Illness attributions among ethnic minorities: assessment and clinical relevance
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Three decades of research into lay explanations of mental illness: a systematic review

Abstract

Patients’ views on illness causation (illness attributions) are thought to be inherently unstable cognitions that may affect health behaviors, treatment process, and outcome. Attempts to test these assumptions have resulted in a large, but hardly conclusive body of literature. The present paper provides a systematic, interdisciplinary review of 69 empirical studies to examine the instability of illness attributions, as well as their association with different clinically relevant variables, including, coping, help seeking, adherence, therapeutic alliance, treatment satisfaction, outcome and drop-out. Findings underscore the unstable nature of patients’ attributions in and outside the treatment context. In general, illness attributions seem to be associated with help-seeking and coping behaviors. However, the evidence is rather equivocal with respect to the impact of illness attributions on treatment process and outcome. The literature is also inconclusive as for the mechanisms through which illness attributions may affect outcome. Findings are discussed in the context of the existing theoretical models and new directions are proposed for theory, research and practice.
Introduction

In recent years, there has been a growing emphasis on patient perspective and consumer satisfaction in mental health care. At the heart of this approach, lies the assumption that patients’ views on their illness (illness beliefs), particularly their views on illness causation (illness attributions), are of fundamental importance for their treatment preference and outcome. Nevertheless, the body of empirical evidence in support of this assumption is rarely documented in a systematic fashion. Furthermore, although illness attributions have been the subject of studies within different scientific disciplines, past endeavors have failed to generate an interdisciplinary overview of the available evidence, based on a careful integration of theoretical models and empirical findings. To this end, the present paper aims to systematically review the evidence on the nature of illness attributions, and their influence on illness behaviors and treatment outcome among patients with psychiatric disorders.

In the past thirty years, two dominant theoretical models have emerged, linking patients’ attributions to illness behavior and treatment outcome. The first model, the Explanatory Model Framework (Kleinman, 1980, 1988), has been widely applied in the fields of medical anthropology and transcultural psychiatry. Kleinman proposed that individuals (e.g., patients, their family or practitioners) tend to construct explanatory models (EMs), when facing a specific episode of illness. These models are anchored in broader cultural beliefs about health and illness, and are held by all patients and practitioners in all cultures and societies. Structurally, EMs consist of different components/cognitions, each pertaining to a different aspect of illness, i.e., (1) etiology (attributions), (2) time and mode of onset, (3) pathophysiology (physiological mechanisms underlying the illness), (4) course of illness (severity and degree of chronicity), and (5) treatment. In reality, however, lay EMs often lack one or more of these components, and are characterized by vagueness, multiplicity of meanings and diffuse boundaries between beliefs and experiences (Kleinman, 1980). Past research supports this observation by emphasizing the uncertain, at times even, inconsistent nature of EMs, which patients often hold simultaneously (Williams & Healy, 2001). Nonetheless, EMs are thought to serve a number of key functions for patients and their families. They project personal and social meaning on the experience of illness, guide and evaluate treatment choices, and provide an idiom through which the experience of illness is communicated to others.
A similar theoretical approach is evident in the *Self-regulation Model* (Leventhal, Diefenbach, & Leventhal, 1992; Leventhal, Nerenz, & Steele, 1984), which has been mostly dominant in the domain of health psychology. This model seeks to understand how people adapt to their illness, which procedures they follow to cope with their symptoms, and how they evaluate coping outcomes. The central assumption of this model is that individuals are rational actors, whose behaviors aim to improve their current health towards a desirable health state. When confronted with a symptom or health threat, individuals construct *cognitive representations* of illness. In line with the Explanatory Models Framework, these illness representations consist of beliefs regarding five different domains of illness: (1) antecedent causes (attributions), (2) identity (the disease label and its symptom indicator), (3) physical, social, and economic consequences, (4) time-line (acute, chronic or cyclic), and (5) potential for cure and/or control. Based on an initial representation of illness, a coping or help-seeking strategy is applied, which will be subsequently evaluated to assess whether it has generated the desirable outcome. If need be, the outcome evaluation is then used to adjust the initial representations, which in turn bring about new coping strategies.

