

# **The Relationship Between Self-Blame for the Onset of a Chronic Physical Health Condition and Emotional Distress: A Systematic Literature Review**

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### Abstract

**Objective:** Past literature presents contrasting perspectives regarding the potential influence of self-blame on adjustment to illness. This systematic literature review aimed to summarise findings from all investigations to date that have explored the relationship between self-blame for the onset of a chronic physical health condition and emotional distress. **Method:** Between November 2014 and February 2015 electronic databases were searched for relevant literature. Only those studies which assessed self-blame directly and related specifically to illness onset were included within the review. The methodological and reporting quality of all eligible articles was assessed and themes within the findings were discussed using a narrative synthesis approach. **Results:** The majority of studies found self-blame to be associated with increased distress. However, several concerns with the quality of the reviewed articles may undermine the validity of their conclusions. **Conclusions:** It is important for professionals supporting people with chronic physical health conditions to have an understanding of how of self-critical causal attributions might relate to emotional distress. Further research is required to understand the concept of self-blame, the factors that may encourage this belief and to develop reliable and valid measures of this experience.

**Keywords:** Self-Blame; Chronic Health Condition; Adjustment; Causal Attribution; Emotional Distress; Depression

## Introduction

Recent estimates suggest that 95% of the global population are affected by a physical health condition (Vos et al., 2015). Other figures state that 15-to-26 million people in England (Department of Health [DOH], 2012; National Health Service [NHS] England, 2016) and 117-to-133 million in the US (Centres for Disease Control and Prevention, 2009) live with at least one long-term physical health condition. The most common chronic conditions include cancer, cardiovascular disease, chronic obstructive pulmonary disease (COPD) and diabetes (World Health Organisation [WHO], 2014). Although less prevalent, large numbers of people are also living with conditions such as kidney disease, hypertension, stroke, epilepsy and HIV/AIDS. These conditions almost always require lifelong lifestyle and medical management and often create a variety of physical, social and emotional challenges for the person with the condition and their family (DOH, 2012; Sidell, 1997).

When faced with the diagnosis of a chronic health condition, as with any unexpected and undesirable life event, people naturally try to explain why their illness may have occurred and what factors could have played a causal role in its onset and development (Adams, Hayes & Hopson, 1976; Moos & Schaefer, 1984; Taylor, 1983). In addition, people tend to generate beliefs about the identity (characteristics and symptoms) of the health condition, its controllability, longevity and the consequences it could have for their lifestyle, relationships, identity and future (Leventhal, Brissette, & Leventhal, 2003). These beliefs, often referred to as illness representations, are heavily influenced by an individual's prior beliefs about the condition, themselves and their ability to cope with adversity and can significantly affect how they adjust to life with the condition (Lazarus & Folkman, 1984; Sensky, 1997).

People can hold a variety of beliefs about the causes of their condition, perhaps due to the uncertain origins of many chronic physical health conditions and the diversity of risk factors often associated with them (Dumalaon-Canaria, Hutchinson, Prichard, & Wilson, 2014). Consistent with evidence supporting the association between ill health and biological and lifestyle-based risk factors (WHO, 2002), people often report internal factors such as genetics and their own behaviour (e.g. smoking or unhealthy diet) to be the cause of their illness. However, other commonly reported causal attributions are not as clearly supported by medical evidence, for example stress, personality traits and external factors such as environmental pollution or God's will (Ferrucci et al., 2011; Giannousi, Manaras, Georgoulas, & Samonis, 2010; Scharloo et al., 2005; Thompson et al., 2014; Travado & Reis, 2013; Wold, Byers, Crane, & Ahnen, 2005).

Historically, researchers have been interested in the potential differential influences of forming internal and external causal attributions on adjustment to life events and ill health (Roesch & Weiner, 2001; Weiner, 1985). Abramson, Seligman and Teasdale's (1978) Model of Learned Helplessness suggests that internal attributions can be detrimental for psychological well-being and helpful coping behaviour if they threaten self-esteem. In agreement, Janoff-Bulman (1979) suggests internal attributions involving a person's character or personality traits can promote feelings of hopelessness and an inability to cope because these factors are viewed as unchangeable. Alternatively, internal attributions involving behaviour may allow a person to feel in control of what happened and therefore promote hope, self-efficacy and helpful coping behaviour (Weiner, 1985). This highlights the important distinction between locus of causality and locus of control involved when forming causal attributions: an event may be attributed to a factor internal to a person but this factor may be seen as within or outside of that person's control (Berckman & Austin, 1993; Howard, 1987, White 1991). Locus of control seems to have more influence over how people adjust to events generally (Weiner, 1985) and greater perceived control over illness onset and progression has typically been associated with psychological well-being and engagement in medical interventions and health promoting behaviour (Bauml et al., 2014; Newsom, Knapp, & Schulz; 1996; Park & Gaffey, 2007; Taylor, Helgeson, Reed, & Skokan, 1991).

