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The Role of Expectations in Treatment Outcome and Symptom Development in Anxiety Disorders

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<http://dx.doi.org/10.5772/60668>

Abstract

For more than 60 years, researchers have been interested in determining the impact of expectations on treatment outcome. Earlier studies mostly focused on two types of expectations: prognostic and process expectations. Aims: To review how four different types of expectations (prognostic, process, anxiety expectancy and anxiety sensitivity) contribute to psychotherapy outcome, and to the development of clinical disorders, especially anxiety. Conclusions: First, the role of process and prognostic expectancies in clinical disorders and psychotherapy outcome should be clarified by addressing the methodological flaws of the earlier expectancy studies. Second, studies, especially those on anxiety disorders, may benefit from evaluating the four different types of expectations to determine their relative impact on outcome, and on the development and maintenance of these disorders. Third, possible links with other clinical disorders should be further explored. Finally, expectancies should be assessed prior to treatment and after several sessions to determine the extent to which the treatment's failure in modifying initial low expectancies contribute to a poor outcome.

Keywords: Prognostic expectations, process expectations, anxiety sensitivity, anxiety expectancy, anxiety disorders

1. Introduction

Expectations play an important role in the treatment of mental health issues. For more than 60 years, researchers have been interested in determining the impact of client expectations on

treatment outcome. Nevertheless, many of the criticisms regarding the flawed methodology implemented to research the impact of expectations that had already been raised by Wilkins in 1973 [1] have not been addressed to this day. As a matter of fact, a recent meta-analysis on the role of client prognostic expectations on treatment outcome argued that these studies continued to be fraught with methodological limitations [2].

In a review on expectancies in psychiatric services, Noble, Douglas and Newman [3] summarised several studies on prognosis and process expectations. Expectations may be defined as "a person's understanding of the probability that an event will occur" [4]. This understanding may derive from "any belief, hypothesis, theory, assumption or accessible construct" [5]. Since the 1950s, studies have examined the impact of expectations on the outcome of treatment services in mental health or with psychological issues. Prognostic and participant role expectations, as identified by Goldstein [6], are the most frequently researched categories. Prognostic expectations refer to the probability of a therapeutic success. Process expectations include the participants' (i.e., therapist and client) roles referring to anticipations regarding therapist characteristics (i.e., expertness, attractiveness and trustworthiness), therapist and client behaviour and attitudes expected to be displayed throughout therapy (e.g., [7-9]). Process expectations also include anticipations referring to therapeutic process and procedures (i.e., duration, the function and general process of therapy) (e.g., [7, 10, 11]). There have been several reviews on expectations (e.g., [1, 3, 7, 10, 12, 13]) and some appear to indicate that the data is inconclusive. Although expectations appear to play an important role in psychotherapy outcome, there are many reported methodological shortcomings within the studies reviewed.

More recently, there has been a resurgence of studies examining the impact of expectations on the development and maintenance of anxiety disorders. The trademark of anxiety disorders appears to be the presence of excessive fear and anxiety, often associated with problematic behavioural responses, such as avoidance [14]. The current interest in expectancies arose out of research conducted on motivation to avoid feared objects, situations or physical symptoms (see [15]). The focus has not been so much on therapy outcome, but on the development and maintenance of clinical disorders, namely, anxiety disorders (e.g., [15]). Reiss's expectancy theory ([15-20]) posits that human fear is composed of two distinct factors: expectations (what one expects will happen to him/her) and sensitivities (why one is afraid of the expected occurrence).

The first factor (i.e., expectations), can be broken down in three ways. According to Reiss's theory, individuals may hold danger expectancies (e.g., "I expect to get injured by that spider"), expectations of being socially evaluated (e.g., "I expect others to think I'm stupid") and anxiety expectancies (e.g., "I expect to have a panic attack if I go on the airplane"). The second factor (i.e., anxiety sensitivity), refers to the belief that the sensations of anxiety have harmful somatic, psychological or social consequences [15]. Individuals may possess sensitivities regarding injury (e.g., "I expect to die if the spider bites me"), social evaluation (e.g., "I expect to turn red if they think I'm stupid") and anxiety (e.g., "I expect to have a heart attack if I have a panic attack on the airplane"). Expectations and sensitivities vary from one individual to the next. However, elevated sensitivities and negative expectations are more likely to contribute to phobic avoidance behaviour and to the development and maintenance of anxiety disorders.

The purpose of this chapter is to explore the relationship between treatment outcome and four different types of expectancies: prognostic (e.g., “I expect to get better at the end of therapy”), process (e.g., “I expect to do exposure therapy”) and anxiety expectancies (e.g., “I expect to panic at the grocery store”) and anxiety sensitivity (e.g., “I expect to die from a heart attack if I panic”). Their influence on the development and maintenance of anxiety disorders in adults will also be examined.