Despite conceptual and terminological inconsistencies between the two models, there is some degree of correspondence between their central assumptions. For instance, both models ascribe a similar structure to illness beliefs, with illness attributions as an overlapping and important component. Moreover, both models either acknowledge, or explicitly postulate a number of hypotheses regarding the nature of illness beliefs, including illness attributions, and their significance for health behavior and treatment outcome. First, both models view illness attributions as inherently unstable. Often, they are constructed in a specific context to cope with specific symptoms. As the context changes, for example through changes in symptom severity or processing of new information from social network or media, illness attributions are prone to alter accordingly. This is particularly likely to occur in the treatment context, where patients may be exposed to professional attributions of practitioners. Kleinman (1980) hypothesized that patients may subsequently reject, assimilate, or integrate the professional attributions in their existing views, or even develop new attributions as a result.

The second common hypothesis pertains to a potential effect of illness attributions on coping and help-seeking behavior. Postulating this effect implies that illness attributions are capable of informing a specific choice of coping and treatment, which corresponds with the nature of those attributions. Thus, a patient
who attributes his or her symptoms to a physical condition should be more likely to seek medical treatment than psychotherapy. Although the self-regulation model assumes a rather direct causal link between attributions and help-seeking, Kleinman (1980) argued that this relation can be affected by a host of demographic factors, such as age, gender, social economical status, and available health care options.

Third, illness attributions are assumed to affect treatment process and outcome. Kleinman (1980) hypothesized that treatment effect will be greater, when patients and practitioners hold similar attributions of illness. When discrepancies arise between the dyads, treatment strategies will make no sense to patients, resulting in non-adherence, dissatisfaction, drop-out or poor treatment outcome. This possibility is also acknowledged by Leventhal and colleagues, although it does not constitute a central element in their model. Elaborating Kleinman’s hypothesis further, one may also assume that discrepancy between illness attributions of patients and practitioners will similarly affect the working alliance. Bordin (1979) conceptualized working alliance as a multi-dimensional construct, consisting of congruence on goals and tasks of therapy, as well as the quality of the bond between patient and practitioner. It seems plausible to assume that congruence between illness beliefs of patients and practitioners is likely to have an effect on all these components.

The present study aimed to test these three hypotheses by providing a systematic review of the available empirical work in the field of mental health care. Within the past three decades, the concept of illness attributions has been widely investigated within different scientific disciplines. This has resulted in a vast, but largely disintegrated body of literature, which is hardly conclusive. The present review distinguishes itself from previous works by applying an interdisciplinary focus (Lobban, Barrowclough, & Jones, 2003), and by explicitly focusing on the relation between illness beliefs and clinically relevant variables, such as treatment adherence and outcome (Prins, Verhaak, Bensing, & van der Meer, 2008).

Method

Search strategy
A computer-assisted search of the databases PsychINFO, Academic Search Premier, PubMed, ScienceDirect, Social Science Citation Index, and Sociological
Abstracts was performed with the following search terms: ‘explanatory models’ AND ‘illness’, ‘illness beliefs’ AND ‘mental’, ‘health beliefs’ AND ‘mental’, ‘patient(s) attitude(s)’ AND ‘mental’, ‘illness perceptions’ AND ‘mental’, ‘illness representations’ AND ‘mental’, ‘illness attributions’ AND ‘mental’, and ‘illness cognitions’ AND ‘mental’. Searching was continued, using the ‘snowball method’; the references of relevant articles were screened for potential hits.

**Inclusion and exclusion criteria**

Studies were eligible for inclusion, if they met the following criteria: (a) studies should focus on the instability of illness attributions, or examine their association with health behavior, treatment process or outcome among patients with a mental illness (b) studies should report original empirical findings, and be published in a peer-reviewed journal between 1980 and 2010, and (c) articles should be written in English. Studies on medically unexplained symptoms were also included, given the fact that these symptoms are often treated in mental health sector. In order to ensure the interdisciplinary nature of the review both quantitative and qualitative studies were selected.

