpersonal problems as an indirect variable) and 18 (with interpersonal affiliation and control problems as indirect variables).

As detailed just previously, no indirect or intervening effects through total interpersonal problems were found for the associations between perfectionistic self-promotion and patient working capacity (total interpersonal problems: \( b_{04} = -0.0067, t(60) = -0.53, ns, d = 0.12 \)), between nondisplay of imperfections and patient working capacity (total interpersonal problems: \( b_{04} = -0.022, t(60) = -0.17, ns, d = 0.04 \)), nor between nondisclosure of imperfections and patient working capacity (total interpersonal problems: \( b_{04} = -0.0026, t(60) = -0.22, ns, d = 0.05 \)). Each of these models reduced back to the initial direct effect model.

As well, no indirect or intervening effects through interpersonal affiliation and control problems were found for the associations between perfectionistic self-promotion and patient working capacity (affiliation problems: \( b_{04} = -0.00072, t(58) = -0.09, ns, d = 0.02 \); control problems: \( b_{05} = 0.0036, t(58) = 0.78, ns, d = 0.18 \); interaction: \( b_{06} = -0.00018, t(58) = -0.62, ns, d = 0.14 \), between nondisplay of imperfections and patient working capacity (affiliation problems: \( b_{04} = -0.00074, t(58) = -0.10, ns, d = 0.02 \); control problems: \( b_{05} = 0.0017, t(58) = 0.35, ns, d = 0.08 \); interaction: \( b_{06} = -0.00023, t(58) = -0.80, ns, d = 0.18 \), nor between nondisclosure of imperfections and patient working capacity (affiliation problems: \( b_{04} = 0.0035, t(58) = 0.48, ns, d = 0.11 \); control problems: \( b_{05} = -0.00084, t(58) = -0.18, ns, d = 0.04 \); interaction: \( b_{06} = -0.00030, t(58) = -1.11, ns, d = 0.24 \)). Each of these models reduced back to the initial direct effect model.

Additionally, results for patient commitment are found in Tables 19 (with total interpersonal problems as an indirect variable) and 20 (with interpersonal affiliation and control problems as indirect variables).
As above, no indirect or intervening effects through total interpersonal problems were found for the associations between perfectionistic self-promotion and patient commitment (total interpersonal problems: $b_{04} = -0.0035$, $t(60) = -0.34$, $ns$, $d = 0.09$), nor between nondisplay of imperfections and patient commitment (total interpersonal problems: $b_{04} = -0.0016$, $t(60) = -0.14$, $ns$, $d = 0.04$). Each of these models reduced back to the initial direct effect model.

Also, no indirect or intervening effects through interpersonal affiliation and control problems were found for the associations between perfectionistic self-promotion and patient commitment (affiliation problems: $b_{04} = 0.0023$, $t(58) = 0.37$, $ns$, $d = 0.11$; control problems: $b_{05} = -0.0053$, $t(58) = -1.38$, $ns$, $d = 0.37$; interaction: $b_{06} = 0.00013$, $t(58) = 0.54$, $ns$, $d = 0.15$), nor between nondisplay of imperfections and patient commitment (affiliation problems: $b_{04} = 0.0011$, $t(58) = 0.17$, $ns$, $d = 0.05$; control problems: $b_{05} = -0.0071$, $t(58) = -1.73$, $ns$, $d = 0.49$; interaction: $b_{06} = 0.000063$, $t(58) = 0.26$, $ns$, $d = 0.07$). Each of these models reduced back to the initial direct effect model. As well, no indirect analysis was conducted for nondisclosure of imperfections and patient commitment as no significant direct association was found previously.

No other indirect analysis was conducted in the present study. This is because previous analyses did not find significant direct associations among the perfectionistic self-presentation facets and work strategy consensus, group understanding and involvement, cohesion, catharsis, or insight. Also, no significant associations were found among the perfectionistic self-presentation facets and the patients' ratings of therapists' impact affiliation and control messages, and as such, impact messages were not used in indirect analyses.

**Summary.** No indirect or intervening effects were found for interpersonal variables on the associations among perfectionistic self-presentation facets and alliance scales. Generally, perfectionistic self-presentation facets were associated with interpersonal problems but
interpersonal problems were then not associated with alliance scales. These findings are inconsistent with hypotheses.
Discussion

The study sought to investigate the associations among perfectionistic self-presentation, group therapeutic processes, and interpersonal difficulties, over the course of consecutive sessions. Residential treatment patients attending an intensive psychodynamic/interpersonal group were assessed over the course of one week (i.e., five group sessions). Patients were assessed on proclaiming and concealing perfectionistic self-presentation facets and interpersonal problems prior to the assessed week; and they were assessed on alliance scales and climate factors repeatedly over the course of one week. In addition, patients rated therapists on interpersonal impact messages throughout the week. It was hypothesized that the patients' perfectionistic self-presentation would negatively predict alliance and group climate, generally and on the rate of change over the week. It was also hypothesized that these associations would be influenced by an indirect effect of the patients' interpersonal problems or their ratings of therapists' interpersonal impact messages. Hypotheses were partly supported. Perfectionistic self-presentation facets were negatively associated with the total alliance, including the patient's contribution to the alliance (i.e., patient working capacity and patient commitment); however, perfectionistic self-presentation did not predict other elements of the alliance (i.e., work strategy consensus and group understanding and involvement), change in alliance, or climate factors. Perfectionistic self-presentation was associated with interpersonal problems, though in a different direction than expected on the affiliation dimension. Moreover, these associations also did not result in indirect effects. Expected associations between perfectionistic self-presentation and patients' ratings of therapists' impact messages were also not supported. Overall, this study suggests that patients with elevated levels of interpersonal expressions of perfectionism tended to struggle more with contributing to the alliance process in group therapy and that patients'
interpersonal problems and perceptions of therapists' behaviours did not intervene on the impact of perfectionistic self-presentation on the group process.

On the whole, the present study extends previous research on perfectionism in the therapeutic context. It has been found in the National Institute of Mental Health Treatment of Depression Collaboration Research Project (NIMH-TDCRP) that patients in individual psychotherapy with dysfunctional perfectionistic attitudes experienced poorer treatment outcomes (Blatt et al., 1995), fewer gains at the latter half of treatment and at post-treatment follow-up (Blatt et al., 1998). Perfectionistic attitudes were also found to interact with a poor quality therapy relationship in predicting poor outcome (Blatt et al., 1996), to relate with lower patient contributions to the alliance (Zuroff et al., 2000) and with difficulties in interpersonal relationships (Shahar et al., 2004). Zuroff and colleagues (2016) found that perfectionistic attitudes affected the patients' ability to benefit from their therapist providing empathy, positive regard and genuineness, such that patients high in perfectionistic attitudes benefitted less from treatment despite the therapists' contributions. In another study, Zuroff and colleagues (2017) found that patients with perfectionistic attitudes were driven to therapy by the pressures of internal guilt or external demands (controlled motivation), which then related with poorer outcomes. The current study is generally in agreement with findings from the aforementioned studies, that perfectionistic patients experience a poorer therapeutic process. I found that interpersonal expressions of perfectionism related negatively with alliance scales in a group context. I also found that perfectionistic self-presentation facets related with interpersonal problems though in a different direction than predicted. These interpersonal problems however did not result in an indirect effect on the association among perfectionistic self-presentation and therapeutic process.
Additionally, other studies also examined different components of perfectionism, including perfectionistic self-presentation, over the course of therapy. One, Flynn (2002) found that perfectionistic self-presentation facets were associated with anxiety, cortisol levels and disruptive therapy behaviours throughout the course of group therapy. Two, Hewitt and colleagues (2008) found that facets of perfectionistic self-presentation were associated with patient-rated negative cognitive appraisals and satisfaction, elevated levels of negative affect, and elevated heart rate in a clinical interview. Three, Rice and colleagues (2015) found that maladaptive perfectionism was associated with higher initial levels of symptom distress and interpersonal problems, and with consistently higher symptom distress and no reduction in interpersonal problems over the course of consecutive sessions of individual therapy. Four, van der Kaap-Deeder and colleagues (2016) found that in an eating disorders patient population, the relationship among perfectionism (concern over mistakes and doubts about actions) and body dissatisfaction occurred via perfectionistic patients' lower levels of therapeutic alliance at three months of individual therapy. While the present study considered some different variables in the therapy process than in these aforementioned studies, I also found a negative relationship between perfectionism and the therapy process, through the relational component of perfectionism (i.e., perfectionistic self-presentation) and alliance in group therapy over five consecutive sessions. I also investigated possible mechanisms among these relationships via interpersonal problems and messages. Thus, the current study adds to the body of research knowledge by supporting the negative connection between the perfectionism construct and the group therapy process and by expanding the research on this association. The current study differs by investigating a multifaceted relational component of perfectionism, multiple factors of the therapeutic process, the indirect role of the patients' own interpersonal problems and the
patients' perception of others' interpersonal behaviours, with heterogeneous patient diagnoses, within a group therapy context over the course of consecutive sessions. Overall, the current study serves as a methodological extension of previous research.

Several findings from this study are consistent with the Perfectionism Social Disconnection Model (PSDM; Hewitt et al., 2006; Hewitt et al., 2017; Hewitt et al., 2018). Hewitt et al. (2018) proposed that excessively perfectionistic self-presenting patients experience less social connection to the therapy group. The findings support the idea that perfectionistic self-presenting patients struggle to engage in group therapy, as perfectionistic self-presentation was negatively associated with total alliance and, specifically, the patients' contribution to the alliance. The study investigated a set of possible mechanisms by which excessively perfectionistic self-presenting patients tend to do poorly in therapy (e.g., Flynn, 2002). It was found that perfectionistic self-presenting patients experienced more interpersonal problems, though of a different nature than expected. The PSDM suggested that perfectionistic patients would experience disconnection (here, as poor alliance) through their hostile or off-putting behaviours (Hewitt et al., 2018). In contrast, this mechanism was not supported in the present study as it was found that perfectionistic self-presenting patients experienced interpersonal problems of an overly-friendly-submissive nature. Additionally, in the present study, these interpersonal problems did not impact the patients' engagement in the therapy group. As such, further research is required to clarify and investigate mechanisms involved in these associations. This is important as examining the PSDM in the therapy context provides clinicians with a useful foundation by which to understand perfectionistic patients' behaviours and processes in treatment (Hewitt et al., 2018).
Consequence of Perfectionistic Self-Presentation on the Process of Group Therapy

Overall, elevated perfectionistic self-presentation was found to have a negative effect on the group process, which is in agreement with the PSDM and the psychotherapy literature. Experiencing a poorer group therapeutic process is one form of social disconnection that perfectionistic self-presenting individuals face. Empirical research also suggests many other forms of social disconnection for perfectionistic self-presenting individuals, such as the experience of being bullied in youth (Roxborough et al., 2012), increased validation seeking and rejection sensitivity (Flett et al., 2014), and so on. Given that perfectionistic self-presenting individuals experience social disconnection in their usual lives, it is not surprising that this then transpires in the social context of group therapy. This is a context in which their perfectionistic self-presenting tendencies would interfere with the patient's attempts to relate and interact with several group members, and this is likely to occur through the experience of patients' transference and the therapist's or group's countertransference (Hewitt et al., 2018).