Type of expectancy	Definition	Example
Prognostic	Probability of a therapeutic success	“I expect to get better at the end of therapy”
Process	1) Roles: Anticipations regarding therapist characteristics, therapist and client behaviour and attitudes expected to be displayed throughout therapy	1) “I expect the therapist to be warm”
	2) Anticipations regarding therapeutic procedures	2) “I expect to do exposure therapy”
Anxiety expectancy	Probability that a particular fearful response will occur	“I expect to panic at the grocery store”
Anxiety sensitivity	Belief that the sensations of anxiety have harmful somatic, psychological or social consequences	“I expect to die from a heart attack if I panic”

Table 1. Summary of type of expectations

2. Expectations in mental health

2.1. Prognostic expectations

Frank's earlier studies (e.g., [21-23]) produced evidence indicating that clients who expect a successful therapy outcome often benefited more from psychotherapy than those who had poorer expectations. A number of other earlier studies also reproduced the above findings, demonstrating an existing relationship between favourable prognostic expectations and therapeutic improvement (e.g., [24, 25]).

Subsequent studies, however, began to report contradictory findings. Certain researchers were not able to establish a significant relationship between clients’ expectancy of improvement and therapeutic gains [26]. Imber and colleagues [27] also obtained non-significant results when they attempted to induce positive expectations for improvement in clients. Goldstein and Shipman [28] discovered that a curvilinear relationship existed; those who had either very high or very low prognostic expectations improved the least. Their study appears to suggest that moderate expectations, which may be more realistic than ones that are very high or very low, are linked to outcome.

Following these inconsistencies in the earlier findings, Wilkins [1] wrote a critical review on the research published on clients' expectations of therapeutic gain and focused his criticisms on the methodology used. Some of the major weaknesses identified included (1) outcome measures that were not validated. (i.e., several studies were based on self-reports that described client perceptions of how they feel instead of validated measures of symptom reduction administered by independent raters); (2) using expectancy measures as outcome measures, rather than administering questionnaires that differentiate the two; and (3) using correlational techniques to determine the effect of expectancies on symptom reduction. Other methodological deficiencies noted by separate authors include the use of a minimally disturbed student population [29] and the common administration of global measures of expectations rather than measures evaluating prognostic expectations that refer to specific symptoms and behaviours [30]. Martin and colleagues [30] attempted to address some of these critical issues by using (a) a homogeneous group of people with chronic schizophrenia rather than a small, minimally disturbed, heterogeneous population such as students; (b) validated outcome measures; and (c) a measure of expectancy that assesses expectations for improvement in symptoms and behaviours. A relationship was found between expectations and post-hospital adjustment.

A recent meta-analysis of 46 correlational studies ($n=8,016$) found a small but significant effect ($d=.24$, $p < .001$) of the role of client prognostic expectations on treatment outcome [31]. Similar to previous findings, Constantino and colleagues [31] reported limitations in the studies and shortcomings with expectancy measures. For example, one-item scales were used, there was confusion among constructs (e.g., treatment expectancy versus treatment credibility; treatment outcome versus treatment expectations) and the same questions were used to measure expected outcome and actual outcome. Finally, the authors argued that expectations appear to change, which emphasises the need for greater caution regarding results derived from single time measurements of expectations (i.e. measuring expectations only once).

2.1.1. Shifts in prognostic expectations

Perotti and Hopewell (1980; cited in [10]) concluded that although expectancy effects are important in various interventions including systematic desensitization with phobic individuals, pre-therapy expectations have little effect on outcome. They suggested that it would be important to measure the prognostic expectations during therapy. After being exposed to several components of therapy, patients may become better at predicting their outcome (see [10, 32]). Prognostic expectations may shift in a positive direction if clients perceive improvement or they may become more negative if no benefits are noticed [33]. Although these studies recommended examining expectations only during therapy, measuring pretreatment expectations may also be useful in determining the specific treatment components that contribute to these cognitive shifts. Moreover, it appears equally important to investigate the outcome of patients who were not capable of changing their initial negative expectancies. A poor outcome in such clients may indicate that the treatment may require an added component aimed at addressing initial negative expectations of improvement. Conversely, it may also be suggested that lower expectations of improvement may be realistic if they also suffer from more severe

symptomatology. Factors that both preclude and encourage shifts in expectations should be explored in order to address the specific needs of the clients during therapy.

A study by Safren, Heimberg and Juster [34] examined prognostic expectancies of clients with social phobia who were taking part in a cognitive-behavioural group treatment. An expectancy measure was administered at the end of the first therapy session after clients were presented with the cognitive-behaviour therapy (CBT) model (i.e., information) for social phobia and again at the end of the fourth session after clients had the opportunity to experience the different treatment components. The data revealed that severity and duration of social phobia were related to initial low expectations. Moreover, findings showed that initial expectancies significantly predicted improvement in symptomatology at post-therapy. The design implemented, however, did not measure expectancies prior to the first therapy session. Consequently, it is not possible to conclude that initial expectancies were associated with outcome. It may be more accurate to assume that the beliefs of improvement held following the initial therapy session, whereby patients received important information, were related to CBT results. In addition, no cognitive shifts were apparent since expectancy scores did not differ between sessions one and four. As indicated in the previous paragraph, it seems important to verify whether there is a difference between pre-therapy expectations and expectations following the first information session in order to determine the extent to which patients modify their initial expectations. It may be suggested that patients who modify their initial low expectations have a better outcome than those who do not. If this was the case, the components of CBT influential in modifying patient expectations should be examined. Nevertheless, the above study demonstrated that expectations during therapy are important determinants of therapeutic outcome even when they are measured after the first session.