Self-blame is one type of causal attribution that involves perceptions of personal control over the cause of an event and is often reported by people with chronic health conditions with reference to them becoming unwell (Arman, Rehnsfeldt, Carlsson, & Hamrin, 2001; Bennett, Laidlaw, Dwivedi, Naito, & Gruzelier, 2006; Block, Dafter, & Greenwald, 2006; Lehto, 2014; Refsgaard & Frederiksen, 2013). Self-blame involves an individual believing that an unwanted event is in some way their own fault and that they are personally responsible for its occurrence (Mantler, Schellenberg, & Page, 2003). Research exploring how people assign blame to others suggests that the blamed individual is perceived to have had control over the causal factor and its outcome, and also to have been aware of, and therefore responsible for, the potential consequences of their relationship with this causal factor (Mantler et al., 2003; Shaver, 1985; Shaver & Drown, 1986). Following these necessary prerequisites of perceived control and responsibility, judging another to be blameworthy for an event also involves a rejection of any possible justifications or excuses for the person's relationship with the causal factor. Therefore, perceptions of control may not necessarily lead to judgements of responsibility and blame which are increasingly more subjective and influenced heavily by the prior values and beliefs of the person assigning blame (Alicke, 2000; McGraw, 1987; Shaver, 1985; Weiner, 1995). Demonstrating this, Bell, Feraios and Bryan (1990) found their participants judged both a person with HIV and a person with drug-overdose symptoms to be equally responsible for their condition but were more likely to blame the latter person.

Although the above research relates to judgments of others, the same sequential decision making process involving perceived control and responsibility may also apply when forming self-blame perceptions following the diagnosis of a health condition. Taylor (1995) describes how people search for a causal explanation (the ‘how’) following a cancer diagnosis but also for the personal significance of this cause which involves questioning ‘why has this happened to me?’ and ‘who or what is responsible?’ (the ‘why’). For a person to blame themselves for becoming unwell it is again implied that the person would perceive the ‘how’ to have been controllable and themselves to have been personally responsible for exercising control over this (Rich, Smith, & Christensen, 1999; Taylor, 1995). Dirksen (1995) found support for the idea that an individual must feel responsible for a health event, and therefore have an awareness of the consequences of their actions, before they self-blame. Thirty-eight per cent of participants did not believe that they were to blame for their melanoma, despite acknowledging their purposeful frequent sun exposure, as they reported not being aware of the dangerous effects of the sun at the time.

Whether judgements of personal control and responsibility actually lead to self-blame is likely influenced by a variety of factors, such as a person’s prior knowledge of the risk factors for their particular health condition and a tendency to see oneself as in control of general and health-related events (Wong & Weiner, 1981). Cultural perspectives encouraging people to feel at fault for their actions or characteristics (e.g. belief in a just world; Lerner & Miller, 1978) and responsible for their own health promotion (DOH, 1999; Mumma & McCorkle, 1982; NHS, 2013) may play a part. People are also more likely to self-blame if they suspect that others perceive them to be blameworthy (Bresnahan, Silk & Zhuang, 2013; Chapple, Ziebland, & McPherson, 2004; Else-Quest, LoConte, Schiller, & Hyde, 2009; Gulyan & Youssef, 2010; Lobchuk, Murdoch, McClement, & McPherson, 2008; Plaufcan, Wamboldt, & Holm, 2012; Siminoff, Wilson-Genederson, & Baker, 2010).