Perfectionistic Self-Presentation and Alliance. Patients with elevated levels of proclaiming and concealing perfectionistic self-presentation experienced significantly lower total alliance, including on the two patient contribution aspects to the alliance. Though aspects of the alliance are related with each other and are not independent of each other, it can be seen that these associations were specific to the patient contribution; no association was found for the other aspects measuring the perceived collaborative and others' contribution to the alliance. In contrast with expectations, this suggests that the patient's perfectionistic self-presenting behaviours did not alienate group members, nor influence his-or-her perception of group members' participation, nor his-or-her appreciation and agreement on the way the group work unfolded. Still, these patients struggled to contribute of themselves in the group. This
distinction may be indicative of the idea that the perfectionistic self-presenting patient's own difficulty to affectively and actively engage in the group was the main source of disconnection within the group. Indeed, the literature has primarily examined and found associations between components of perfectionism and the patient's contribution to the alliance or the patient's characteristics in treatment, as follows.

In the present study, perfectionistic self-presenting group patients experienced less connection at the beginning of the week. As the negative association was found at the beginning of the week, and patients increased on alliance at similar rates over the week, this suggests that perfectionistic self-presenting group patients experienced less connection with, less engagement in the work of, and less bonding and trust in the group generally. This is in accordance with findings from the NIMH-TDCRP in which dysfunctional perfectionistic attitudes was associated with less patient contribution to the alliance in individual therapy across treatment modalities (e.g., Shahar et al., 2003). Indeed, the three perfectionistic self-presentation facets were associated with negative attitudes towards seeking help, including fears and discomfort concerning psychotherapy, and lower confidence in mental health professionals (Hewitt, Kaldas, et al., 2018). As well as, among patients who sought psychological intervention, the facets were associated with less participation and benefit. These associations are suggestive of these individuals' hypervigilant nature. This hypervigilant nature involves the expectation of rejection and will often involve the perfectionistic self-presenting individual being avoidant of and distant in social interactions (Hewitt et al., 2017). Similarly, pre-treatment expectations have been found to be positively associated with alliance during psychotherapy, such that patients' low pre-treatment expectations of treatment alliance and outcome related to patients' low alliance during treatment (Barber, Zilcha-Mano, Gallop, Barrett, McCarthy, & Dinger, 2014). Indeed, in a
clinical interview, perfectionistic self-presenting patients were found to experience higher negative anticipatory and appraisal cognitions and affects, as well as an increased physiological response (i.e., heart rate; Hewitt et al., 2008). This sense of pressure for the appearance of perfection that the patient feels, heightened negative appraisals and affects, and hypervigilance then interferes with his-or-her sense of connectedness with others. In other words, the perfectionistic self-presenting patient is more likely to experience and perceive a lesser quality relationship with the therapist or group. Indeed, Zuroff and colleagues (2016) found that patients' perfectionistic attitudes negatively affected the patients' ability to be receptive to positive conditions (i.e., empathy, positive regard, genuineness; the Rogerian condition) in individual therapy. Additionally, patients with perfectionistic attitudes were found to be driven to treatment due to controlled motivation, derived from perceived pressures from self or others (Zuroff et al., 2017), which likely leads these patients to be less likely to want to engage or contribute in therapy. Perfectionistic self-presenting individuals tend to be highly defended in order to avoid pain, judgment and rejection (Hewitt et al., 2018).

In contrast, the negative perfectionistic-patient commitment association in the present study was not found for nondisclosure of imperfections. This finding was unexpected as, for instance, Flynn (2002) found that perfectionistic nondisclosing patients also experienced heightened anxiety in group therapy. Still, nondisclosure of imperfections was negatively associated with total alliance and patient working capacity. In sum, the findings in the current study suggest that perfectionistic nondisclosing patients may be trusting and affectively committed towards the group though unknowing of how to participate in the group.

Further, while patients’ alliance generally increased over the course of the five consecutive sessions, no individual differences in this increase was found. In other words,
perfectionistic self-presentation facets (or any other variables, e.g., demographic or interpersonal) did not influence patients' level of increase in alliance for the week. It is possible that perfectionistic self-presentation indeed does not influence the rate of increase of the alliance but rather influences patients to experience alliance at a consistently lower level. It is also possible that this finding is due to the limited timeframe of the current study. One week of treatment is very short in the context of treatment that lasts approximately four to seven months; data was collected for each patient in a very small window. Data over a larger timeframe might allow for the examination of individual differences in the change and development of factors over the course of treatment.

Overall, findings suggest that perfectionistic self-presenting patients struggle to engage in the work of self-observation and self-exploration that is the nature of group therapy, and to affectively connect with the therapy group. The literature suggests that the therapeutic relationship is a key component of the corrective mechanism in psychotherapy as perceived by patients during and after treatment (e.g., Constantino et al., 2017). This connectedness to the group is a necessary and fundamental factor in the therapeutic process, acting as a precondition for other elements of therapy to take place (Gaston, 1990). Yalom and Leszcz (2005) discussed that the patients that gain most from therapy groups experience both emotional and cognitive components in the process of therapy; in other words, patients that could engage in the group through their emotional experiences then cognitively reflect on these experiences were most successful in changing and learning through the therapy group. As the interpersonal expression of perfectionism interferes with affective and cognitive engagement, these patients may be less likely to make gains across the process of group therapy. Likewise, though therapy is meant to build an environment of open discovery and acceptance, perfectionistic self-presenting patients
are instead likely to perceive it as one of negative evaluation, enhancing their sense of failure and shame (Hewitt et al., 2018). The connection between patients serves to boast each patient's self-esteem, to challenge one's belief around unworthiness, and to allow for greater interpersonal risks (Yalom & Leszcz, 2005). Patients elevated in interpersonal expressions of perfectionism may be ones in most need of the aforementioned therapeutic benefits, yet they may be unlikely to benefit from any of these elements of the group therapy due to their lack of connectedness.

**Perfectionistic Self-Presentation and Group Climate.** In contrast, it should be noted that no significant associations were found between interpersonal expressions of perfectionism and cohesion, catharsis, or insight. This suggests that patients' perfectionistic self-presentation did not affect the patients' value on their sense of togetherness with the group, of ease releasing emotional material, and of gaining new understandings of themselves. These findings do not support hypotheses and are surprising. It is possible that the social disconnection experienced by perfectionistic self-presenting individuals does not apply to group cohesion, catharsis, or insight. Yet, perfectionistic self-presenting individuals tend to experience less sense of belonging and social connection and tend to have a hypervigilant and inauthentic nature (Hewitt et al., 2017) which was expected to interfere with the vulnerability needed to express one's feelings and gain new self-discoveries (Yalom & Leszcz, 2005). It is also surprising given the aforementioned association in the present study between perfectionistic self-presentation and alliance, as alliance and cohesion are considered to be similar concepts (Yalom & Leszcz, 2005), as are the patient contributions to the alliance and catharsis and insight; and these are indeed significantly correlated in the present study. Alternatively, it is possible that the wording of the measure of group climate may have reduced the impact of perfectionistic self-presentation. Patients rated the level of helpfulness of the group's togetherness, of releasing emotions, and of gaining new
understanding of oneself (Furhiman et al., 1986), rather than rating the level of one's own sense of togetherness with the group, emotional release, or new understanding. In other words, it is possible that perfectionistic self-presentation may impact the patients' experience of cohesion, catharsis, or insight, but it may not impact the patients' valuing of these experiences. For instance, the PSDM discusses that the perfectionism construct is driven by relational needs for connection, belonging, acceptance, though paradoxically creating disconnection from others (Hewitt et al., 2017; Hewitt et al., 2018).

**Indirect Role of Interpersonal Variables**

**Relationship of Perfectionistic Self-Presentation with Interpersonal Variables.**

**Perfectionistic Self-Presentation and Interpersonal Problems.** Patients with elevated levels of proclaiming and concealing perfectionistic self-presentation experienced significant interpersonal problems. Specifically, upon examination of dimensions, they experienced interpersonal problems with higher levels in the range of over-friendliness (high affiliation) and submissiveness (low control). However, the findings regarding the affiliation dimension were in the opposite direction than predicted. That is, this suggests that perfectionistic self-presenting individuals may struggle with enmeshed boundaries between themselves and others and with excessively taking responsibility for others; and with regard to the control dimension, may in some ways behave submissively and compliantly by desperately seeking direction and to be told what to do to gain approval (Alden et al., 1990; Hewitt et al., 2017; Hewitt et al., 2018).

The literature has found that all facets of perfectionistic self-presentation in a university sample were associated with problems of a hostile nature, and either of a dominant or submissive nature depending on gender (Hewitt & Flett, 2018). However, the broader literature examining the association among other components of the perfectionism construct and the interpersonal
circumplex has been mixed. While perfectionism has been in some studies associated with an interpersonal profile of a hostile or dominant nature, in other studies, with other components, or with a different gender, perfectionism has been associated with an interpersonal profile of an over-friendly or submissive nature. For example, in Hill and colleagues (1997), Hewitt and Flett trait perfectionism dimensions among men were associated with hostile-dominance, and among women with friendly-dominance, hostile-dominance, and hostile-submissiveness. Findings were similar in Habke and Flynn (2002), although, Frost perfectionism dimensions were found, for both men and women, to be scattered around the friendly hemisphere of the circumplex. As well, Slaney and colleagues (2006) found that maladaptive perfectionism\(^1\) was associated with two patterns of interpersonal problems including one in the overly-friendly-submissive range. In the examination of university students' autobiographical narratives, Mackinnon, Sherry, and Pratt (2013) found that perfectionism was associated with dominance-related preoccupations. Further, it has been suggested that, in a clinical context, perfectionistic individuals may experience a wide range of interpersonal problems, that is, that perfectionism, including the self-presentation component, has an undifferentiated profile on the circumplex of interpersonal problems (L. E. Ayearst, personal communication, 2011-2012). Generally, also, behaving in a friendly manner is more socially expected and desirable (Tracey, 1994), fitting with the self-presenting individual's need to appear perfect. Thus, although associated in a different direction than expected in the present study, there is some research support for an overly-friendly-submissive pattern of interpersonal problems among perfectionistic individuals.