Studies were excluded, if they: (a) focused on illness attributions of patients with a medical condition, (b) solely described illness attributions of a cohort, with no attention to additional variables, (c) focused on insight rather than attributions (d) were case-studies, and (e) assessed illness attributions among individuals, not suffering from an illness at the time of the study. The last criterion was deemed important, as illness attributions of the general population may be quite different from those held by patients (Godoy-Izquierdo, Lopez-Chicheri, Lopez-Torrecillas, Mercedes, & Godoy, 2007; Holliday, Wall, Treasure, & Weinman, 2005; Patel et al., 1997), and are clinically less relevant.

**Study selection**

The selection of eligible studies was conducted in two phases. In the initial phase, all articles were screened, based on their title and abstract. Studies, which were excluded at this stage, were focused on physical conditions, had used non-patients as participants, were not published in a peer-reviewed journal, or were written in a language other than English. In the second phase, the inclusion criteria were applied to the entire text of the articles.
Data extraction and analyses
Data were extracted from the selected studies with regard to country, sample characteristics, diagnosis, research type and design, study purpose, measurements and main findings. These data were subsequently summarized and tabulated. The studies were then grouped according to themes, relevant for the purpose of the review. The themes corresponded to the three hypotheses, described previously, and included: stability of illness beliefs, coping, help seeking, treatment adherence, therapeutic alliance, treatment satisfaction, outcome, and drop-out. Occasionally, a reviewed study had focused on several themes. Hence, some studies have been used on more than one occasion.

Results

Study selection and characteristics
The search strategy generated a list of 3697 articles. After eliminating duplicate hits and screening of titles and abstracts, a total of 390 studies were selected for further consideration. Upon screening the entire texts of these articles, 53 studies were found eligible for inclusion. Applying the snowball method resulted in an additional list of 16 articles. Thus, a total of 69 studies were included in the review.

The majority of studies were conducted in Europe (53.6%) and North America (29.0%), while studies from Asia (8.7%), Africa (7.2%), and Oceania (1.4%) were marginally represented. Twenty-one studies (30.4%) had incorporated qualitative methods, and 48 were quantitative in nature, of which 29 (60.4%) were cross-sectional, 13 (27.1%) were prospective and 6 (12.5%) were randomized controlled trials. Participants were mainly diagnosed with mood (42.0%), somatoform (24.6%), psychotic (14.5%), and anxiety disorders (11.6%). The majority of the quantitative studies (84%) had employed an existing, validated measure of illness attributions. In the remaining cases, a measure was especially developed for the purpose of the study.

Below, the results of the review are presented for the themes, corresponding to the hypotheses, including stability of illness attributions, coping, help seeking, treatment adherence, therapeutic alliance, treatment satisfaction, outcome, and drop-out.
**Stability of illness attributions**
Fourteen studies had focused on changes in illness beliefs, of which four were conducted among patients who received no formal treatment, and 10 among those in treatment.

**Stability of illness attributions outside the treatment context**
Thus far, the stability of attributions outside the treatment context has only been investigated among patients with depression. Using different instruments, two questionnaire studies found that illness attributions were highly stable across periods, ranging from two (Fortune, Barrowclough, & Lobban, 2004) to eight weeks (Manber et al., 2003). In contrast, two qualitative studies found a considerable degree of instability in illness attributions. Williams and Healy (2001) interviewed patients twice within a two-week period, and found great inconsistencies in their attributions, which even emerged in the same interview. Similarly, in a retrospective study, patients reported to have frequently adjusted their attributions in response to their mental health deterioration (Okello & Neema, 2007). The discrepancy between these research findings may be in part due to the type of instruments that have been used in different studies. Specifically, interviews may allow for a greater variation in responses, whereas questionnaires, by virtue of their forced response options, may generate more stable results. This assumption is in line with the observation that illness beliefs that are reported in response to open ended questions show greater discrepancy over time than those elicited through questions with fixed response options (McCabe & Priebe, 2004a).