Important for understanding how self-blame attributions might influence adjustment to illness are findings from studies exploring other-blame. Other-blame has been associated with the opinion that the blamed individual deserves punishment, more so than if they were judged only to have been in control of the cause of an event (Graham, Weiner, & Zucker, 1997; Shultz, Schleifer, & Altman, 1981). Similarly, judging a person with AIDS and lung cancer to be to blame for their condition has predicted less willingness to help that person and stronger feelings of anger and resentment compared to when only judgments of control and responsibility were made (Mantler et al., 2003). This negative emotion felt by the person assigning blame and directed towards the blamed individual is likely to increase the distress felt by the blamed individual if they are aware of the ‘blamer’s’ feelings (Siminoff et al., 2010). Therefore, self-blame could similarly affect how a

person feels and reacts towards themselves following diagnosis and therefore how they cope with changes to their health and lifestyle.

Researchers interested in the relationship between self-blame and adjustment to illness have highlighted the existence of contrasting evidence, supporting that self-blame may be associated with both psychological well-being and distress (Bennett, Compas, Beckjord, & Glinder, 2005; Glinder & Compas, 1999). This ambiguity may result from the varied methods used to measure self-blame, possibly arising from the lack of clarity about this concept within the literature and its relationship to causal attributions and perceptions of control and responsibility. In contrast to other-blame which has received substantially more research attention, there is currently no consistent or agreed definition of what constitutes self-blame and also self-blame specifically for illness onset. Several studies have employed measures of causal attributions to assess self-blame which may not be accompanied by perceptions of control, responsibility or blame itself (Christensen et al., 1999; Friedman et al., 2007, 2010; Lebel et al., 2013; Newsom et al., 1996; Plaufcan et al., 2012; Scharloo et al., 2005). Others have assessed self-blame for other aspects of the illness experience rather than its cause or onset (e.g. treatment ineffectiveness) (Aguado Loi et al., 2013; Bussell & Naus, 2010; DePalma, Rollison, & Camporese, 2011; Ibrahim, Chiew-Thong, Desa, & Razali, 2013; McSorley et al., 2014) or have measured a general tendency to experience self-blame outside of the illness context (Ali et al., 2000; Rich et al., 1999). Some have also assumed self-blame from measures that do not separate self-blame for illness onset from other related but potentially distinct constructs, such as a tendency to self-criticise or harbour feelings of guilt or shame (Condello, Piano, Dadam, Pinessi, & Lanteri-Minet, 2015; Else-Quest et al., 2009; Hommel et al., 2000; Karlsen & Bru, 2002). Some researchers have argued that these 'self-conscious emotions' naturally follow, and can therefore evidence, self-blame (Kubany & Watson, 2003). A likeness has also been suggested between Janoff-Bulman's (1979) description of BSB and CSB and guilt (involving a negative judgement of one's behaviour) and shame (preceded by a negative evaluation of one's whole self or character), respectively (Brown, 2006). However, it is reasonable to make a conceptual distinction between these emotions and self-blaming thoughts or beliefs (Duncan & Cacciatore, 2015) and especially as not all research consistently supports their coexistence (Tilghman-Osborne, Felton & Ciesla, 2008).

Given the current definitional and measurement inconsistencies surrounding self-blame for illness, the current literature review aimed to collate evidence describing the relationship between self-blame and indicators of emotional distress when this experience is measured directly and related specifically to the cause or onset of the person's health condition. Therefore, the phrase 'self-blame' was used exclusively as a search term. Each study's measure of self-blame was also carefully examined to ensure that it was related explicitly to illness cause or onset and that it

questioned beliefs about being personally to blame or at fault. It is important to note that Janoff-Bulman's (1979) differentiation between behavioural and characterological attributions has been discussed with reference to self-blame and is referred to throughout the review. They suggest an individual may perceive themselves to be to blame for the aspects of their behaviour (behavioural self-blame; BSB) or character (characterological self-blame; CSB) that they believe caused their situation. The concept of CSB, with its theorised relationship to a lack of perceived control (Janoff-Bulman, 1979), is inconsistent with theory suggesting perceived control is inherent in beliefs of other-blame and self-blame. It is possible for individuals to perceive themselves to have control over aspects of their personality, character or internal experiences (Fontaine, Manstead, & Wagner, 1993; Levy & Bayne, 2004; Williams & Penman, 2011) and therefore to have had control over them in the past. In an attempt to clarify the concept of self-blame for the current literature review it has been conceptualised as involving judgements of past control over and personal responsibility for the perceived cause of illness and its impacts on health, alongside a rejection of any justifications for self-involvement with the perceived cause. In this way self-blame can be likened to self-criticism, contrasting self-forgiveness or self-compassion whereby responsibility for an event can be assumed alongside acceptance and without self-resentment (Romero et al., 2006). For professionals supporting people living with long-term health conditions it is important to have an understanding of the experience of self-blame and whether it can be associated with helpful coping strategies and psychological adjustment or with adjustment difficulties and psychological distress. With this understanding professionals can have greater confidence in how they react to and support people experiencing these beliefs. Creating clarity around the concept of self-blame for illness onset and its appropriate measurement also informs clinical discussions and the design of future research in this area.