Overall, in the literature, the overly-friendly or submissive interpersonal patterns appear to be most apparent among perfectionistic women; however, in the current study, both genders (with a nearly equal split between men and women) were assessed together. Due to limited
sample size, I was unable to conduct separate analyses by gender. Still, gender was found to be a significant demographic variable in some of the analyses, particularly in the examination of associations with interpersonal affiliation problems. This suggests that there are some gender differences in these associations.

Further complicating the picture, the present study's sample consisted specifically of clergy men and women experiencing clinical difficulties. The clergy have rated their families of origin as less healthy as compared to families of high school teachers (Rickner & Tan, 1994), which may be related to the association of the sample to total interpersonal problems. Musson (1998) found that the clergy, in general, tended to be more empathic, warm-hearted, social and outgoing, which seems fitting with the importance of their caregiver role interacting with their congregation. They were also found to be more sensitive to criticism and to experience more feelings of inadequacy and inferiority (Knox et al., 2007). Thus, the specific population of this study, that is the clergy with significant clinical pathology, seem to be more likely to experience problematic interactions in an overly-friendly-submissive manner.

Perfectionistic Self-Presentation and Impact Messages. No significant associations were found among perfectionistic self-presentation and patients' ratings of therapists' interpersonal impact messages. This suggests that patients' interpersonal expression of perfectionism did not affect the patients' covert pull from their perception of therapists' interpersonal behaviours. These findings do not support hypotheses and were surprising as it was expected through the PSDM that perfectionistic self-presenting patients would experience the therapists differently, negatively, due to their transference or projected interpersonal distortion onto the therapists (Leary, 1957; Finell, 1986; Yalom & Leszcz, 2005; Hewitt et al.,
2018). Although it may be that the PSDM does not hold in investigating the perception of others' interpersonal behaviours, there may be some alternative possibilities.

First, it is possible that this specific pathway of the PSDM was not relevant for the current sample. As previously discussed, the sample in this study was a particular one, that of the clinical clergy; and they were found to experience problems in a people-pleasing manner. According to complementarity, perceiving therapists as friendly-dominant would reinforce the perfectionistic self-presenting patients' over-friendly-submissive behaviours (Leary, 1957; Carson, 1969; Benjamin, 1974; Kiesler, 1983; Wagner, Kiesler, & Schmidt, 1995). In other words, perfectionistic self-presenting patients' enmeshed boundaries with over compliance problems may equate with these patients viewing therapists more favourably than expected through the PSDM. A favourable perception of the therapists likely matches with other non-perfectionistic patients' experiences of therapists (and possibly with the therapists' overt behaviours), thus possibly resulting in no significant association between perfectionistic self-presentation and the covert pull experienced by patients.

Second, given the interpersonal psychodynamic focus of the group, it is possible that the study involved therapists that were well-attuned to interpersonal interactions including transference and countertransference. That is, while a perfectionistic self-presenting patient may have viewed therapists negatively, the therapists may have appropriately attended to this and intervened, such as, for instance, through the use of the Cyclical Relational Pattern as a therapeutic tool (Strupp & Binder, 1984; Tasca et al., 2005). The Cyclical Relational Pattern is used to help therapists' understand a patient's specific interpersonal behaviours as formulated across several scenarios; and is based on the patient's Acts of Self (behaviours the patient engages in), Expectations of Others (believed reactions of others), Acts of Others (observed
reactions of others), and Acts of Self toward Self (self-treatment and self-beliefs). After all, a primary goal of the group psychodynamic interpersonal approach is to facilitate change in patients' maladaptive interpersonal patterns largely through attention to and use of transference and interactions seen within the group (Tasca et al., 2005; Yalom & Leszcz, 2005; Rutan et al., 2007). Within the safe context of the group (and later outside of group), the patient may then experiment with new and adaptive interpersonal behaviours. Thus, group and therapist interventions may have altered the possible association in the study between perfectionistic self-presentation and patient projected perceptions of therapists' interpersonal behaviours (i.e., rating therapists more accurately and in-line with non-perfectionistic patients).

Third, it is possible as well that patients' covert pull experienced from the therapists were different according to the phase of treatment. That is, perceptions of and responses towards therapists may be more negative during some phases of group treatment (e.g., during the patterns interruption and reorganization phase, in which tensions heighten) than during other phases, and vice versa (e.g., Tasca et al., 2005). While the study controlled for the patients' time in treatment, I could not conduct separate analyses according to phases of treatment. In other words, the possible association between perfectionistic self-presentation and impact messages may not have been found due to methodological difficulties. I could not, as well, methodologically account for group and therapist effects (Baldwin & Imel, 2013) which may have influenced patients' ratings of therapists.

Fourth, nonsignificant results may be as a result of the choice of inventory. Use of the IMI demands that the raters (i.e., patients in this study) focus on and bring into awareness internal emotional responses in interactions with others (Kiesler & Schmidt, 2006). This may have been difficult to do for this patient sample especially with equal proficiency across the
sample. This may have possibly confounded analyses with the IMI. Also, the IMI has not traditionally been used to assess and differentiate between raters, i.e., patients in this study; rather it was constructed to typically assess the ratee, i.e., therapists in this study. An inventory that is specifically designed to assess differences in interpersonal perceptions may have been better suited to the purposes of the current study.

In sum, further research studies with different patient samples, theoretical orientations, clinical settings, and methodological designs, are needed in the examination of the possible association between patients' perfectionistic self-presentation and patients' ratings of therapists' interpersonal behaviours. These will allow research to either add support for or against the association, or to add specificity to the factors determining the relevance of the association.

**Indirect and Intervening Effects.** There were no indirect or intervening effects found for interpersonal variables (patients' interpersonal problems or patients' ratings of therapists' impact messages) on the relationship among perfectionistic self-presentation and alliance. Upon inspection, it can be seen that while perfectionistic self-presentation facets were associated with interpersonal problems but not ratings of impact messages, interpersonal problems were not associated with process factors. This suggests that interpersonal variables do interplay with perfectionistic self-presentation; yet with the particular interpersonal variables and specific sample investigated in the present study, an expected association did not occur in the indirect pathway among perfectionistic self-presentation facets, interpersonal variables, and process factors. This absence of an association between interpersonal variables and process factors in the present study is indeed surprising and not well understood (as will be discussed in the following section). It is possible that another mechanism, perhaps of an interpersonal nature, through
variables not measured in the current study intervened on the association between perfectionistic self-presentation and alliance.

The literature is rich in examples of interpersonal distress contributing to the dysfunction that perfectionistic individuals experience. For instance, perfectionistic self-presenting youth experienced more social hopelessness and bullying, which were then associated with suicidal risk (Roxborough et al., 2012). Perfectionism in either partner was found to be associated with depressive symptoms through daily conflicts in romantic relationships (Mackinnon et al., 2012). In a clinical sample, Dunkley and colleagues (2006) found that a three year longitudinal association between perfectionistic attitudes and depressive symptoms was explained through negative social interactions and perceived lower social support. In the clinical research from the NIMH-TDCRP, patients with perfectionistic attitudes were found to have difficulties developing relationships and this restricted individual therapy (Shahar et al., 2004). In a group therapy study, reductions in perfectionistic self-presentation levels over the course of treatment impacted decreases in levels of interpersonal anxiety and problems, as well as in levels of depression and anxiety (Hewitt et al., 2015). The current study found the association between perfectionistic self-presentation and social disconnection (as poorer group alliance); however, the indirect mechanism via interpersonal vulnerabilities was not found. It may be that another conditional or moderating variable, not investigated in the current study, hid the expected pathway within the context of this specific study and sample. In other words, there may be another variable(s) that determines the condition(s) under which the indirect perfectionism-interpersonal-disconnection pathway does or does not occur (e.g., Sherry, Mackinnon, & Gautreau, 2016). This may be possible particularly given that elements of the pathway were found but that the pathway as a whole did not hold. For instance, I consider that vocation may be one such conditional variable,
which in the current sample is homogeneous (i.e., clergy). As clergy, presenting as perfect may involve more frequent interactions with the congregation and community; however these relationships may be of lesser quality. These individuals may be overly welcoming and have frequent interpersonal encounters; however, they may also not show vulnerability and reciprocity and may hide unmet needs and desires (Hewitt et al., 2017). This is likely seen as appropriate for the role of the clergy. By extension, perfectionistic clergy patients are likely unfamiliar and uncomfortable with the task of authentic vulnerability and the help-seeking role involved in the context of group therapy. Altogether, the clergy vocation may be one condition which determined that the association between interpersonal problems and quality of relationships did not occur in the present study (though the association between perfectionistic self-presentation and quality of relationships still did occur).

Moreover, recent writings on the PSDM extend the framework to the therapeutic context, emphasizing the hindering role of perfectionism and the interference of interpersonal difficulties on the perfectionistic patient's therapy (Hewitt et al., 2018). This interference is suggested to occur through interpersonal sensitivity and transference, and off-putting interpersonal behaviours and countertransference, creating a therapeutic disconnection (Hewitt et al., 2018). While some elements of the pathway were found, unfortunately, as a whole, this pathway could not be demonstrated in the current study. Namely, the intervening or interference portion of the pathway was not supported.

**Relationship of Interpersonal Variables and Process Factors in Group Therapy.**

**Interpersonal Problems.** Although perfectionistic self-presentation facets were associated with interpersonal problems, interpersonal problems were not found to have an association with process factors. This suggests that patients' interpersonal distress, friendly and
hostile patterns of behaviours, or dominant and submissive patterns of behaviours, did not influence the patients' own process in group. These results are surprising in the context of the literature. Several studies have found that interpersonal problems, particularly of a hostile nature, have had a negative impact on the alliance across therapeutic orientations as assessed at various times in individual therapy (e.g., Muran et al., 1994; Paivio & Bahr, 1998; Puschner et al., 2005; Johansson & Eklund, 2006; Hersoug et al., 2009). It was also found that dominant patients had lower alliance levels (e.g., Puschner et al., 2005; Renner et al., 2012), in group therapy (Lorentzen et al., 2004). Examining the relationship in the opposite direction, Joyce, Ogrodniczuk, and Kealy (2017) found that group processes (engagement, cohesion, alliance) during treatment related to reductions in total interpersonal problems from pre-to-post treatment. The present study's findings of no significant associations among interpersonal problems and alliance are not in line with this literature. Accordingly, the absence of significant associations in the current study among total interpersonal problems, interpersonal affiliation and control problems and any process factors is not clearly understood. It may be that these associations do not hold within the specific context of the present study as I discuss below.