A recent study by Tsai, Ogrodniczuk, Sochting and Mirmiran [35] attempted to address some of the shortcomings of earlier research. This study involved participants engaging in group CBT for depression. The authors examined the change in clients' prognostic expectations between pretreatment and after the third session, where they had received information regarding the treatment content. No significant change in clients' perceptions were observed; however, 33% of participants reported a positive shift in their expectations, 42% reported a negative shift and the remaining 25% reported no change in their expectations. Although increases in expectations were of small magnitude, they were significantly associated with reduced anxiety symptoms and interpersonal problems, and an increase in quality of life. This suggests that helping clients shift their expectations during sessions may improve outcome.

Ruptures in therapeutic alliance may be linked to shifts in prognostic expectations. Westra, Constantino and Aviram [36] measured the impacts of therapeutic alliance changes on prognostic expectations of clients with a primary diagnosis of generalised anxiety disorder (GAD) who were taking part in CBT. The authors found that, on average, clients who perceived a rupture in therapeutic alliance lowered their prognostic expectations (i.e., expectations for improvement) by as much as 25%. Moreover, those clients had higher levels of worry upon treatment termination. Although this study found that shifts in prognostic expectations may occur and influence therapy outcome, studies addressing these shifts remain scarce.

2.2. Process expectations

Similar to the studies dealing with the effects of prognostic expectations, numerous other studies specifically concentrated on examining the links between process expectations and treatment outcome. Process expectations include (1) participants' (i.e., therapist and client) roles referring to anticipations regarding therapist characteristics, therapist and client behaviour and attitudes expected to be displayed throughout therapy, and (2) anticipations referring to therapeutic process and procedures. The majority of the studies conducted on process expectations may be found in counselling research (e.g., [37-41]). Numerous studies in counselling have examined process expectations and expectations referring to the role of the participant and the counsellor (e.g., [40, 43-44]). Duckro and colleagues [7] critically reviewed the effects of confirming or disconfirming process expectations related to the role of the participant. Based on this review, only moderate support was found regarding the relationship between disconfirmed participant role expectations and poor outcome. A subsequent review by Glass, Arnkoff and Shapiro [12] also concluded that the literature on role expectations is vague. Although most of the studies they reviewed found an association between clients' role expectations and outcome, poor methodology and mixed findings raise questions about the validity of expectations as a predictor of outcome.

A more recent qualitative study [45] examined participants diagnosed with GAD who underwent a 14-hour CBT treatment. Following the treatment, the authors found that the disconfirmation of pretreatment expectations was often experienced positively by clients who had good treatment outcome (i.e., a clinically significant change and a post-therapy score in the normal range on the Penn State Worry Questionnaire). Clients with a favourable outcome were more likely to have been pleasantly surprised by the therapist (e.g., clients indicated that the therapist was collaborative or that they were comfortable with the therapist) or their experience in therapy (e.g., clients indicated that they did not expect to change so much or that they could trust the process). Conversely, those with poor outcome following therapy were more likely to have had their positive expectations disconfirmed (e.g., clients indicated their problems were more chronic than they thought). These results must be interpreted with great caution because clients were asked to talk about their initial expectations retrospectively, and treatment outcome may have influenced the recall of their initial expectations. The number of participants was also limited (i.e., $n=9$). In conclusion, the reported methodological flaws and the paucity of studies published on process expectations over the last few years further support the need for new research in this area.

2.2.1. *Participants' role in therapy*

Different aspects of the participants' role expectations may be linked to treatment outcome. A recent study by Patterson, Anderson and Wei [99] examined the effect of different components of the Expectations about Counselling Questionnaire-Brief Form on outcome. They found that clients' expectations regarding counsellor expertise (e.g., expectations that the therapist will be helpful) were significantly related to outcome, while expectations regarding personal commitment (e.g., client responsibility and commitment towards the therapy) and facilitative conditions (e.g., therapist personal characteristics such as warmth) were not related to

outcome. However, all three factors were found to be significantly related to the clients' perception of working alliance.

Al-Darmaki and Kivlighan [42] examined the effect of expectation congruence on the client–counsellor relationship and on their working alliance. Counsellors and clients completed the questionnaire on expectancies after the third session. The findings suggested that neither high nor low expectancies predict the therapeutic alliance; increased congruence in their expectations with regards to the therapeutic relationship is a better predictor of alliance. The authors concluded that counsellors and researchers should focus on trying to increase congruence in expectations to form a better therapeutic relationship. Although it appears important to have congruent expectations, it may be difficult to increase congruence after patients have been exposed to several components of therapy and no apparent changes in expectations have taken place. If therapist–patient expectancies continue to be incongruent after several sessions and this has a negative impact on the therapeutic relationship, it may be useful for the therapist and patient to discuss this issue in an attempt to modify expectancies. If the therapist and patient cannot come to an agreement at this stage, redirecting the patient to an alternative therapeutic approach or a different therapist corresponding with their expectancies may be a better solution.