## **Method**

### **Search Strategy**

Between November 2014 and February 2015 the following electronic databases were searched for relevant literature via the EBSCOhost (<https://www.elsevier.com/locate/ehost>) service: Cumulative Index to Nursing and Allied Health Literature (CINAHL Complete), MEDLINE, PsycINFO and PsycARTICLES. Using this set of databases increased the likelihood of identifying relevant research published by a wide range of psychological, medical and nursing and allied health professionals. An initial scoping search of the literature within these databases identified relevant search terms to identify articles discussing people's beliefs related to the cause of their health condition. The search terms for several chronic physical health conditions were based on conditions defined as 'noncommunicable' by the World Health Organisation (2014) and the most prevalent

long-term physical health conditions outlined by the Department of Health (2012). Conditions were also researched on an individual basis to ensure that they 1) involve mainly physical, rather than cognitive symptoms, 2) are not caused exclusively by genetic abnormalities or injury from a discrete accident and 3) potentially require long-term medical/physiological and psychosocial management. Therefore conditions such as Dementia, long-term mental health conditions, traumatic brain injury and acquired physical disability were not included within the current review.

The following terms were searched for within an article's title, abstract and keywords: chronic OR long-term OR disease\* OR ill\* OR stroke OR heart OR cardiovascular OR kidney OR cancer OR diabet\* OR epilep\* OR pain OR fatigue OR arthriti\* OR COPD OR pulmonary OR hypertension OR Parkinson\* OR bowel OR hearing OR lupus OR psoriasis OR endometriosis OR "multiple sclerosis" OR MS OR HIV OR AIDS OR hepatitis OR herpes AND "Self-blame"<sup>1</sup>. The chosen search terms were deemed sufficiently thorough after trial database searches using possible alternative descriptors of "self-blame"<sup>2</sup> and the names of additional health conditions<sup>3</sup> did not yield any additional relevant articles. Thorough reference list searches of all obtained articles was the method used to identify any additional relevant articles discussing additional specific health conditions not explicitly identified within the search terms.

## **Selection Strategy**

**Inclusion and exclusion criteria.** In the initial phase (A) titles and abstracts were reviewed for topic and source relevance following removal of duplicate literature. Inclusion criteria were broad at this stage to capture all relevant literature. Literature was included if it was written in English, involved participants over 18, employed a quantitative methodology and measured the causal attributions participants made about their own chronic physical health condition. Literature was excluded if it fell into any of the following source categories: a research article which was not peer reviewed; a review article; unpublished research; a dissertation/thesis; a discussion article or book chapter not describing a piece of research; a case study; conference proceedings; a book review or a news article. In the second phase (B) of selection the full text articles were scrutinised by reviewing information about their participant sample and methodology. Articles were eligible for inclusion if they directly measured self-blame related explicitly to the cause or onset of the participant's condition and explored its relationship to at least one measure of emotional/psychological distress or well-being.

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<sup>1</sup>" " indicates a phrase search; \* indicates truncation

<sup>2</sup>Attribution, belief, responsibility, accountable, fault, self-criticism, guilt and stigma

<sup>3</sup>Hypothyroidism, atrial fibrillation, angina, osteoporosis, asthma, crohns, colitis and glaucoma