Taken together, the extensive empirical research on the associations among interpersonal problems and alliance, and among related variables, as reviewed above, supports the PSDM. Although the current study did not find an association between interpersonal problems and alliance, within the context of this large literature, it can be suggested rather that the sample or methodology of the current study was a particular one. I have previously discussed that the study examined a clergy patient sample and that perfectionistic self-presenting patients among these experienced interpersonal problems in a different range than expected. Instead of experiencing problems in hostility, the type of interpersonal problems that has most consistently
been associated in the literature with difficulties in the alliance, perfectionistic self-presenting clergy patients in the current study experienced problems in the overly-friendly range. As reviewed previously, perfectionistic self-presenting patients still experienced poorer alliance, and this holds true even though they experienced overly-friendly interpersonal problems. Altogether, this may suggest that not only do patients with hostility problems experience poorer alliance (as supported by the literature, see above) but that, in the current study, patients with overly-friendly problems also experienced poorer alliance (as suggested by the associations in the study among perfectionistic self-presentation and alliance, and among perfectionistic self-presentation and interpersonal problems). By extension, this may also be the case among the control dimension of interpersonal problems (e.g., that both patients with dominant and submissive problems experienced poorer alliance). In other words, it is possible that the associations among interpersonal problems and alliance became concealed and could not be appropriately detected within the study.

Additionally, it is possible that the group and therapists had actively and effectively intervened on patients' interpersonal patterns (as previously discussed; e.g., Tasca et al., 2005). This could be such that patients, who prior to treatment reported certain interpersonal problems, were no longer negatively impacted in their engagement with the group. In this case, the expected negative association among patients' interpersonal problems (assessed prior to treatment) and patients' alliance levels (assessed during treatment) may no longer be present.

**Impact Messages.** Even though there were positive correlations among patients' ratings of therapists' affiliation messages and alliance scales, impact messages could not be included in the indirect analyses. This is because there was no association among perfectionistic self-presentation facets and dimensions of patients' ratings of therapists' impact messages (previously
reviewed), a condition in the study to further analyses with impact messages. The absence of support for the association among perceptions of interpersonal messages and process factors in the course of therapy is not in line with the literature. For instance, Auerbach and colleagues (2008) found that the more the patient (or therapist) rated the therapist's (or the patient's) impact message as positively affiliative (i.e., friendly), the more the patient (or therapist) rated the alliance positively, and vice versa. In addition, Quilty and colleagues (2013) found that patients' affiliative messages (as rated by therapists) were associated with improvements in depression symptoms. In another study, therapist case notes were linguistically examined and it was found that notes containing words denoting hostile negative affect were associated with lower treatment effectiveness (Bucci, Maskit, & Hoffman, 2012). Zuroff and colleagues (2017) found that patients' perceptions of therapists' friendly messages were associated with a freely-undertaken and meaningful drive for treatment (autonomous motivation), which in turn related with better outcomes. As well, Quilty and colleagues (2013) found that patients' control messages on therapists (i.e., patients exerting a more dominant covert pull on therapists) later in treatment were positively associated with improvements in depression symptoms. Really, through the therapist's facilitation, a corrective mechanism in therapy often involves the patient gaining his- or-her own agency to create his- or-her own opportunities for change and accordingly viewing him- or-herself as more empowered (e.g., Ribeiro et al., 2014; Constantino et al., 2017; Angus & Constantino, 2017). Overall, the literature suggests that covert interpersonal pulls by one impact on another in a treatment context, and influence therapeutic processes and outcomes; however, I could not add to this literature.
Implications

While perfectionistic self-presentation is a component of the CMPB, it also fits into a broader literature on impression management, self-deception, or general self-presentation. Individuals generally desire to present themselves favourably to please others and to build one’s self-image (Baumeister, 1982). Paulhus and Reid (1991), for instance, also distinguished between describing the self by claiming positive attributes (enhancement or proclaiming) and by denying negative attributes (denial or concealment). These presentational tactics, especially enhancement, have consistently been associated with adjustment (e.g., higher self-esteem, lower distress and social anxiety, Paulhus & Reid, 1991). This extends as well to the therapeutic context. Fruhauf, Figlioli, Bock, and Caspar (2015) found that self-presentation tactics related with early therapeutic alliance, and this association was particularly positive for self-promotional tactics. Kelly (2000) discussed that some level of patient self-presentation in the therapeutic context can be beneficial by allowing the patient to come to see him-or-herself according to this more desirable self-presentation, whether through proclaiming or concealment. This also includes the patient expecting and perceiving desirable feedback from the therapist (or group), and internalizing this feedback. That is, the patient must perceive that his or her presentation will be perceived favourably; and even if the therapist encourages an environment of acceptance, patients are likely to perceive that certain information are too detestable to reveal without receiving negative judgment. Yet, the findings of the current study, that is that perfectionistic self-presentation was negatively associated with the therapeutic process, appear to contradict this literature. However, authors have described conditions in which self-presentation can positively influence the self-concept. Self-presentations must seem reasonable and believable to the patient and the therapist (Kelly, 2000). Presenting the self in a way that the patient does not believe is
likely to heighten the patient's sense of inauthenticity and reduce the likelihood that he or she would internalize feedback (Hill, Gelso, Mohr, 2000). If the self-presentation is not believable to the therapist or seen as an overused tactic, the therapist is likely to view it as maladaptive and to work at modifying it (Friedlander & Schwartz, 1985). Taken another way, when the self-presentation is not believable to the patient, the patient may be hypersensitive to others and this may activate the patient's transference; and when the self-presentation is not believable to the therapist, the patient's behaviour may be experienced as off-putting and may elicit the therapist's countertransference, as in the PSDM (Hewitt et al., 2018). Additionally, being in a help-seeking position, even though using self-presentational tactics, patients must be able to point to some area of difficulty to work on (Arkin & Herman, 2000). However, perfectionistic behaviours do not meet the aforementioned conditions; perfectionistic presentations may not be believable to either the patient or the therapist (or group), and may thwart the open disclosure of difficulties. In other words, when these conditions are not met (when transference and countertransference are not addressed, and when no area of vulnerability is revealed), withdrawal and disconnection between patient and therapist (or group) are likely to occur leading to poorer therapeutic processes and outcomes (Hewitt et al., 2018). Actually, it has been found that trait perfectionism in combination with self-concealment (resembling the perfectionistic self-presentation component) was associated with psychological distress (Kawamura & Frost, 2004) and negative attitudes toward seeking psychological help (Abdollahi et al., 2017). Thus, perfectionistic self-presentation acts in a different direction, negatively, in the therapeutic context, as suggested by the current study and the PSDM, as compared to general self-presentation.

Further, as stated by Yalom and Leszcz (2005), the "challenge in group therapy is helping the poor get richer as well (p. 69)." That is, patients with good social skills do well
outside and inside of the therapy group, while those with poor social skills not only struggle in relationships outside of the group, but also experience difficulties within the group and may as a result benefit least from the group. The current study suggests that perfectionistic self-presenting patients are among those who connect poorly in the group therapy process. As clinicians, in facilitating therapy groups, we may need to be more alert to perfectionistic self-presenting patients, such that they are not left out of and are encouraged in the process of the group. The clinician may need to attend to perfectionistic self-presentation to better adapt interventions to patients forming the therapy group and address particular patients (i.e., promoting and concealing perfectionistic self-presenting patients) that may be struggling more with the therapy process. Indeed, a skilled therapist works to be aware moment-to-moment of the patient’s internal experiences to intervene appropriately within the patient's therapeutic zone of proximal development, that is moving between safety and tolerable risk for the patient (e.g., Ribeiro et al., 2014). Perfectionistic self-presenting patients already struggle in making the decision to seek help (Hewitt, Kaldas, et al., 2018), and have a more negative experience affectively, cognitively, and physiologically during an initial clinical interview (Hewitt et al., 2008). When they do take this difficult step to participate in a therapy group, it is important that we know how to best assist them in gaining most benefit from it.

Owen and Hilsenroth (2011) found that interventions involving exploration of the patient's relational-affective patterns, in conjunction with the therapeutic alliance, related with better treatment outcome. As facilitators we ought to attend to perfectionistic self-presenting patients' problematic interpersonal behaviours and transference responses. Facilitators will also need to attend to their countertransference in response to patients, to assure that they are providing interpersonal messages that are warm, welcoming, and compassionate, and that
encourage the patients' progress and therapeutic process (Hewitt et al., 2018). For instance, Anderson, Crowley, Himawan, Holmberg, and Uhlin (2016) found that patients seen by therapists with higher interpersonal skills experienced better therapeutic alliance and outcome. The current study suggests, and in partial accordance with the PSDM, that there are some associations among patients' interpersonal expressions of perfectionism, patients' interpersonal problems, therapists' interpersonal messages, and alliance. By attending to these characteristics, reductions in perfectionistic self-presentation levels and in interpersonal problems may be effectuated through therapy. This was found to be the case, for instance, in a psychodynamic interpersonal group psychotherapy for perfectionism (Hewitt et al., 2015).

**Limitations and Future Directions**

While the current study yielded interesting findings, several limitations should also be noted. First, I look at the timeframe of the study. I collected data over a one week period, or five sessions, for each patient in an intensive residential treatment. Due to this limited timeframe, I was unable to investigate individual differences and predictors in the change process over time. Data collected over a longer time period, continually monitoring the therapy process might allow for further investigations and add to our body of knowledge. It will be important to see how pathways translate over a longer time period. It should be noted additionally that multiple repeated measurements may help us to better estimate the nature of change relationships; I was limited in doing so with the climate factors as two data-points were not sufficient.

Second, while I found that over time the levels of the therapeutic process factors took a curvilinear shape, that is with a slight downward curve at the end, we must be cautious in understanding this. We must remember that I examined data for one week for each patient and
each patient provided data at different weeks or stages of treatment. In other words, these trajectories are not from one patient and should not be applied to one patient. The trajectories found in this study were compiled across several patients across different stages of treatment. It should be noted as well that patients that provided data at late weeks of treatment were in treatment longer than the average patient attending the Southdown Institute. This may be suggestive that these particular patients were more pathological in presentation or more treatment resistant, and this may be related to the downward curve of the aforementioned trajectories.

Third, the sample size was small, and thus the statistical power was also limited to detecting large effects. This is especially true given the complexity of analyses and that I conducted a number of analyses which does not safeguard against finding associations by statistical chance. I could not correct for chance findings due to the already limited power and sample size. Further research will be necessary to investigate and add support to the associations found in the present study. Future studies should strive to collect a sufficiently large sample size to allow for stronger power and statistical correction for the number of analyses conducted.

Fourth, gender was at times found to be a significant demographic variable in the study's models. In this study, I controlled for gender due to the small sample size, instead of conducting separate analyses for women and for men which would have required a larger sample. It will be important to understand how the associations found in this study apply to each gender.