Clients' role expectations may be typical of a particular therapeutic approach (e.g., CBT). Seligman, Wuyek, Geers, Hovey and Motley [46] studied role expectations among university students enrolled in an introductory class of psychology. The authors asked the participants about their expectations regarding the therapist's and the clients' role in therapy (e.g., "What does a therapist do during a typical therapy session?"). The participants were asked to list a maximum of three short answers to each question. The authors then coded the participants' responses as either being typical of CBT or not. They found that the majority of the participants' responses (i.e., 96% for therapist role and 97% for client role) were judged by the authors as being non-specific to CBT. For example, expectations regarding the role of a therapist that were identified as non-specific to CBT were "Asks questions to see if the patient's problems have come from childhood" and "Sits behind something so the patient does not see their facial expressions". Expectations regarding the role of a therapist that were identified as specific to CBT were, for example, "Attempts to change how the brain interprets problems" and "Directs patient's thoughts in the direction they need to be in". As for client role, examples of expectations identified as non-specific to CBT were "Stay positive" and "Dig deep into their emotions". Conversely, expectations identified as specific to CBT regarding client role were "Face their fears" and "Be monitored on their path to their goal". Based on these results, the authors argue that many clients may hold inaccurate expectations before entering CBT. As indicated in the preceding studies, the data examining the influence of client role expectations on therapeutic outcome is unequivocal.

One of the earlier criticisms put forward by authors regarding research on process expectations was the ambiguity attached to its definition. A study by Tracey and Dundon [9] directly addressed this problem by distinguishing the "anticipatory role" and the "preferences" of the clients; two constructs which, according to Duckro and associates [7], were often confounded. Tracey and Dundon [9] measured the following process expectations related to the role of the client: approval, advice, listening and relationship. However, in order to verify the actual

meaning of expectations, the measure they administered was modified to examine the difference between client anticipations and preferences. Clients were to complete the questionnaire on two separate occasions: first, they were to report how they anticipated counselling to be, and then, they were to indicate what they preferred counselling to be. They found that anticipations and preferences were significantly different; however, each anticipation subscale was highly correlated with its preference counterpart (i.e., range = .51 to .70). The elevated correlations between the two subscales prompted the authors to conclude that these two measures may not be as separate as initially proposed (e.g., [7]). Regardless, a high correlation between anticipations and preferences does not necessarily imply that they are not separate constructs. Furthermore, this study only examined counselling with a student population. Any interpretations made from correlations must take into account the possible selection bias. For instance, people who expect counselling to provide them with what they prefer are more likely to choose to attend counselling. Conversely, there may be a greater discrepancy between preferences and expectancies in situations where the client has little choice regarding his treatment options. For example, in publicly funded psychiatric or emergency services, there may not be many choices available for the client. His expectations may accurately reflect what is being offered, but his preferences may exceed the service options. To date, in the field of mental health, there is a lack of studies defining the relationship between the therapist and the client. Measuring patient preferences and expectations simultaneously and counsellor satisfaction may help define this relationship. Nevertheless, Tracey and Dundon's study [9] suggests that preferences and anticipations of clients should be measured separately due to the bidirectional discrepancy results that were detected. The bidirectional discrepancy found in this study showed that counsellors were more satisfied when clients with initial low role anticipations behaved in the manner in which they preferred with respect to the therapeutic relationship. They also displayed greater dissatisfaction with clients whose behaviour was inconsistent with their role anticipations and preferences in the therapeutic relationship. However, these findings were only detected with initial counsellor satisfaction as opposed to in-session and they were only related with one out of the four subscales (i.e., relationship).

Tinsley and Westcot [4] conducted a study to determine whether the Expectations about Counseling-Brief form measures expectations about the counselling process or other constructs including perceptions about counselling and counselling preferences. In this study, process expectation was defined as "the person's understanding of the probability that an event will occur"; perception referred to "the person's knowledge of an event"; and preference was considered as "the extent to which the person desires an event". Subjects were asked to read each question out loud and state all of their thoughts as they interpreted the question. The results revealed that subjects, for the most part, made statements that referred to expectations, and these were distinct from preferences and perceptions. The authors suggest that interviewers utilise the stem "I expect" in expectancy studies and repeat it more frequently during the interview to tap into the cognitions required to elicit expectation responses.

Many of the studies on participant role expectations have been descriptive. These descriptive studies allowed researchers to gather important information on the types of role expectations different groups of individuals have. For instance, the research has attempted to describe the different pretreatment expectations (a) in gender [38, 47]; (b) in the type of problem [47]; (c) between clients and the general public [38, 44]; (d) between individual and group therapy [38];

(e) referring to the gender of the counsellor [48]; (f) regarding counsellor race [49]; (g) in personality dimensions [50]; and (h) in terms of client readiness to change [51]. Relevant information may also be discovered by examining the impact of expectations on treatment outcome, especially in terms of adherence and satisfaction. Clients who do not receive what they expect may be dissatisfied with the services provided, adhere less to the treatment and eventually drop out. Such research may shed some light into factors that contribute to client dissatisfaction and discontinuation of treatment.