## **Data Extraction and Quality Assessment**

Information was extracted about each study's design, sampling methods, participants, analysis methods, tools used to measure self-blame and additional variables and the main findings, limitations and conclusions regarding the relationship between self-blame and distress. A quality assessment was applied by the researcher to all included articles to assess their reporting and methodological quality. In the absence of a single reliable and valid checklist suitable for assessing the specific characteristics of the included studies (Sanderson, Tatt, & Higgins, 2007), the employed checklist was designed by the researcher and drew influence from three currently available checklists (Downs & Black, 1998; National Institute for Health and Care Excellence [NICE], 2012; STROBE Statement, 2007). When a study fulfilled any of the 38 criteria on the checklist a score of '1' was assigned. A total score was calculated for each article ranging from zero (lowest quality) to 38 (highest quality). Regardless of quality score all eligible studies were included in the review given that they met selection inclusion and exclusion criteria. The checklist was employed thereafter to detect any potential sources of bias which might influence the interpretation of the studies' findings. An independent rater also assessed the quality of four randomly selected articles (30% of the reviewed articles) using the designed checklist. The researcher and independent rater agreed on 98% of the quality indicators, ranging from 90% to 97% across the four articles. Disagreement was present for 10 items across the four studies with no notable pattern in the indicators exhibiting disagreement.

## **Data Synthesis**

A narrative synthesis was employed to summarise the studies' findings and discuss patterns and themes within the reviewed literature. A meta-analysis was inappropriate due to the heterogeneity in study design, assessment tools used and participant characteristics (Mays, Pope, & Popay, 2005; Popay et al., 2006; Snilstveit, Oliver, & Vojtkova, 2012). The current review was written in accordance with the PRISMA statement (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009) to ensure certain reporting standards were met.

## **Study Selection Procedure**

The application of inclusion and exclusion criteria to articles obtained from database searches is outlined in Figure 1. A total of 1015 articles were identified from the four database searches. After applying search limiters to exclude those articles either not written in English or peer reviewed, 875 articles remained. Following the removal of duplicate literature and application of initial inclusion and exclusion criteria A, 114 full text articles were accessed. Eleven studies, published between 1987 and 2013, met inclusion criteria B and were reviewed. Within the reference

lists of these eligible articles a further 28 potentially relevant articles were identified. None met the review's inclusion criteria following full text exploration.

## **Results**

### **Methodological Quality Overview**

Researcher rated quality assessment scores ranged from 19 to 32 with no studies obtaining the maximum score of 38. A single study scored below 20, nine studies scored between 20 and 30 and one obtained a score greater than 30. Therefore the reporting and methodological quality of all reviewed articles could have been improved. There were several quality indicators absent within the reviewed studies which potentially influences the reliability and validity of their reported findings. The majority of studies did not report using reliable and valid measures of self-blame and emotional distress/ well-being and employed sampling methods which did not allow participants to be considered representative of the population from which they were drawn. Some failed to clearly report their participant inclusion and exclusion criteria which conceals the population of people the studies' findings might reliably be applied to. It was questionable whether several studies were adequately powered to detect significant results given the lack of information provided regarding the reason for the studies' sample size. Additionally, it was unclear in several studies whether sources of bias had been accounted for within data analysis procedures (e.g. abnormally distributed data). Finally, several studies did not acknowledge study limitations and discuss their potential influence on how findings should be interpreted, potentially encouraging misleading conclusions.

### **Overview of Included Studies**

**Sample characteristics.** Table 1 provides brief information about all reviewed studies. Most participants within the studies were white/Caucasian and living in the Western hemisphere, although the generalisability of findings cross-culturally is enhanced by the research spanning several continents. Forty-six percent of studies included both male and female participants and taking into account the study sample sizes of those recruiting males or females only, both genders are relatively equally represented within the review. Working age and older adults formed the study samples with mean ages ranging from 35 to 68 years. This is consistent with the increased risk of having a chronic physical health condition with age (WHO, 2011). The majority of participants had undertaken at least high school or college level education and between 40% and 96% were married or partnered, although some studies did not measure these factors (Hill et al., 2011; Malcarne, Compas, Epping-Jordan, & Howell, 1995; Milbury, Badr, & Carmack, 2012; Moulton, Sweet, & Temoshok, 1987).