Fifth, the current study's patient population was a particular one, that of the clergy in residential treatment. Findings within this population may or may not generalize to other clinical populations or settings. It will be important to extend the research to various populations and settings, as well as across various therapeutic orientations and formats.
Sixth, in the data screening stage of the study, I found potential quadratic associations among variables of interest. While it was not feasible to examine these quadratic associations within the purposes of the present study, it will be important for future studies to be aware of the possibility of curvilinear associations and to investigate these as appropriate. For instance, one study by Molnar, Flett, Sadava, and Colautti (2012) examined and found a quadratic relationship between perfectionism and health functioning among women with fibromyalgia. Examination of curvilinear relationships is a recent development in the area of perfectionism.

Seventh, the current study focuses on patient characteristics. While this provides important information, we must not forget that therapy is an interpersonal context with more than one person contributing to the process. In the context of group therapy, there may also be overall group effects. What's more, therapist effects contribute to therapy and these will be important to examine as well (Baldwin & Imel, 2013), such as in the recent work by Zuroff and colleagues (2016 & 2017). For instance, we can consider that a therapist's perfectionism may also negatively influence psychotherapy. Similarly, we may consider the match between particular patients and particular therapists based on each' characteristics.

Summary

Forms of interpersonal expression of perfectionism, that is perfectionistic self-presentation, are important patient characteristics to consider in treatment. The present study demonstrated that these negatively impact on the alliance process in group therapy, a form of social disconnection, in support of the Perfectionism Social Disconnection Model (Hewitt et al., 2006; Hewitt et al., 2017; Hewitt et al., 2018). There were also associations among perfectionistic self-presentation and problematic interpersonal tendencies; however these did not demonstrate an intervening pathway due to the absence of associations to connect different parts
of the pathway. Clinicians working with proclaiming and concealing perfectionistic self-presenting patients should be attentive to these associations to better address them in therapy and assist these patients in better connecting in and benefitting from group therapy.
Figures and Tables

Figure 1. Illustration of the Perfectionism Social Disconnection Model (PSDM), from Hewitt et al. (2017).
Figure 2. Illustration of a portion of the Perfectionism Social Disconnection Model (PSDM) as applied to the clinical context, from Hewitt et al. (2018).
Figure 3. Kiesler's (1983) conceptualization of the interpersonal circumplex. Presented here is a circumplex system divided into 16 segments. The smallest circle identifies the interpersonal tone of behaviours as spread around the circumplex; the middle circle represents mild-moderate levels of these interpersonal behaviours; and the largest circle represents the extreme levels.
Figure 4. Nested structure of the study's data within multilevel modeling.
Figure 5. Scatterplots of the relationship between patients' group treatment session at the study's intercept (i.e., SessionC) and each dependent variable at the patient's intercept (i.e., first session of the assessed week) with illustrated curves. Dependent variables are: Total Alliance (A), Patient Working Capacity (B), Patient Commitment (C), Work Strategy Consensus (D), Group Understanding and Involvement (E), Cohesion (F), Catharsis (G), and Insight (H).
Figure 6. Illustration of the general modeling approach. SessionC + SessionC^2 provide the between-person curve, and its derivative (i.e., the tangent) at a given session provides the intercept and rate of change (slope) over the week as estimated across patients. To that, the mean one-week within-person slope (SessionWP) is then added. Further, the effects of independent variables (e.g., demographic characteristics, perfectionistic self-presentation facets, interpersonal variables) are also added, that is, their intercept effects and their effects on the one-week slope (i.e., interactions between SessionWP and independent variables). By accounting for these effects, an individual patient's intercept and slope for his-or-her respective assessed week in treatment can be estimated.
| Table 1: Means, standard deviations, and bivariate correlations. |
|------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
|                  | M (SD)  | 1.     | 2.     | 3.     | 4.     | 5.     | 6.     | 7.     | 8.     | 9.     |
| 1. age           | 53.52 (9.49) | - .30* |        |        |        |        |        |        |        |        |
| 2. gender        | 1.48 (0.50)  |        |        |        |        |        |        |        |        |        |
| 3. self-promote  | 40.45 (11.98) | - .11  | - .10  |        |        |        |        |        |        |        |
| 4. nondisplay    | 43.96 (11.61) | - .20  | - .02  | .82*** |        |        |        |        |        |        |
| 5. nondisclose   | 23.62 (7.77)  | - .06  | - .12  | .64*** | .64*** |        |        |        |        |        |
| 6. total alliance | 4.57 (0.85)  | -.08   | 0.23   | -.34** |        |        |        |        |        |        |
| 7. patient working capacity | 4.60 (1.20)  | -.04   | 0.07   | -.24  | -.16  | -.51*** | .61*** |        |        |        |
| 8. patient commitment | 5.64 (0.93)  | -.06   | -.01   | -.13  | -.00  | -.18  | .51*** | .30*   |        |        |
| 9. work strategy consensus | 3.91 (1.27)  | -.06   | .30*   | -.04  | -.11  | -.17  | .82*** | .23    | .14    |        |
| 10. group understanding | 4.12 (1.35)  | -.09   | .24*   | -.02  | -.03  | -.12  | .84*** | .22    | .20    | .81*** |
| 11. cohesion     | 3.96 (0.67)   | -.07   | .08    | -.08  | .06   | .04   | .48*** | .26*   | .41*** | .32**  |
| 12. catharsis    | 3.84 (0.61)   | -.09   | .04    | -.17  | -.09  | -.11  | .50*** | .37**  | .28*   | .39*** |
| 13. insight      | 3.64 (0.66)   | -.06   | .10    | -.16  | -.18  | -.12  | .37**  | .10    | .23    | .40*** |
| 14. total interpersonal problems | 63.79 (9.52) | -.06   | -.17   | .31** | .41*** | .29*   | -.08  | .01    | -.05  | -.09  | -.10  |
| 15. affiliation problems | 11.57 (16.78) | -.12   | .28*   | .24*  | .24*  | .31** | -.06  | -.07   | .04   | .01   | -.10  |
| 16. control problems | -24.74 (25.24) | -.03   | .08    | -.28* | -.41*** | -.44*** | .09   | .17    | -.15  | .12   | .06   |
| 17. affiliation messages | 2.76 (1.21) | .06    | -.12   | -.04  | -.00  | -.10  | .29*  | .30*   | .24*   | .16   | .14   |
| 18. control messages | -0.15 (0.75) | -.15   | .24    | -.04  | -.18  | -.21  | .17   | .05    | -.11  | .29*  | .19   |

|                  | -.50*** | .63***  |        |        |        |        |        |
| 11. cohesion     |        |        |        |        |        |        |        |
| 12. catharsis    |        |        |        |        |        |        |        |
| 13. insight      |        |        |        |        |        |        |        |
| 14. total interpersonal problems |        |        |        |        |        |        |        |
| 15. affiliation problems |        |        |        |        |        |        |        |
| 16. control problems |        |        |        |        |        |        |        |
| 17. affiliation messages |        |        |        |        |        |        |        |
| 18. control messages |        |        |        |        |        |        |        |

* patients' scores on Monday (intercept; first session of the assessed week)  
** patients' average scores across Monday and Friday.  
\( n = 69 \). self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections, group understanding = group understanding and involvement, affiliation problems = interpersonal affiliation problems, control problems = interpersonal control problems, affiliation messages = impact affiliation messages (patient ratings of therapists), control messages = impact control messages (patient ratings of therapists).  
* \( p < .05 \). ** \( p < .01 \). *** \( p < .001 \).
Table 2
Perfectionistic self-presentation facets predicting patients' levels on Total Alliance over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((b_{00}))</td>
<td>4.63 (0.12)***</td>
<td>4.63 (0.12)***</td>
<td>4.63 (0.12)***</td>
</tr>
<tr>
<td>SessionC ((b_{1}))</td>
<td>0.0052 (0.0023)*</td>
<td>0.0051 (0.0023)*</td>
<td>0.0046 (0.0023)</td>
</tr>
<tr>
<td>SessionC^2 ((b_{2}))</td>
<td>-0.000070 (0.000049)</td>
<td>-0.000070 (0.000049)</td>
<td>-0.000067 (0.000049)</td>
</tr>
<tr>
<td>ageC ((b_{01}))</td>
<td>-0.011 (0.0093)</td>
<td>-0.012 (0.0094)</td>
<td>-0.0090 (0.0093)</td>
</tr>
<tr>
<td>genderC ((b_{02}))</td>
<td>-0.010 (0.18)</td>
<td>0.018 (0.18)</td>
<td>-0.010 (0.18)</td>
</tr>
<tr>
<td>self-promoteC ((b_{03}))</td>
<td>-0.019 (0.0072)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondisplayC ((b_{03}))</td>
<td></td>
<td>-0.020 (0.0075)**</td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ((b_{03}))</td>
<td></td>
<td></td>
<td>-0.026 (0.011)*</td>
</tr>
<tr>
<td>SessionWP ((b_{30}))</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((\mu_{0i}))</td>
<td>0.51</td>
<td>0.51</td>
<td>0.52</td>
</tr>
<tr>
<td>SessionWP (slope) ((\mu_{3i}))</td>
<td>0.056</td>
<td>0.056</td>
<td>0.055</td>
</tr>
<tr>
<td>Residual</td>
<td>0.75</td>
<td>0.75</td>
<td>0.75</td>
</tr>
</tbody>
</table>