**Stability of illness attributions during treatment**
Turning to belief instability in the context of treatment, the literature seems to be more consistent. Eight studies found attributions to change during treatment. Van Dulmen et al. (1995) found somatic attributions to decrease and psychological attributions to increase following a series of consultations with GPs among patients with medically unexplained symptoms. Similarly, a number of qualitative studies suggested that patients’ attributions often come to resemble those of practitioners (Bäärnhielm & Ekblad, 2000; Nolan & Badger, 2005; Schreiber & Hartrick, 2002), and that patients engage in a process of re-evaluation of their original beliefs in order to include (integrate) the beliefs of their therapists (Bäärnhielm, 2000). In contrast, another study found that patients, who were categorized as having either somatic or psychological attributions prior to treatment (somatizers vs.
psychologizers), mostly remained so at one year follow-up (Garcia-Campayo, Larrubia, Lobo, Perez-Echeverria, & Campos, 1997). However, the analysis was potentially insensitive to belief change, due to its use of categorical data. Attributions are less likely to change during treatment among older patients (Garcia-Campayo et al., 1997), and more likely to do so when practitioners correctly assess these beliefs during consultations (Van Dulmen et al., 1995)

A clinically relevant issue is whether treatment can induce change in patient’s attributions of symptoms. Most studies, that have tackled this question, revealed that illness attributions tend to change significantly more as a result of psychological interventions than no treatment control or care as usual. For instance, psycho-education has been shown to alter illness attributions in hypochondriasis (Avia et al., 1996; McKeon & O'Loughlin, 1993), as does cognitive behavioral therapy (CBT) in chronic fatigue syndrome (Sharpe et al., 1996). In two studies, treatment did not seem to have an effect on attributions of depression. However, one study involved only a minimal intervention (i.e., educational leaflets; Jacob, Bhugra, & Mann, 2002), and another was conducted among older patients with relatively more firmly held beliefs (Edlund, Fortney, Reaves, Pyne, & Mittal, 2008). It is not clear whether the nature of the diagnosis affected the stability of attributions in the context of treatment; whether attributions of patients with depression are more resistant to psychological interventions.

In sum, illness attributions appear to change both in and outside the context of treatment. However, findings regarding belief change during treatment are more robust.

Coping

Four studies had investigated the association between illness attributions and coping behavior, all of which found specific relationships between the two concepts. Belief in biological causes of somatoform symptoms was related to a need for medical examination, bodily screening (Rief, Nanke, Emmerich, Bender, & Zech, 2004), and seeking social support (Heijmans, 1998). Psychological attribution, on the other hand, seemed to be more associated with venting of emotions, behavioral disengagement, and alcohol use in case of somatoform symptoms (Rutter & Rutter, 2002), and with venting of emotions and self-blame in depression (Brown et al., 2007). Patients with external attributions of symptoms tended to apply more emotional focused coping, such as restrain and positive reinterpretation (Rutter & Rutter, 2002).
Thus, the content of illness attributions appears to correspond with the choice of coping behaviors. However, a major problem with the current literature is the cross-sectional nature of the studies, which makes it impossible to infer causal relations between attributions and coping behaviors. Moreover, comparisons between research findings are complicated by the use of different coping instruments across studies.

**Help seeking**

The review identified eight studies that focused on the relation between illness attributions and treatment preference, and 23 studies, investigating the actual help-seeking behavior. Whereas the first group of studies found some degree of correspondence between illness attributions and treatment preferences (Adewuya et al., 2009; Bhui, Rudell, & Priebe, 2006; Givens, Houston, Van Voorhees, Ford, & Cooper, 2007; Karasz, Sacajiu, & Garcia, 2003; Kokanovic, Dowrick, Butler, Herrman, & Gunn, 2008; Lloyd et al., 1998; Navon & Ozer, 2003; Sayre, 2000), attributions seem to have a more complex relationship with the actual help-seeking behavior.