The majority of studies included participants with cancer, although two recruited participants with HIV and/or AIDS and one involved people with cardiovascular disease. Mean time since diagnosis at baseline assessment varied widely between two weeks and nine years, although two studies did not report this information (Bennett, Howarter, & Clark, 2013; Hill et al., 2011). Six of the studies involving people with cancer reported the majority (between 62% and 96%) to have been diagnosed with stage I or II cancer (Bennett et al., 2005; Glinder & Compas, 1999; Houldin, Jacobsen, & Lowery, 1996; Milbury et al., 2012; Moulton et al., 1987; Phelan et al., 2013). This is to be expected given the dominance of people with breast cancer within these studies (Lyrtzopoulos et al., 2012). Within the single study involving people with lung cancer prognosis was poorer, with the majority (69%) being diagnosed with stage III or IV cancer, again typical of this diagnosis (Cancer Research UK, 2011). The majority of participants with HIV/AIDS were experiencing symptoms of AIDS (between 65% and 100%). Fifty-eight per cent of the sample of participants with cardiovascular disease were reported to have a 'low' risk of disease progression based on their specific diagnosis and health status.

**Recruitment methods.** Only three articles explicitly described their sampling method (Dirksen, 1995; Houldin et al., 1996; Mouton et al., 1987). Several studies used convenience sampling procedures (Bennett et al., 2005; Dirksen, 1995; Glinder & Compas, 1999; Houldin et al., 1996; Malcarne et al., 1995; Milbury et al., 2012). Five studies attempted to obtain samples representative of their target populations by providing study information to all people eligible for inclusion (Bennett et al., 2013; Hill et al., 2011; Mak et al., 2007; Moulton et al., 1987; Phelan et al., 2013). All studies were reliant upon participants choosing to volunteer, with response rates of those approached varying between 43% and 95%, although two studies did not report this information (Bennett et al., 2005, 2013). Participants who volunteer for research do not often represent the full range of people within the studies' target population, with people who are older, male, from a non-white race and with low educational attainment and socioeconomic status being less likely to volunteer (Olsen, 2008; Patel, Doku, & Tennakoon, 2003). People who volunteer for research exploring emotional well-being are also more likely to have experienced significant emotional distress in the past or be currently experiencing distress (Donkin et al., 2012). Given these issues with low response rates and participant self-selection bias, as well as the use of convenience sampling procedures, the samples involved in the reviewed studies are unlikely to be representative of the studies' entire target populations and therefore the generalisability of findings to these populations may be limited (Teddlie & Yu, 2007). This is an unavoidable source of bias within health psychology research which relies on easily accessible volunteers to obtain adequate

amounts of data in an ethical way (Barker, Pistrang, & Elliott, 2007; The British Psychological Society [BPS], 2010).

Within most studies either healthcare professionals (Bennett et al., 2005, 2013; Glinder & Compas, 1999; Hill et al., 2011; Houldin et al., 1996; Malcarne et al., 1995; Mouton et al., 1987) or the researcher (Mak et al., 2007; Milbury et al., 2012) initially approached eligible participants with information about the study within the hospital or clinic settings that participants normally attended. Participants who were posted study information were also identified from their regular healthcare clinics (Dirksen, 1995; Phelan et al., 2013). The population of people with chronic health conditions not regularly affiliated with a healthcare provider were therefore not necessarily represented within the reviewed studies.

**Design and analysis.** Most studies were cross-sectional in design and seven also utilised prospective methods. Five prospective studies conducted just one follow-up assessment, one conducted two and one completed three. The time period between baseline and final follow-up assessments ranged from 12 weeks to one year. In four of these studies the mean time since diagnosis at baseline was relatively short (between 11 days and 14 weeks) (Bennett et al., 2005; Glinder & Compas, 1999; Malcarne et al., 1995; Milbury et al., 2012) and for one it was five years (Mak et al., 2007). Two prospective studies did not provide this information (Bennett et al., 2013; Hill et al., 2011). In one study involving people with cancer an additional group of spouses were involved (Milbury et al., 2012) but for this review findings were only extracted when they related solely to the group of people with cancer. Moulton et al. (1987) analysed two groups of participants separately, those with AIDS and those with AIDS Related Complex (ARC). All other studies analysed only one group of participants even when mixed diagnoses were present (Bennett et al., 2013; Malcarne et al., 1995). Most studies utilised correlational methodology to analyse the relationship between self-blame and distress, although three explored between-groups differences based on the level of self-blame reported by participants.