*Note.* Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

\* \(p < .05\), \** \(p < .01\), \*** \(p < .001\).
Table 3

Perfectionistic self-presentation facets predicting patients’ levels on Patient Working Capacity over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ( (b_{00}) )</td>
<td>4.57 (0.16)**</td>
<td>4.57 (0.16)**</td>
<td>4.56 (0.15)**</td>
</tr>
<tr>
<td>SessionC ( (b_1) )</td>
<td>0.0056 (0.0030)</td>
<td>0.0056 (0.0030)</td>
<td>0.0054 (0.0028)</td>
</tr>
<tr>
<td>SessionC² ( (b_2) )</td>
<td>-0.000086 (0.000064)</td>
<td>-0.000083 (0.000063)</td>
<td>-0.000078 (0.000061)</td>
</tr>
<tr>
<td>ageC ( (b_{01}) )</td>
<td>-0.013 (0.012)</td>
<td>-0.015 (0.012)</td>
<td>-0.013 (0.012)</td>
</tr>
<tr>
<td>genderC ( (b_{02}) )</td>
<td>-0.064 (0.24)</td>
<td>-0.036 (0.24)</td>
<td>-0.095 (0.23)</td>
</tr>
<tr>
<td>self-promoteC ( (b_{03}) )</td>
<td>-0.021 (0.0095)*</td>
<td>-0.024 (0.0097)*</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ( (b_{03}) )</td>
<td></td>
<td>-0.051 (0.014)**</td>
<td></td>
</tr>
<tr>
<td>SessionWP ( (b_{30}) )</td>
<td>0.16 (0.045)**</td>
<td>0.16 (0.0045)**</td>
<td>0.16 (0.045)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ( (\mu_{0i}) )</td>
<td>0.73</td>
<td>0.73</td>
<td>0.61</td>
</tr>
<tr>
<td>SessionWP (slope) ( (\mu_{3i}) )</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>Residual</td>
<td>1.03</td>
<td>1.03</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* \( p < .05 \). ** \( p < .01 \). *** \( p < .001 \).
Table 4
Perfectionistic self-presentation facets predicting patients' levels on Patient Commitment over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>5.78 (0.13)**</td>
<td>5.78 (0.13)**</td>
<td>5.79 (0.13)**</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0055 (0.0025)*</td>
<td>0.0054 (0.0026)*</td>
<td>0.0050 (0.0026)</td>
</tr>
<tr>
<td>SessionC$^2$ ($b_2$)</td>
<td>-0.000085 (0.000053)</td>
<td>-0.000087 (0.000054)</td>
<td>-0.000088 (0.000055)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.022 (0.010)*</td>
<td>-0.023 (0.010)*</td>
<td>-0.019 (0.011)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.39 (0.20)</td>
<td>-0.35 (0.20)</td>
<td>-0.37 (0.21)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.022 (0.0079)**</td>
<td>-0.020 (0.0083)*</td>
<td>-0.022 (0.012)</td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td>0.070 (0.030)*</td>
<td>0.070 (0.030)*</td>
<td>0.070 (0.030)*</td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>0.62</td>
<td>0.63</td>
<td>0.63</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{3i}$)</td>
<td>0.076</td>
<td>0.075</td>
<td>0.074</td>
</tr>
<tr>
<td>Residual</td>
<td>0.72</td>
<td>0.72</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.
self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 5
Perfectionistic self-presentation facets predicting patients' levels on Work Strategy Consensus over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((b_{00}))</td>
<td><strong>4.00 (0.17)</strong>***</td>
<td><strong>4.00 (0.17)</strong>***</td>
<td><strong>4.00 (0.17)</strong>***</td>
</tr>
<tr>
<td>SessionC ((b_1))</td>
<td>0.0052 (0.0031)</td>
<td>0.0052 (0.0031)</td>
<td>0.0047 (0.0031)</td>
</tr>
<tr>
<td>SessionC² ((b_2))</td>
<td>-0.000080 (0.000066)</td>
<td>-0.000079 (0.000066)</td>
<td>-0.000077 (0.000067)</td>
</tr>
<tr>
<td>ageC ((b_{01}))</td>
<td>0.0012 (0.013)</td>
<td>-0.00057 (0.013)</td>
<td>0.0026 (0.013)</td>
</tr>
<tr>
<td>genderC ((b_{02}))</td>
<td>0.28 (0.25)</td>
<td>0.30 (0.25)</td>
<td>0.27 (0.25)</td>
</tr>
<tr>
<td>self-promoteC ((b_{03}))</td>
<td>-0.016 (0.0098)</td>
<td>-0.017 (0.010)</td>
<td>-0.023 (0.015)</td>
</tr>
<tr>
<td>nondisplayC ((b_{03}))</td>
<td>0.17 (0.044)*****</td>
<td>0.17 (0.044)*****</td>
<td>0.17 (0.044)*****</td>
</tr>
<tr>
<td>SessionWP ((b_{30}))</td>
<td>0.17 (0.044)*****</td>
<td>0.17 (0.044)*****</td>
<td>0.17 (0.044)*****</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ((\mu_0))</td>
<td>0.72</td>
<td>0.70</td>
<td>0.74</td>
</tr>
<tr>
<td>SessionWP (slope) ((\mu_3i))</td>
<td>0.083</td>
<td>0.084</td>
<td>0.084</td>
</tr>
<tr>
<td>Residual</td>
<td>1.09</td>
<td>1.09</td>
<td>1.09</td>
</tr>
</tbody>
</table>

*Note.* Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* *p < .05. ** *p < .01. *** *p < .001.
Table 6
Perfectionistic self-presentation facets predicting patients’ levels on Group Understanding and Involvement over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td><strong>4.19 (0.18)</strong>***</td>
<td><strong>4.19 (0.18)</strong>***</td>
<td><strong>4.19 (0.18)</strong>***</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0036 (0.0033)</td>
<td>0.0036 (0.0033)</td>
<td>0.0031 (0.0033)</td>
</tr>
<tr>
<td>SessionC$^2$ ($b_2$)</td>
<td>-0.000032 (0.000070)</td>
<td>-0.000031 (0.000070)</td>
<td>-0.000034 (0.000072)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.0035 (0.013)</td>
<td>-0.0049 (0.014)</td>
<td>-0.0011 (0.014)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>0.17 (0.26)</td>
<td>0.19 (0.26)</td>
<td>0.18 (0.27)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.015 (0.010)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td>-0.017 (0.011)</td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ($b_{03}$)</td>
<td></td>
<td></td>
<td>-0.012 (0.016)</td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td><strong>0.12 (0.045)</strong>**</td>
<td><strong>0.12 (0.045)</strong>**</td>
<td><strong>0.12 (0.045)</strong>**</td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>0.86</td>
<td>0.87</td>
<td>0.89</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{3i}$)</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
<td>Residual</td>
<td>1.01</td>
<td>1.01</td>
<td>1.01</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>4.02 (0.11)***</td>
<td>4.02 (0.011)***</td>
<td>4.03 (0.011)***</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0031 (0.0023)</td>
<td>0.0028 (0.0023)</td>
<td>0.0028 (0.0023)</td>
</tr>
<tr>
<td>SessionC$^2$ ($b_2$)</td>
<td>-0.000051 (0.000048)</td>
<td>-0.000055 (0.000048)</td>
<td>-0.000056 (0.000048)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.0055 (0.0091)</td>
<td>-0.0037 (0.0093)</td>
<td>-0.0040 (0.0091)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>0.099 (0.18)</td>
<td>0.12 (0.18)</td>
<td>0.12 (0.18)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.0060 (0.0071)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td>0.0021 (0.0074)</td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ($b_{03}$)</td>
<td></td>
<td></td>
<td>0.0038 (0.010)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_0$)</td>
<td>0.57</td>
<td>0.57</td>
<td>0.57</td>
</tr>
<tr>
<td>Residual</td>
<td>0.50</td>
<td>0.50</td>
<td>0.50</td>
</tr>
</tbody>
</table>

*Note. Estimates are unstandardized regression coefficients. self-promote = perfectionistic self-presentation, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections. * $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 8
Perfectionistic self-presentation facets predicting patients' levels on Catharsis.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ( (b_{00}) )</td>
<td>\textbf{3.91 (0.093)}***</td>
<td>\textbf{3.92 (0.094)}***</td>
<td>\textbf{3.91 (0.095)}***</td>
</tr>
<tr>
<td>SessionC ( (b_1) )</td>
<td>\textbf{0.0043 (0.0019)}*</td>
<td>\textbf{0.0041 (0.0020)*}</td>
<td>0.0040 (0.0020)</td>
</tr>
<tr>
<td>SessionC^2 ( (b_2) )</td>
<td>-0.000053 (0.000041)</td>
<td>-0.000055 (0.000041)</td>
<td>-0.000054 (0.000042)</td>
</tr>
<tr>
<td>ageC ( (b_{01}) )</td>
<td>-0.0085 (0.0078)</td>
<td>-0.0083 (0.0080)</td>
<td>-0.0071 (0.0079)</td>
</tr>
<tr>
<td>genderC ( (b_{02}) )</td>
<td>0.066 (0.15)</td>
<td>0.087 (0.15)</td>
<td>0.075 (0.16)</td>
</tr>
<tr>
<td>self-promoteC ( (b_{03}) )</td>
<td>-0.011 (0.0060)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondisplayC ( (b_{03}) )</td>
<td></td>
<td>-0.0072 (0.0063)</td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ( (b_{03}) )</td>
<td></td>
<td></td>
<td>-0.0091 (0.0095)</td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ( (\mu_{0i}) )</td>
<td>0.35</td>
<td>0.37</td>
<td>0.37</td>
</tr>
<tr>
<td>Residual</td>
<td>0.64</td>
<td>0.64</td>
<td>0.63</td>
</tr>
</tbody>
</table>

*Note.* Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

\* \( p < .05 \). \** \( p < .01 \). \*** \( p < .001 \).
Table 9
Perfectionistic self-presentation facets predicting patients’ levels on Insight.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ( (b_{00}) )</td>
<td>3.79 (0.10)****</td>
<td>3.79 (0.099)****</td>
<td>3.80 (0.10)****</td>
</tr>
<tr>
<td>SessionC ( (b_1) )</td>
<td>0.0063 (0.0021)**</td>
<td>0.0064 (0.0021)**</td>
<td>0.0060 (0.0021)**</td>
</tr>
<tr>
<td>SessionC^2 ( (b_2) )</td>
<td>-0.00010 (0.000044)*</td>
<td>-0.00010 (0.000043)*</td>
<td>-0.00011 (0.000045)*</td>
</tr>
<tr>
<td>ageC ( (b_{01}) )</td>
<td>-0.0051 (0.0083)</td>
<td>-0.0065 (0.0083)</td>
<td>-0.0039 (0.0084)</td>
</tr>
<tr>
<td>genderC ( (b_{02}) )</td>
<td>0.15 (0.16)</td>
<td>0.16 (0.16)</td>
<td>0.016 (0.17)</td>
</tr>
<tr>
<td>self-promoteC ( (b_{03}) )</td>
<td>-0.0098 (0.0065)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondisplayC ( (b_{03}) )</td>
<td></td>
<td>-0.012 (0.0066)</td>
<td>-0.0083 (0.010)</td>
</tr>
<tr>
<td>Random effects</td>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ( (\mu_{0i}) )</td>
<td>0.40</td>
<td>0.39</td>
<td>0.41</td>
</tr>
<tr>
<td>Residual</td>
<td>0.65</td>
<td>0.65</td>
<td>0.65</td>
</tr>
</tbody>
</table>

*Note.* Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

\* p < .05. \** p < .01. \*** p < .001.
## Table 10

Perfectionistic self-presentation facets predicting patients' levels on Total Interpersonal Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>63.79 (0.48)***</td>
<td>63.79 (0.46)***</td>
<td>63.79 (0.48)***</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.078 (0.054)</td>
<td>-0.034 (0.052)</td>
<td>-0.094 (0.054)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-3.04 (1.02)**</td>
<td>-3.18 (0.97)**</td>
<td>-3.10 (1.02)**</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>0.23 (0.041)***</td>
<td>0.33 (0.041)***</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td>0.33 (0.041)***</td>
<td>0.33 (0.063)***</td>
</tr>
<tr>
<td>nondiscloseC ($b_{03}$)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_{0}$)</td>
<td>3.99</td>
<td>3.82</td>
<td>4.01</td>
</tr>
<tr>
<td>Residual</td>
<td>0.000082</td>
<td>0.00016</td>
<td>0.00019</td>
</tr>
</tbody>
</table>