Fifteen studies found a relationship between specific types of causal attributions and help seeking. For example, attribution of symptoms to physical causes was associated with the intention to consult a GP (Burr & Chapman, 2004), and the actual consumption of medical care (Edwards, Tinning, Brown, Boardman, & Weinman, 2007; Johnson et al., 2000; Rief et al., 2004; White et al., 2002). On the other hand, patients with psychological attributions were more likely to seek psychological services (Gesler & Nahim, 1984; Karasz, 2008; Scheeres, Wensing, Severens, Adang, & Bleijenberg, 2008; Vanheusden et al., 2009), while attributing symptoms to external causes (e.g., poverty) was mostly associated with the refusal of services (Anderson et al., 2006). Similarly, supernatural attributions were more prevalent among those who consulted alternative or traditional healers (Chiu, Ganesan, Clark, & Morrow, 2005; Patel, Gwanzura, Simunyu, Lloyd, & Mann, 1995; Razali, Khan, & Hasanah, 1996; Testerman, Morton, Mason, & Ronan, 2004; Weiss et al., 1986). However, six studies failed to establish a relationship between illness attributions and help seeking. Yeung et al. (2004), for example, found that whereas social and stress related attributions were most prevalent in their depressed participants (93%), only 3.5% had sought mental health care and that the majority had consulted medical care, lay treatment or alternative healing. Similar findings have been reported in a study of causal attributions among
patients who consulted alternative and spiritual healers (Ravi Shankar, Saravanan, & Jacob, 2006). Here, the majority of patients reported psychological explanations for their symptoms, while spiritual attributions were markedly less prevalent. However, psychological attributions were also most frequently reported by their healers. Other studies have pointed to the pragmatic nature of help seeking (Dein & Sembhi, 2001; Green, Bradby, Chan, & Lee, 2006; Leavey, Guvenir, Haase-Casanovas, & Dein, 2007; Pereira et al., 2007). Patients seemed to seek whatever treatment was available and could help to reduce their symptoms. In two other studies (Okello & Neema, 2007; Saravanan et al., 2007), attributions were associated with help seeking in some, but not all cases. Remarkably, all studies that failed to find an association were either conducted in developing countries, or among immigrant populations in western countries (see above). This suggests that specific cultural or economical factors may affect the relationship between patients’ attributions and their final choice of treatment. The review identified a number of such barriers to help seeking, including, language difficulties (Chiu et al., 2005), costs and availability of preferred treatment (Chiu et al., 2005; Wong et al., 2006), and the level of cultural stigma attached to specific treatment forms (e.g., psychiatric treatments) (Okello & Neema, 2007).

In summary, illness attributions seem to be related to treatment preference and help seeking. However, patients’ treatment choice may also be affected by a host of cultural, economical and structural barriers. A word of caution is perhaps relevant. All studies, presented in this section, were cross-sectional in nature. Hence, it is premature to conclude that causal attributions determine the choice of treatment. In fact, it seems equally plausible to assume that the choice of treatment, and subsequent exposures to professional views may inform patients’ beliefs and attributions.

**Adherence**

The literature seems to be inconsistent with respect to the importance of illness attributions for treatment adherence. Results of six studies suggest that there is indeed a relationship between attributions and adherence. Attribution of symptoms to financial problems (Lynch, Kendrick, Moore, Johnston, & Smith, 2006), interpersonal difficulties (Brown et al., 2001), and supernatural causes (Adewuya et al., 2009; Razali et al., 1996) was associated with poor medication compliance. On the other hand, patients who endorsed psychological (Spoont, Sayer, & Nelson, 2005) or a combination of psychological and medical causes (Foulks, Persons, &
Merkel, 1986) had higher psychotherapy attendance rates. These results are in contrast to those of four other studies, which found no relation between causal attributions and (medication) compliance (Holzinger, Löffler, Muller, Priebe, & Angermeyer, 2002; Hunot, Horne, Leese, & Churchill, 2007; McCabe & Priebe, 2004b; Ruscher, De Wit, & Mazmanian, 1997). Ironically, one study even found that biological attributions were associated with the underuse of medication (i.e., number of missed doses) (Spoont et al., 2005). However, the study failed to apply a correction for the confounding effect of older age and lower levels of education.