2.2.2. Therapeutic process and procedures

Studies on expectations have mostly focused on the role of the therapist and the client in counselling rather than on the procedures of a specific therapy. It seems important to assess process expectations related to distinct aspects of services. For example, expectations regarding the duration of treatment may influence dropout. A recent study found that when clients were provided with information regarding the relationship between treatment efficacy and the number of sessions attended (i.e., that, on average, 50% of the clients showed a clinically significant change after 13-18 sessions), they were significantly less likely to drop out [52]. However, a recent study by Callahan et al. [53] found that clients' pretreatment expectations regarding the duration of treatment remained unchanged after an education session. Conversely, clients' previous experiences with therapy were significantly related with the number of sessions attended and treatment outcome.

Other studies have focused on the procedures of treatment services by attempting to counteract process expectations that were inconsistent with the treatment being offered. Webster [54] conducted a study contrasting a group of patients who were sent an information sheet describing the nature of the initial assessment session to a control group who received no information sheet. The informed group was more likely to attend the initial appointment and express greater satisfaction; however, no difference was detected between the two groups in levels of state anxiety and expectations. Deane, Spicer and Leathem [55] used video as a means of communicating information on the objectives and process of therapy (see [56, 57] for more information on the pre-orientation video). Although the pre-therapy orientation video did not have a differential impact on psychotherapy outcome after two months, individuals who viewed the video had more accurate expectations about psychotherapy and were less anxious about undergoing psychotherapy than controls immediately following the presentation. These results suggest that even when initial expectations are not congruent with the process and procedures of therapy, patients are capable of readjusting their expectations and diminishing their anxiety about entering into therapy after they are presented with information.

3. Expectations and anxiety disorders

Patients receiving mental health services also hold expectations regarding their physical symptoms, anxiety, danger and pain to name a few. Negative expectancies (i.e., what one expects will happen to him/her) and elevated sensitivities (i.e., why one is afraid of the expected occurrence) are likely to contribute to avoidance behaviours and to the development of clinical disorders, especially anxiety (e.g., [15, 18, 58, 59, 62]). Anxiety sensitivity and expectancy (or

expectancy of a fearful response) have been studied with numerous psychological issues. The following will demonstrate the important role these two variables have on the development and maintenance of anxiety.

3.1. Expectancy of a fearful response

Expectations have been identified as important factors in the onset of psychological difficulties such as anxious and avoidance behaviours (e.g., [15, 58, 60]). These types of expectations represent the probability that a particular fearful response will occur. Individuals may demonstrate different expectations including, danger, social evaluation or anxiety expectancies. Irrational danger expectancies often contribute to the onset and maintenance of clinical phobias and phobic avoidance. For instance, studies have demonstrated that people with arachnophobia (i.e., phobia of spiders) and cynophobia (i.e., phobia of dogs) are more likely to have greater expectations of being bitten and injured as a result of being bitten (e.g., [59, 61]).

Magnified fears of pain can also lead to avoidance behaviours [62]. Cipher and Fernandez [60] found that chronic pain sufferers were more likely to avoid an activity if they expected to be harmed by it despite reassurance from the experimenter that no tissue damage would occur. This study suggests that experience of pain does not need to be present for the onset of avoidance behaviours; anticipation of pain is enough to contribute to avoidance behaviours. Several authors have suggested that anticipation of pain prevents such individuals from participating in physical tasks (e.g., [27]). Similarly, exaggerated fears of being negatively evaluated in social contexts, or expectations of experiencing negative emotions following a criticism, may also lead to social phobia or social/interpersonal difficulties (for greater detail see [15, 63]). In a recent study, Rodebaugh, Heimberg, Schultz and Blackmore [64] evaluated the social performance of individuals with social phobia by asking them to give a short speech in front of a camera. The authors found that after receiving video feedback, those who actually had greater social abilities (as rated by an independent observer) than they believed (i.e., high self-observer discrepancy) had significantly lower levels of anticipatory anxiety when asked to give another speech in front of a camera. Thus, it seems that individuals with high self-observer discrepancy were able to adjust their expectations after receiving additional and more realistic information.

Increased levels of anxiety expectancy (i.e., the extent to which individuals expect to experience anxiety) may also contribute towards the development of psychological problems. Numerous studies have demonstrated that a greater association exists between the anticipation of anxiety and avoidance behaviour, rather than with the occurrence of panic attacks (e.g., [65, 66, 67]). This suggests that as expectation of panic increases, so does avoidance. This finding is also supported by Craske and Barlow's [68] hypothesis, indicating that there is a greater relationship between avoidance behaviour and anxiety expectancy rather than with the occurrence of panic attacks. These results have important implications in the treatment of anxiety disorders. Treatments aimed at diminishing the expectation of anxiety may be effective in reducing the amount of fear actually experienced by the individual (e.g., [69]). For instance, Kirsch and colleagues [69] succeeded in diminishing the amount of fear experienced in snake-phobic patients through a systematic desensitization approach that dealt with their expectations of

anxiety. Southworth and Kirsch [70] also found that when anxiety expectancies were reduced, patients experienced less fear. By challenging expectations related to irrational fears through cognitive restructuring techniques and education, patients will not only gain greater insight into their difficulties, behaviours may also gradually be modified and the severity of clinical disorders diminished.