*Note. Estimates are unstandardized regression coefficients.*

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 11
Perfectionistic self-presentation facets predicting patients’ levels on Interpersonal Affiliation Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ( (b_{00}) )</td>
<td>8.80 (0.77)***</td>
<td>11.12 (1.07)***</td>
<td>12.22 (0.86)***</td>
</tr>
<tr>
<td>ageC ( (b_{01}) )</td>
<td>0.095 (0.10)</td>
<td>0.023 (0.11)</td>
<td>-0.0062 (0.090)</td>
</tr>
<tr>
<td>genderC ( (b_{02}) )</td>
<td>12.80 (2.17)***</td>
<td>9.50 (1.85)***</td>
<td>10.76 (1.76)***</td>
</tr>
<tr>
<td>self-promoteC ( (b_{03}) )</td>
<td>0.48 (0.082)***</td>
<td>0.43 (0.085)***</td>
<td>0.77 (0.11)***</td>
</tr>
<tr>
<td>nondisplayC ( (b_{03}) )</td>
<td>0.43 (0.085)***</td>
<td>0.43 (0.085)***</td>
<td>0.77 (0.11)***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ( (\mu_{0i}) )</td>
<td>7.07</td>
<td>7.14</td>
<td>6.74</td>
</tr>
<tr>
<td>Residual</td>
<td>0.000000049</td>
<td>0.000000050</td>
<td>0.00000077</td>
</tr>
</tbody>
</table>

*Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* \( p < .05 \). ** \( p < .01 \). *** \( p < .001 \).
Table 12
Perfectionistic self-presentation facets predicting the patients' levels on Interpersonal Control Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((b_{00}))</td>
<td>-24.74 (1.30)***</td>
<td>-22.82 (1.21)***</td>
<td>-24.74 (1.22)***</td>
</tr>
<tr>
<td>ageC ((b_{01}))</td>
<td>-0.13 (0.15)</td>
<td>-0.22 (0.14)</td>
<td>-0.13 (0.14)</td>
</tr>
<tr>
<td>genderC ((b_{02}))</td>
<td>1.95 (2.75)</td>
<td>2.66 (2.99)</td>
<td>0.79 (2.58)</td>
</tr>
<tr>
<td>self-promoteC ((b_{03}))</td>
<td>-0.60 (0.11)***</td>
<td>-0.87 (0.12)***</td>
<td>-1.43 (0.16)***</td>
</tr>
<tr>
<td>nondisplayC ((b_{03}))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ((b_{03}))</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((\mu_0))</td>
<td>10.78</td>
<td>10.25</td>
<td>10.10</td>
</tr>
<tr>
<td>Residual</td>
<td>0.00038</td>
<td>0.00000076</td>
<td>0.00044</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* \(p < .05\). ** \(p < .01\). *** \(p < .001\).
### Table 13
Perfectionistic self-presentation facets predicting patients' levels on Impact Affiliation Messages over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>2.72 (0.15)***</td>
<td>2.72 (0.15)***</td>
<td>2.72 (0.15)***</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.0025 (0.017)</td>
<td>-0.0011 (0.017)</td>
<td>-0.0032 (0.016)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.41 (0.31)</td>
<td>-0.39 (0.31)</td>
<td>-0.44 (0.31)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.0042 (0.013)</td>
<td></td>
<td>0.0021 (0.013)</td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td>0.0021 (0.013)</td>
<td>-0.017 (0.019)</td>
</tr>
<tr>
<td>nondiscloseC ($b_{03}$)</td>
<td></td>
<td>0.0021 (0.013)</td>
<td>-0.017 (0.019)</td>
</tr>
<tr>
<td>SessionWP ($b_{10}$)</td>
<td>-0.0038 (0.031)</td>
<td>-0.0039 (0.031)</td>
<td>-0.0036 (0.031)</td>
</tr>
<tr>
<td>SessionWP x ageC ($b_{11}$)</td>
<td>-0.0023 (0.0034)</td>
<td>-0.0023 (0.0035)</td>
<td>-0.0022 (0.0034)</td>
</tr>
<tr>
<td>SessionWP x genderC ($b_{12}$)</td>
<td>-0.011 (0.066)</td>
<td>-0.012 (0.065)</td>
<td>-0.0077 (0.066)</td>
</tr>
<tr>
<td>SessionWP x self-promoteC ($b_{13}$)</td>
<td>0.00049 (0.0027)</td>
<td></td>
<td>0.00049 (0.0027)</td>
</tr>
<tr>
<td>SessionWP x nondisplayC ($b_{13}$)</td>
<td></td>
<td>0.00049 (0.0027)</td>
<td>0.00049 (0.0027)</td>
</tr>
<tr>
<td>SessionWP x nondiscloseC ($b_{13}$)</td>
<td></td>
<td>0.00049 (0.0027)</td>
<td>0.00049 (0.0027)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>1.14</td>
<td>1.14</td>
<td>1.13</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{1i}$)</td>
<td>0.18</td>
<td>0.18</td>
<td>0.18</td>
</tr>
<tr>
<td>Residual</td>
<td>0.56</td>
<td>0.56</td>
<td>0.56</td>
</tr>
</tbody>
</table>

*Note.* Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 14
Perfectionistic self-presentation facets predicting patients’ levels on Impact Control Messages over the course of one week.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>-0.15 (0.086)</td>
<td>-0.15 (0.085)</td>
<td>-0.15 (0.084)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.00047 (0.0097)</td>
<td>-0.0034 (0.0096)</td>
<td>-0.0021 (0.0094)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>0.39 (0.18)*</td>
<td>0.37 (0.18)*</td>
<td>0.34 (0.18)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.0017 (0.0074)</td>
<td>-0.012 (0.0075)</td>
<td>-0.022 (0.011)</td>
</tr>
<tr>
<td>nondisplayC ($b_{04}$)</td>
<td>-0.020 (0.021)</td>
<td>-0.020 (0.021)</td>
<td>-0.020 (0.021)</td>
</tr>
<tr>
<td>nondiscloseC ($b_{05}$)</td>
<td>-0.0225 (0.0024)</td>
<td>-0.0018 (0.0024)</td>
<td>-0.0022 (0.0023)</td>
</tr>
<tr>
<td>SessionWP ($b_{10}$)</td>
<td>-0.012 (0.045)</td>
<td>-0.0072 (0.044)</td>
<td>-0.0026 (0.0045)</td>
</tr>
<tr>
<td>SessionWP x ageC ($b_{11}$)</td>
<td>0.000085 (0.0018)</td>
<td>0.0024 (0.0019)</td>
<td>0.0039 (0.0028)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>0.66</td>
<td>0.64</td>
<td>0.64</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{1i}$)</td>
<td>0.13</td>
<td>0.13</td>
<td>0.13</td>
</tr>
<tr>
<td>Residual</td>
<td>0.36</td>
<td>0.36</td>
<td>0.36</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.
self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections.

* $p < .05$. ** $p < .01$. *** $p < .001$
Table 15
Perfectionistic self-presentation facets predicting patients' levels on Total Alliance over the course of one week with the indirect effect of Total Interpersonal Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ((b_{00}))</td>
<td>4.63 (0.12)***</td>
<td>4.63 (0.12)***</td>
<td>4.62 (0.12)***</td>
</tr>
<tr>
<td>SessionC ((b_{1}))</td>
<td>0.0052 (0.0023)*</td>
<td>0.0050 (0.0023)*</td>
<td>0.0047 (0.0023)</td>
</tr>
<tr>
<td>SessionC^2 ((b_{2}))</td>
<td>-0.000070 (0.000049)</td>
<td>-0.000071 (0.000049)</td>
<td>-0.000066 (0.000050)</td>
</tr>
<tr>
<td>ageC ((b_{01}))</td>
<td>-0.011 (0.0094)</td>
<td>-0.012 (0.0095)</td>
<td>-0.0092 (0.0094)</td>
</tr>
<tr>
<td>genderC ((b_{02}))</td>
<td>0.011 (0.18)</td>
<td>0.025 (0.18)</td>
<td>-0.014 (0.19)</td>
</tr>
<tr>
<td>self-promoteC ((b_{03}))</td>
<td>-0.019 (0.0075)*</td>
<td>-0.021 (0.0081)*</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ((b_{03}))</td>
<td></td>
<td>-0.026 (0.012)*</td>
<td></td>
</tr>
<tr>
<td>nondiscloseC ((b_{03}))</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>totproblemsC ((b_{04}))</td>
<td>-0.00066 (0.0095)</td>
<td>0.0028 (0.0099)</td>
<td>-0.0015 (0.0096)</td>
</tr>
<tr>
<td>SessionWP ((b_{30}))</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
</tr>
<tr>
<td>Random effects</td>
<td>SD</td>
<td>SD</td>
<td>SD</td>
</tr>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ((\mu_{0i}))</td>
<td>0.51</td>
<td>0.52</td>
<td>0.52</td>
</tr>
<tr>
<td>SessionWP (slope) ((\mu_{3i}))</td>
<td>0.055</td>
<td>0.056</td>
<td>0.055</td>
</tr>
<tr>
<td>Residual</td>
<td>0.75</td>
<td>0.75</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections, totproblems = total interpersonal problems.

* \(p < .05\), ** \(p < .01\), *** \(p < .001\).
Table 16
Perfectionistic self-presentation facets predicting patients' levels on Total Alliance over the course of one week with the indirect effect of Interpersonal Affiliation and Control Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept (b_{00})</td>
<td>4.64 (0.12)***</td>
<td>4.64 (0.12)***</td>
<td>4.62 (0.12)***</td>
</tr>
<tr>
<td>SessionC (b_{1})</td>
<td>0.0051 (0.0024)*</td>
<td>0.0050 (0.0023)*</td>
<td>0.0046 (0.0024)</td>
</tr>
<tr>
<td>SessionC^2 (b_{2})</td>
<td>-0.000075 (0.000051)</td>
<td>-0.000077 (0.000051)</td>
<td>-0.000070 (0.000052)</td>
</tr>
<tr>
<td>ageC (b_{01})</td>
<td>-0.011 (0.0097)</td>
<td>-0.013 (0.0098)</td>
<td>-0.010 (0.0097)</td>
</tr>
<tr>
<td>genderC (b_{02})</td>
<td>0.0052 (0.20)</td>
<td>0.043 (0.19)</td>
<td>0.011 (0.20)</td>
</tr>
<tr>
<td>self-promoteC (b_{03})</td>
<td>-0.019 (0.0080)*</td>
<td>-0.021 (0.0086)*</td>
<td></td>
</tr>
<tr>
<td>nondisplayC (b_{03})</td>
<td></td>
<td></td>
<td>-0.029 (0.013)*</td>
</tr>
<tr>
<td>nondiscloseC (b_{03})</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>affproblemsC (b_{04})</td>
<td>-0.0017 (0.0059)</td>
<td>-0.0022 (0.0058)</td>
<td>-0.0014 (0.0060)</td>
</tr>
<tr>
<td>conproblemsC (b_{05})</td>
<td>-0.0059 (0.0036)</td>
<td>-0.0022 (0.0038)</td>
<td>-0.0020 (0.0038)</td>
</tr>
<tr>
<td>affproblemsC x conproblemsC (b_{06})</td>
<td>0.0000067 (0.00022)</td>
<td>-0.000039 (0.00022)</td>
<td>-0.00011 (0.00022)</td>
</tr>
<tr>
<td>SessionWP (b_{30})</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
<td>0.13 (0.030)***</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept (\mu_{0i})</td>
<td>0.53</td>
<td>0.53</td>
<td>0.54</td>
</tr>
<tr>
<td>SessionWP (slope) (\mu_{3i})</td>
<td>0.055</td>
<td>0.056</td>
<td>0.055</td>
</tr>
<tr>
<td>Residual</td>
<td>0.75</td>
<td>0.75</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections, affproblems = interpersonal affiliation problems, conproblems = interpersonal control problems.