In short, there is some evidence that, at least in some cases, non-medical illness attributions are related to poor medication compliance. However, the literature is limited due to its extensive reliance on cross-sectional designs and exclusive focus on compliance with medication. In fact, the review found only two studies, which had operationalized adherence in terms of treatment attendance (Foulks et al., 1986; Spoont et al., 2005). Therefore, caution is recommended when generalizing these findings to the field of psychotherapy and other non-medical interventions.

**Therapeutic alliance**

Only one study had investigated the relation between illness attributions and an aspect of working alliance. In a multi-ethnic sample of patients with schizophrenia, McCabe and Priebe (2004b) found that patients with biological explanations of symptoms had significantly higher ratings of their therapeutic relationship than those with social and non-specific attributions.

**Satisfaction**

There appears to be consistent evidence for the association between illness attributions and treatment satisfaction. Biological explanations of schizophrenia, in comparison with social and non-specific explanations, were associated with higher treatment satisfaction (McCabe & Priebe, 2004b). Satisfaction is the only clinical variable, for which the possible impact of belief congruence between therapists and patients has been examined. The literature suggests that patients’ perception of disagreement with therapists regarding the etiology is associated with lower satisfaction in chronic fatigue syndrome (Gilje, Söderlund, & Malterud, 2008; Peters, Stanley, Rose, & Salmon, 1998), and substance dependence (Karasz et al., 2004). Also, patients with a higher observer rated agreement with their therapists tended to be more satisfied with inpatient services (Callan & Littlewood, 1998).
**Outcome**

Nine studies were identified, in which the association between illness attributions and treatment outcome was examined. In six studies, this association was confirmed. Baseline attributions of symptoms to physical causes were found to predict poor outcome in CBT (Chalder, Godfrey, Ridsdale, King, & Wessely, 2003), but ironically also in pharmacotherapy (Sullivan et al., 2003), and combined CBT and pharmacotherapy (Butler, Chalder, Ron, & Wessely, 1991; Wilson et al., 1994). Also, worse treatment outcome has been reported for patients with baseline external attributions (Kennedy et al., 2006), and for those who attribute their symptoms to stable causes (Vielva & Iraurgi, 2001). In contrast, two studies found no relation between attributions and outcome. In a comparison of CBT versus relaxation training (Deale, Chalder, & Wessely, 1998), outcome was unrelated to physical attributions at pre- and post-treatment measures. In another study, providing patients with written information on the nature and etiology of depression was associated with better outcome than a no-treatment control group, without leading to observable changes in patients’ illness explanations (Jacob et al., 2002). This study, however, did not examine the relation between attributions and outcome directly.

In summary, physical or external attributions seem to predict worse outcome, regardless of treatment type. However, this literature has been exclusively concerned with either treatment of somatoform and medically unexplained symptoms or pharmacotherapy in the case of depression. Thus, no evidence is available regarding the impact of illness attributions on psychotherapy outcome in common mental disorders. In addition, the reviewers could not identify any study, which had examined the effect of patient and practitioner belief congruence on treatment success.

**Drop-out**

Two studies have focused on illness attributions in relation to premature treatment termination. Supernatural illness explanations were found to predict higher drop-out rates (Razali et al., 1996), while patients who endorsed psychological or medical attributions were more likely to terminate hospital treatment in a compliant manner than those who endorsed other causal explanations (Foulks et al., 1986).
Discussion and conclusion

The present study reviewed the empirical evidence for a number of hypotheses, derived from the Explanatory Model Framework and the Self-Regulation Model. As both models have predicted, illness attributions are generally unstable cognitions, which are particularly prone to change in the context of treatment. However, whereas illness attributions seem to be associated with coping and help-seeking behavior, evidence for their relationship with treatment process and outcome is rather inconsistent.