3.2. Anxiety sensitivity

Anxiety sensitivity is the belief that the sensations of anxiety have harmful somatic, psychological or social consequences [15]. Thus, people with high anxiety sensitivity believe that experiencing anxiety will cause them somatic (e.g., "I expect my panic attack to cause a heart attack"), psychological (e.g., "If I get trapped in the elevator, I expect to become anxious and lose control") or social harm (e.g., "I expect to turn red if others notice my fear of public speaking"). Essentially, individuals with high anxiety sensitivity fear the sensations of anxiety because of the expected consequences. As a result, they will try to avoid anxiety-inducing situations (e.g., [15]).

Reiss's expectancy theory implies that a high level of anxiety sensitivity can precede panic attacks and may be a risk factor for the development of anxiety disorders ([15, 18, 71, 72]). For instance, Maller and Reiss [71] conducted a longitudinal study whereby they administered the Anxiety Sensitivity Index (ASI; measure most frequently used to measure anxiety sensitivity; [18]) to college students in 1984 and retested them three years later. Low and high scores on the ASI were contrasted. The results indicated that anxiety sensitivity predicted anxiety disorders and the frequency and intensity of panic attacks. Subjects with high anxiety sensitivity were five times more likely to develop anxiety disorders (i.e., panic disorder, generalised anxiety disorder, simple phobia and social phobia), especially panic disorder. In a separate study, Taylor and colleagues [72] contrasted ASI scores between anxiety disorder patients (i.e., panic disorder, post-traumatic stress disorder, generalised anxiety disorder, obsessive compulsive disorder, social phobia and simple phobia) and normal controls. They found that ASI scores were greater for anxiety disorders (excluding simple phobia) in contrast to normal controls. In the same study, they [72] also compared ASI scores between anxiety disorder (excluding panic disorder) and panic disorder patients. Their results showed that ASI scores were significantly more elevated in panic disorder than the other anxiety disorders, except for post-traumatic stress disorder (PTSD). There were, however, trends for higher ASI scores in the panic disorder group in contrast to the PTSD group.

Schmidt, Lerew and Jackson [73] confirmed the above finding in a prospective study using a larger population (i.e., $n = 1401$), followed over a brief period of time (i.e., 5 weeks). Retrospective studies also show links between high anxiety sensitivity and anxiety disorders (e.g., [74]). High scores on the ASI are also predictive of panic attacks ([75, 76]) and agoraphobic avoidance in individuals with panic attacks that are not frequent enough to be diagnosed as panic disorder [76]. The authors of these studies suggest that anxiety sensitivity is not only predictive of panic disorder with agoraphobia; other types of anxiety disorders may also be influenced by this factor.

A recent meta-analysis also examined the relationship between anxiety sensitivity and panic disorder, generalised anxiety disorder, specific phobia, social phobia and agoraphobia,

obsessive–compulsive disorder, post-traumatic stress disorder and depression [77]. The study revealed that anxiety sensitivity was higher in individuals suffering from post-traumatic stress disorder, generalised anxiety disorder and panic disorder. Moreover, individuals with depression, social phobia and obsessive–compulsive disorder had intermediate levels of anxiety sensitivity, while those with specific phobia had lower levels of sensitivity. Finally, the author found that the average anxiety sensitivity levels associated with each of these disorders was significantly higher than the average level found in the community. Another meta-analysis also found that anxiety sensitivity was significantly higher in individuals with anxiety disorders than in nonclinical control groups [78]. This study also found that individuals with panic disorder and post-traumatic stress disorder had higher levels of anxiety sensitivity than their counterparts suffering from other anxiety disorders. However, this meta-analysis did not replicate Naragon-Gainey's findings, indicating varying levels of anxiety sensitivity among the other anxiety disorders. These results suggest that anxiety sensitivity is a common feature of numerous psychological disorders.

Anxiety sensitivity may also interact with other conditions. For example, a recent study found that among regular smokers with panic disorders, a high level of anxiety sensitivity combined with a high level of smoking rate significantly predicted more agoraphobic avoidance, more anticipatory anxiety (i.e., worry about interoceptive cues) and more symptoms of anxiety (e.g., feeling dizzy) [79].

Findings support a relationship between change in anxiety sensitivity and outcome in panic disorder with agoraphobia [80]. Similarly, increased anxiety sensitivity has been detected as a negative predictor of response to cognitive behaviour therapy (CBT) [81]. In addition, a change in ASI scores, after a 50-minute intervention designed to reduce anxiety sensitivity (i.e., computer-assisted psychoeducation and interoceptive exposure), was found to facilitate change in symptoms of depression, anxiety and worry [82]. Finally, high ASI scores at the end of CBT for panic disorder with agoraphobia predict relapse better than alternative measures (e.g., [81, 83]).