* \(p < .05\). ** \(p < .01\). *** \(p < .001\).
Table 17
Perfectionistic self-presentation facets predicting patients' levels on Patient Working Capacity over the course of one week with the indirect effect of Total Interpersonal Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>4.56 (0.17)**</td>
<td>4.57 (0.16)**</td>
<td>4.56 (0.15)**</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0057 (0.0030)</td>
<td>0.0056 (0.0030)</td>
<td>0.0055 (0.0029)</td>
</tr>
<tr>
<td>SessionC^2 ($b_2$)</td>
<td>-0.000081 (0.000065)</td>
<td>-0.000081 (0.000064)</td>
<td>-0.000076 (0.000062)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.013 (0.012)</td>
<td>-0.015 (0.012)</td>
<td>-0.013 (0.012)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.079 (0.24)</td>
<td>-0.041 (0.24)</td>
<td>-0.10 (0.23)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.019 (0.0099)</td>
<td>-0.024 (0.011)*</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td></td>
<td>-0.050 (0.014)**</td>
</tr>
<tr>
<td>totproblemsC ($b_{04}$)</td>
<td>-0.0067 (0.013)</td>
<td>-0.0022 (0.013)</td>
<td>-0.0026 (0.012)</td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td>0.16 (0.045)**</td>
<td>0.16 (0.045)**</td>
<td>0.16 (0.045)**</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Random effects</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>0.74</td>
<td>0.74</td>
<td>0.62</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{3i}$)</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>Residual</td>
<td>1.03</td>
<td>1.03</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections, totproblems = total interpersonal problems.

* $p < .05$. ** $p < .01$. *** $p < .001$. 

$[704x567]131$
Table 18
Perfectionistic self-presentation facets predicting patients' levels on Patient Working Capacity over the course of one week with the indirect effect of Interpersonal Affiliation and Control Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>4.55 (0.17)***</td>
<td>4.55 (0.17)***</td>
<td>4.53 (0.16)***</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0057 (0.0031)</td>
<td>0.0056 (0.0030)</td>
<td>0.0054 (0.0029)</td>
</tr>
<tr>
<td>SessionC² ($b_2$)</td>
<td>-0.000076 (0.000067)</td>
<td>-0.000076 (0.000066)</td>
<td>-0.000064 (0.000064)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.013 (0.013)</td>
<td>-0.016 (0.013)</td>
<td>-0.015 (0.012)</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.039 (0.26)</td>
<td>-0.0091 (0.25)</td>
<td>-0.10 (0.24)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.018 (0.011)</td>
<td>-0.022 (0.011)</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{03}$)</td>
<td></td>
<td></td>
<td>-0.056 (0.017)**</td>
</tr>
<tr>
<td>affproblemsC ($b_{04}$)</td>
<td>-0.00072 (0.0077)</td>
<td>-0.00074 (0.0075)</td>
<td>0.0035 (0.0073)</td>
</tr>
<tr>
<td>conproblemsC ($b_{05}$)</td>
<td>0.0036 (0.0047)</td>
<td>0.0017 (0.0049)</td>
<td>-0.00084 (0.0047)</td>
</tr>
<tr>
<td>affproblemsC x conproblemsC ($b_{06}$)</td>
<td>-0.00018 (0.00029)</td>
<td>-0.00023 (0.00029)</td>
<td>-0.00030 (0.00027)</td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td>0.16 (0.045)***</td>
<td>0.16 (0.045)***</td>
<td>0.16 (0.045)***</td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($\mu_0$)</td>
<td>0.76</td>
<td>0.77</td>
<td>0.64</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_3$)</td>
<td>0.17</td>
<td>0.17</td>
<td>0.17</td>
</tr>
<tr>
<td>Residual</td>
<td>1.03</td>
<td>1.03</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, nondisclose = nondisclosure of imperfections, affproblems = interpersonal affiliation problems, conproblems = interpersonal control problems.

* p < .05. ** p < .01. *** p < .001.
Table 19
Perfectionistic self-presentation facets predicting patients' levels on Patient Commitment over the course of one week with the indirect effect of Total Interpersonal Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>5.78 (0.13)***</td>
<td>5.78 (0.13)***</td>
</tr>
<tr>
<td>SessionC ($b_1$)</td>
<td>0.0056 (0.0026)*</td>
<td>0.0054 (0.0026)*</td>
</tr>
<tr>
<td>SessionC^2 ($b_2$)</td>
<td>-0.000083 (0.000054)</td>
<td>-0.000086 (0.000055)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.022 (0.010)*</td>
<td>-0.023 (0.011)*</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.40 (0.20)</td>
<td>-0.35 (0.20)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.021 (0.0082)*</td>
<td></td>
</tr>
<tr>
<td>nondisplayC ($b_{04}$)</td>
<td></td>
<td>-0.020 (0.0090)*</td>
</tr>
<tr>
<td>totproblemsC ($b_{04}$)</td>
<td>-0.0035 (0.010)</td>
<td>-0.0016 (0.011)</td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td>0.070 (0.030)*</td>
<td>0.070 (0.030)*</td>
</tr>
</tbody>
</table>

Random effects
<table>
<thead>
<tr>
<th></th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>by patient</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Intercept ($\mu_{0i}$)</td>
<td>0.63</td>
<td>0.63</td>
</tr>
<tr>
<td>SessionWP (slope) ($\mu_{3i}$)</td>
<td>0.076</td>
<td>0.075</td>
</tr>
<tr>
<td>Residual</td>
<td>0.72</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, totproblems = total interpersonal problems.

* $p < .05$. ** $p < .01$. *** $p < .001$. 
Table 20
Perfectionistic self-presentation facets predicting patients' levels on Patient Commitment over the course of one week with the indirect effect of Interpersonal Affiliation and Control Problems.

<table>
<thead>
<tr>
<th>Fixed effects</th>
<th>Estimate (SE)</th>
<th>Estimate (SE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($b_{00}$)</td>
<td>5.80 (0.13)***</td>
<td>5.80 (0.13)***</td>
</tr>
<tr>
<td>SessionC ($b_{1}$)</td>
<td>0.0053 (0.0025)*</td>
<td>0.0052 (0.0026)*</td>
</tr>
<tr>
<td>SessionC² ($b_{2}$)</td>
<td>-0.000093 (0.000055)</td>
<td>-0.000098 (0.000056)</td>
</tr>
<tr>
<td>ageC ($b_{01}$)</td>
<td>-0.021 (0.010)*</td>
<td>-0.024 (0.011)*</td>
</tr>
<tr>
<td>genderC ($b_{02}$)</td>
<td>-0.42 (0.21)</td>
<td>-0.36 (0.21)</td>
</tr>
<tr>
<td>self-promoteC ($b_{03}$)</td>
<td>-0.026 (0.0087)**</td>
<td>-0.027 (0.0094)**</td>
</tr>
<tr>
<td>nondisplayC ($b_{04}$)</td>
<td>0.0023 (0.0063)</td>
<td>0.0011 (0.0063)</td>
</tr>
<tr>
<td>affproblemsC ($b_{05}$)</td>
<td>-0.0053 (0.0039)</td>
<td>-0.0071 (0.0041)</td>
</tr>
<tr>
<td>conproblemsC x affproblemsC ($b_{06}$)</td>
<td>0.00013 (0.00024)</td>
<td>0.000063 (0.00024)</td>
</tr>
<tr>
<td>SessionWP ($b_{30}$)</td>
<td>0.070 (0.030)*</td>
<td>0.070 (0.030)*</td>
</tr>
</tbody>
</table>

Random effects

<table>
<thead>
<tr>
<th>by patient</th>
<th>SD</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intercept ($μ_{0i}$)</td>
<td>0.62</td>
<td>0.63</td>
</tr>
<tr>
<td>SessionWP (slope) ($μ_{3i}$)</td>
<td>0.076</td>
<td>0.075</td>
</tr>
<tr>
<td>Residual</td>
<td>0.72</td>
<td>0.72</td>
</tr>
</tbody>
</table>

Note. Estimates are unstandardized regression coefficients.

self-promote = perfectionistic self-promotion, nondisplay = nondisplay of imperfections, affproblems = interpersonal affiliation problems, conproblems = interpersonal control problems.

* p < .05. ** p < .01. *** p < .001.
Footnotes

1. There is literature on dual approaches to perfectionism, one being what some researchers termed normal, healthy, positive or adaptive perfectionism, and the other being abnormal, unhealthy, negative or maladaptive perfectionism. I take the stance that perfectionism is only maladaptive. What has been considered adaptive perfectionism appears to be more similar to conscientiousness but not to the extreme-obsessive striving and need for (or appearance of) perfection. While some benefits may be seen in achieving accomplishments, I believe that perfectionism has a much higher cost as a vulnerability factor particularly when stressors and failures are encountered (e.g., Flett & Hewitt, 2006; Greenspon, 2000).

2. Calculations of the effect size require dividing by the standard deviation of the residuals. However, the standard deviation of the residuals in these models is very small, nearing zero. Dividing by zero is mathematically unwise and theoretically equates to infinity (i.e., a very large number), regardless of the numerator. Thus, even though the calculation is not undertaken, it can be indirectly understood through these mathematical principles that the effect size is very large.
References


Repression and dissociation: Implications for personality theory, psychopathology & health (pp. 299-335). Chicago, IL: University of Chicago Press.


*Psychoanalytic Review, 73*, 103-120.


Luborsky, L., Singer, B. & Luborsky, E. (1975). Comparative studies of psychotherapies: Is it true that "Everyone has won and all must have prizes?" *Archives of General Psychiatry, 32*, 995-1008.