While the majority of the studies have found a relationship between illness attributions and help-seeking behavior, research among patients from non-western ethnic backgrounds has produced mixed findings. The reviewed literature has indicated a number of additional factors, which seem to affect the choice of treatment among non-western populations, e.g., availability and affordability of preferred services (Chiu et al., 2005; Wong et al., 2006), language barriers (Chiu et al., 2005), and cultural stigma in the case of psychiatric treatments (Okello & Neema, 2007). In addition, help seeking among non-western patients is often based on a collective decision by significant others (Bhugra, Lippett, & Cole, 1999), which may explain why patients’ own attributions are not always reflected in their help-seeking behavior.

The review is inconclusive concerning the impact of illness attributions on treatment process and outcome. First, no single study was identified, which examined the effect of patient-practitioner congruence in attributions on treatment compliance and outcome. Second, there is a high degree of inconsistency in research findings. For example, in some cases, biological attributions seem to be associated with better compliance and satisfaction with pharmacotherapy, and with worse psychotherapy outcome among patients with medically unexplained symptoms. These findings lend support to the hypothesis that congruence between patients’ beliefs and treatment rationale can positively affect the process and outcome of therapy. However, biological attributions have been shown to predict worse outcome also in pharmacotherapy. This apparent inconsistency may be explained by postulating a dual mechanism, which may underlie the effect of illness attributions (figure 1). First, patients’ illness attributions can foster a better treatment outcome to the extent they are congruent with the treatment rationale or practitioner’s beliefs. Thus, higher congruence may lead to better compliance, treatment participation and therapeutic relationship, which in turn produce better
clinical outcome. Second, illness attributions may influence the perceived personal control over the symptoms, coping and outcome, independently of the treatment type and therapist’s beliefs. For instance, biological attributions are associated with poor perceived control over the symptoms (Brown et al., 2007), which in turn may lead to poor health outcome through encouraging a passive attitude towards illness management and coping (Rutter & Rutter, 2002). The first and second mechanisms correspond more strongly with respectively the Explanatory Model Framework and the Self-Regulation Model. More research is needed to further validate these assumptions and to identify conditions under which either one of the mechanisms is more influential.

A number of limitations apply to this literature review, which may be considered in designing future studies. First, the findings are partly based on cross-sectional data, which makes it impossible to infer causal relationships between illness attributions and other variables of interest. This is particularly the case with the data on help seeking, and to a lesser degree with findings regarding coping and adherence. Second, conclusions regarding treatment adherence are almost exclusively derived from studies, focusing on medication compliance. Hence, findings cannot be generalized to adherence with other treatment modalities. Third, the studies have incorporated rather broad and diffuse categories of explanations, such as physical or social attributions, which are too general to provide adequate and specific data. For instance, family problems and perceived discrimination may both be considered social attributions, while there are fundamental differences in experiences and behaviors, which they initiate. Finally, with the exception of help-
seeking behavior, the association between illness attributions and other clinical variables have rarely been examined in the context of developing countries and among ethnic minority patients in the west. More research is required to establish the clinical relevance of illness attributions in culturally diverse populations, especially with regard to the possible impact of these beliefs on treatment outcome.

In conclusion, the available data seem to support the hypotheses concerning the association between illness attributions and health behaviors. However, the evidence is inconsistent regarding the impact of attributions on treatment process and outcome. The literature is also equivocal regarding the mechanisms through which illness attributions may affect outcome, and whether higher attributional congruence between patients and practitioners is linked to greater treatment success. Nonetheless, the findings highlight the importance of illness attributions in and outside the therapy context. Therefore, clinical practice may benefit from structural assessments of these beliefs, so that treatment can be tailored to unique views, needs and expectations of each individual patient.
References