Individuals with high anxiety sensitivity are more likely to develop other problems as well, such as chronic pain [84, 85], alcoholism [86, 87] and depression [88] to name a few. Asmundson and colleagues [84] reported that patients with recurring headaches demonstrated scores on the ASI that approached or even exceeded scores detected in anxiety disorders. Similarly, Taylor and associates [88] detected high levels of anxiety sensitivity in individuals with depression. Scores on the ASI were compared for patients suffering from panic disorder, major depression, or both. A principal components analysis revealed three factors of anxiety sensitivity: fear of publicly observable arousal-related reactions (i.e., belief that anxiety sensations have harmful social consequences), phrenophobia (i.e., belief that anxiety sensations have harmful psychological consequences) and fear of somatic sensations (i.e., belief that anxiety sensations have harmful somatic consequences). The findings revealed that subjects with major depression and no comorbid panic disorder presented with high scores on the ASI. High scores were mainly attributable to the phrenophobia (i.e., fear of concentration difficulties and cognitive dyscontrol; belief that difficulties can lead to insanity or mental incapacitation). The findings further showed that this dimension was depression-specific. This is understandable since individuals suffering from depression may have difficulty concentrating and

making decisions [88]. Schmidt, Lerew and Joiner [89] did not arrive at the same conclusions but they found that high scores on the ASI were more likely to exacerbate depressive symptoms in the context of anxiety. Finally, Samoluk and colleagues [86] confirmed previous research (e.g., [87, 90]) by demonstrating the important role anxiety sensitivity has on alcohol consumption. Participants with high anxiety sensitivity were more likely to consume greater amounts of alcohol in solitary situations than those with low anxiety sensitivity or individuals drinking in a social context. It may be suggested that individuals with high anxiety sensitivity drink more in order to prevent physical symptoms of anxiety.

Anxiety sensitivity seems to originate from environmental [91, 92] and biological [91] factors. With regards to environmental factors, expectancy theory postulates that anxiety expectancy stems from learned experiences that a given stimulus will generate anxiety or fear [91]. Nevertheless, a person may have never experienced anxiety in a particular situation, but come to anticipate it after witnessing someone else (e.g., a family member) having a panic attack. In fact, Donnell and McNally [92] found that two-thirds of participants with high anxiety sensitivity had never suffered from a panic attack. However, those with high anxiety sensitivity were more likely to have a personal and family history of panic. In addition, Schmidt and colleagues [73] found that anxiety sensitivity predicts the development of panic and other anxiety symptoms, independently of history of panic and trait anxiety. Anxiety sensitivity may be learned through parental reinforcement of sick-role behaviour related to physical symptoms rather than anxiety-related symptoms, as suggested by the findings of a retrospective study [93]. Parental reinforcement may have led to dramatisation about the occurrence of bodily symptoms. These findings parallel Clark's [94] cognitive model of panic, which posits that the development and maintenance of panic arise from a fear that bodily sensations will lead to harmful consequences. These results suggest that anxiety sensitivity is a predisposing biopsychosocial factor to developing panic.

The above findings demonstrate that although anxiety sensitivity has been mostly studied and linked with anxiety disorders, catastrophic expectations with respect to physical symptoms may also extend to other psychological problems. The relationship between anxiety sensitivity and other disorders should be further studied and examined in relation to anxiety disorders. Moreover, Olatunji and Wolitzky-Taylor [78] suggest that different anxiety sensitivity components may be related to different anxiety disorders. It may be suggested that addressing patients' sensitivities to anxiety may help them gain a better understanding regarding some of the factors that contribute to their clinical disorder. Exposure therapy may function as a reality test for such individuals. Exposing oneself to the feared stimulus will gradually disconfirm previous negative expectations related to the consequences of anxiety sensations since the feared outcome will not occur (e.g., [69]). Cognitive techniques [95] may also influence patients into modifying their expectations or beliefs regarding the sensations of anxiety for these cognitions to become more realistic.

4. Conclusion

In light of this review, four main conclusions may be drawn. First, it appears important to measure the different types of expectations (i.e., prognostic, process, and anxiety expectations; anxiety sensitivity) to determine their level of contribution to the development and/or maintenance, and to the outcome of anxiety disorders. Second, future research could explore the extent to which the treatment's failure in modifying clients' initial low expectancies has an influence on therapeutic gain. Third, methodological flaws (e.g., the use of retrospective measures; confusion among constructs; the use of single time measures) exist in numerous studies on expectancies [2] and should be addressed to clarify the role of process and prognostic expectancies in clinical disorders, and more specifically, anxiety. Finally, studies have also suggested possible links with other clinical disorders. It appears equally important to measure these expectancies when treating other psychological difficulties since expectancies may be contributing risk factors in the development and/or maintenance of these other problems as well.

Measuring expectations in patients ready to begin therapy may provide valuable information regarding their beliefs about their prognosis and on the process and procedures of therapy [46]. Such expectations will not only reveal information about patients' perspectives on the therapy and on their outcome; knowledge may also be gained on whether their expectations are realistic or correspond to the therapy they will undergo.