**Measurement of emotional distress and well-being.** A range of self-report measures of distress were used. Four studies used a measure that assessed symptoms of anxiety and/or depression specifically (Bennett et al., 2005; 2013; Glinder & Compas, 1999; Phelan et al., 2013). The majority of studies employed measures which assessed multiple cognitive, affective and physical indicators of overall psychological distress or well-being. Two studies employed a semi-structured interview administered by the researcher (Hill et al., 2011; Houldin et al., 1996) and one study assessed observable indicators of participant distress using a researcher-rated instrument (Houldin et al., 1996). Although several studies did not explicitly report using measures that were

reliable and valid, all but one (Moulton et al., 1987) employed well-known tools with acceptable psychometric properties or reported evidence of measure reliability for their sample when using modified tools or scoring procedures.

**Measurement of self-blame.** As there is no widely agreed definition of what measurable experiences self-blame for illness onset may entail, all reviewed studies relied on single-item tools. Several studies employed bespoke measures and five drew influence from a measure originally created by Malcarne et al. (1995). Self-blame items were categorised by researchers into BSB and CSB measures when they assessed perceptions of blame related to the role of a person's behaviour or personal characteristics in illness cause/onset respectively. When a person's behaviour or character was not implicated these measures are referred to within the review as assessments of 'general' self-blame. One study measured BSB only and six studies measured general self-blame. Five studies included two single-item measures to assess BSB and CSB, although in one study scores from both items were summed to create a general self-blame measure (Hill et al., 2011).

Most studies required participants to respond using a Likert scale to indicate the presence and strength of self-blame beliefs. One study asked participants to simply respond 'yes' or 'no' to indicate the presence or absence of self-blame (Moulton et al., 1987) and another required participants to indicate if they believed that they, amongst other factors, were to blame for their cancer, and to assign a percentage representing how much they felt to blame (Houldin et al., 1996). Participants were grouped into 'no blame', 'mild-moderate blame' and 'high blame' groups based on percentage ratings. Six studies using Likert response scales analysed the strength of self-blame beliefs on a continuous scale including reports indicating the absence of self-blame. Other studies grouped participants based on scale responses into those who did not blame themselves at all and those who blamed themselves to any degree (Dirksen, 1995; Hill et al., 2011; Phelan et al., 2013). Although single-item measures are beneficial for directly assessing a specific experience (Bowling, 2005), the reliability and validity of these measures is questionable. The suitability of single-items for distinguishing between different types of self-blame is a concern within the reviewed literature given the moderate significant correlations between BSB and CSB items found by all studies performing this analysis ( $r = 0.25$  to  $0.52$ ,  $p < 0.05$ ) (Bennett et al., 2005, 2013; Glinder & Compas, 1999; Malcarne et al., 1995).

**Prevalence and degree of self-blame.** Five studies involving people with cancer found that between 18% and 39% of their samples reported some degree of self-blame (Bennett et al., 2005; Dirksen, 1995; Glinder & Compas, 1999; Houldin et al., 1996; Phelan et al., 2013). Variability in the Likert scales used and how this information was summarised make it difficult to ascertain the

degree of self-blame most commonly experienced. Participants were reported to have endorsed low levels of self-blame in some studies which involved mainly people with breast cancer, with mean ratings corresponding to 'very little' and 'not at all – somewhat' (Bennett et al., 2005, 2013; Glinder & Compas, 1999; Malcarne et al., 1995). Houldin et al. (1996) also reported that 76% of those who did see themselves as blameworthy reported 'mild-moderate' self-blame and 24% reported 'high' self-blame. In other studies involving people with lung cancer, HIV/AIDS and cardiac disease, moderate levels were reported, with mean ratings corresponding to 'agree – strongly agree' (Mak et al., 2007) and 'somewhat – very much' (Bennett et al., 2013; Milbury et al., 2012). Milbury et al. (2012) also reported that 47% of their sample blamed themselves 'very much' or 'completely'. The mean self-blame ratings reported may underestimate the degree of self-blame felt by those experiencing these beliefs given that these calculations included participants who felt no self-blame. Still, the subtle trend for greater self-blame to be felt by those with lung cancer, HIV/AIDS and cardiovascular conditions may be because these conditions are more strongly associated with lifestyle-based risk factors than breast cancer, potentially promoting perceptions of self-involvement with condition onset (NHS Choices, 2014).