Findings have been reported on prognostic and process expectations that demonstrate important implications for psychotherapy. However, future research should not only focus on identifying and addressing patient expectations prior to therapy; expectancies should also be addressed throughout therapy. Identifying and discussing these expectations and following their evolution may shed some light on why some individuals seek help whereas others do not; who will continue or discontinue therapy; and which clients will improve following therapy. Moreover, since process expectations comprise two major categories (i.e., procedures of therapy and participant roles) that have been traditionally assessed using different measures (see [39]), it would be important to evaluate this type of expectation distinctly in order to gain more information on clients' pre-therapy perceptions. Prognostic expectations may also be assessed by examining both overall and specific expectancies of symptom reduction. Most studies have focused on general expectancies of therapeutic outcome. By identifying patients' beliefs regarding the reduction of specific symptoms, therapists may be in a better position to address these expectations early on in therapy. Finally, few studies have explored the relationship between expectations, and satisfaction and treatment adherence. Future studies should examine these relationships in order to gather information that will facilitate the use of treatments with fewer dropouts, greater in-session and between-session compliance and higher satisfaction during therapy and at the end of treatment.

Several procedures could be used to resolve some of the methodological shortcomings of previous studies. These may involve (a) utilising two distinct measures to assess prognostic and process expectations [10]; (b) administering questionnaires that assess prognostic expectations related to distinct aspects of symptomatology and treatment efficacy; (c) assessing

process expectations linked to distinct components of therapy; (d) distinguishing the effects of the different expectancies on therapeutic outcome, as measured by change in symptoms, satisfaction and compliance; (e) examining the impact of cognitive shifts in expectations from pre-therapy to early stages of therapy on outcome and (f) assessing expectations in a homogeneous clinical population (as opposed to a non-clinical population, such as students).

Pretreatment expectations may also act as predictors of clinical syndromes. According to Reiss's expectancy theory [15], elevated sensitivities and negative expectancies are more likely to contribute to phobic avoidance behaviour and to the development of psychopathology. Prior to treating clinical disorders, it would be beneficial to identify expectancies and sensitivities in order to deal with them during therapy.

Overall, when confronting a situation, individuals bring the personal expectations they have acquired from past experiences. Patients entering into the mental health care system may possess numerous expectations with respect to their symptoms and symptom improvement, services being offered, therapy, their own behaviour and attitude, as well as that of the mental health care worker, and the expertness, attractiveness and credibility of the therapist treating them. Seeking mental health services may generate anxiety for most. Some of their anxiety may be fuelled by personal expectations. Unfortunately, patient expectancies are frequently overlooked. Identifying and discussing patient expectancy beliefs during the initial assessment and initial treatment sessions may minimise fears with respect to psychotherapy and increase treatment compliance and satisfaction. A pre-therapy orientation video, similar to that of Zwick and Attkisson [56, 57], may be developed (also refer to [55] and [3]). As demonstrated by Reis and Brown [96], this video may be short (i.e., 12 minutes) and presented in the waiting room. However, the scope of the video may be expanded beyond the goals and process of therapy. Issues related to prognosis and the clinical disorder may also be included. One of the important objectives of the video would be to replicate the Deane et al. [55] finding of alleviating patients' worries about undergoing psychotherapy. However, the video should also address patient expectations with respect to all aspects of the treatment and their problems.

Another recommendation with regards to therapy may be to dedicate the first two sessions at identifying patients' expectations and their treatment objectives, and then engaging in a discussion about them (e.g., [97, 98]). Patients should be encouraged to discuss what they want from the therapy and/or therapist. After having identified the different types of expectations, information may be provided in order to cover the four main types of expectancies: 1) prognostic, 2) process, 3) anxiety expectancy and 4) anxiety sensitivity. Initial negative beliefs on the efficacy of the therapy, incongruent expectations on client/therapist roles and the procedures of therapy and catastrophic beliefs regarding the symptoms should also be addressed. These information sessions may provide patients with an opportunity to modify their initial expectations to correspond with the therapy that would be offered. Additionally, by providing information early on in therapy with respect to treatment success, process and procedures and their symptoms, patients' motivation and compliance may be enhanced. Fears related to their clinical disorder and to therapy may also be diminished. It is the role of the therapist to explain to the clients the impact of expectations on treatment and on their clinical disorder. It is also important that clients understand that their expectancies may shift in a

positive direction during therapy. Conversely, if the treatment does not succeed in changing patients' initial negative expectancies, they may come to realise that another therapy would be more suitable for their needs. It is the role of the clinician to suggest or offer, when necessary, alternative treatments that could meet their clients' expectations.

Summary of recommendations	
Methodological recommendations	<ul style="list-style-type: none">• Utilize two distinct measures to assess prognostic and process expectations• Administer questionnaires that assess prognostic expectations related to distinct aspects of symptomatology and treatment efficacy• Assess process expectations linked to distinct components of therapy• Distinguish the effects of the different expectancies on therapeutic outcome, as measured by change in symptoms, satisfaction and compliance• Examine the impact of cognitive shifts in expectations from pre-therapy to early stages of therapy on outcome• Assess expectations in a homogeneous clinical population
Clinical recommendations	<ul style="list-style-type: none">• Assess expectations before and throughout therapy• Use a short pre-therapy orientation video, which may be presented in the waiting room• Dedicate some in-session time at identifying and discussing patients' expectations and their treatment objectives• Suggest or offer, when necessary, a treatment that would better suit the clients' expectations

Table 2. Summary of recommendations

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