No clear pattern can be seen across the reviewed studies to suggest that the prevalence or degree of self-blame varied with time since diagnosis, although this was difficult to ascertain given the lack of reporting and the varied time points at which participants were assessed. Three studies explored changes in self-blame within the first year following diagnosis and found little fluctuation in the prevalence or degree of self-blame over time (Glinder & Compas, 1999; Malcarne et al., 1995; Milbury et al., 2012). No clear themes can be seen across studies regarding differences in the prevalence and degree of general, behavioural and characterological types of self-blame. Within studies measuring both BSB and CSB, although no explicit comparisons were made of prevalence and strength, there was a trend for ratings of BSB to be slightly higher than those for CSB (Bennett et al., 2005, 2013; Glinder & Compas, 1999; Malcarne et al., 1995) and for BSB to be the most prevalent of the two types (Bennett et al., 2005; Glinder & Compas, 1999).

**Relationships between self-blame and demographic and clinical factors.** Greater self-blame was found to be related to demographic and clinical factors within some studies, for example, with undertaking no more than high school level education ( $p < .001$ ) and being unmarried ( $p < .001$ ) (Houldin et al., 1996), although the comparison groups in this study were not stated. Bennett et al. (2005) found BSB significantly decreased with age ( $r = -.30, p < .01$ ) and Milbury et al. (2012) found people who smoked were significantly more likely to blame themselves than people who had quit smoking ( $p < .05$ ) or never smoked ( $p < .0001$ ). However, other studies found no significant relationships between degree of self-blame and age, years spent in education, time since diagnosis,

disease stage/prognosis, ethnicity or religious affiliation ( $p > .05$ ) (Bennett et al., 2005; Glinder & Compas, 1999; Houldin et al., 1996; Malcarne et al., 1995). Firm conclusions cannot be drawn about the association between clinical and demographic factors and the prevalence and strength of self-blame beliefs from these limited findings, particularly when such varied participant demographics were measured.

### **The Relationship between Self-Blame and Emotional Distress for People with Cancer**

**General self-blame.** Four studies involving people with cancer diagnoses explored the relationship between general self-blame and emotional distress. One study reports non-significant differences in well-being between participants with and without self-blame beliefs (Dirksen, 1995). However, no data is reported to allow comment on any trend for between-group differences in well-being. There is also a concern regarding how participants were split into 'blame absent' and 'blame present' groups based on their responses to a six-point Likert scale. On the other hand, three studies did find greater self-blame to be significantly associated with greater distress, with two demonstrating this relationship concurrently (Houldin et al., 1996; Phelan et al., 2013) and one over time (Hill et al., 2011). One of these studies (Phelan et al., 2013) also found this relationship whilst controlling for the effect of several additional variables which can influence the strength of the relationship between self-blame and distress (Bennett et al., 2005). However, the two studies (Hill et al., 2011; Houldin et al., 1996) that employed researcher-led interview and observation-based assessments of distress did not make it explicit that researchers were blind from participant's self-blame ratings when assessing levels of distress. Although self-report methods can have their own issues with bias (e.g. social desirability) they discourage researcher influence on results which cannot be ruled out for these investigations.

**Behavioural self-blame.** Four studies explored the relationship between BSB and distress for people with cancer. Two studies using the same measure of distress did not find a significant relationship between greater BSB and greater distress concurrently or over time, although all but one correlational analysis suggested a relationship in this direction (Malcarne et al., 1995; Milbury et al., 2012). BSB was not a significant predictor of distress over time when controlling for baseline distress and for the full participant sample, but it was for the participants who also reported CSB (Malcarne et al., 1995). A further two investigations using different distress measures (Bennett et al., 2005; Glinder & Compas, 1999) found the relationship between greater BSB and greater distress did reach significance more often than not, both concurrently and over time and for both anxiety and depression when measured separately. When controlling for the influence of several additional variables, BSB continued to significantly predict greater concurrent distress at several

time points during the first year after diagnosis, although in one study this relationship only reached significance for anxiety and not depression (Bennett et al., 2005). When controlling for baseline distress and exploring the relationship between BSB and distress over time, BSB was found to have non-significant effects within one study (Glinder & Compas, 1999) but was a significant predictor in another (Bennett et al., 2005), although only for anxiety and only at a single follow-up assessment.

Similar to studies assessing general self-blame, these studies suggest that BSB may also be associated with increased distress, although perhaps more strongly when CSB is also present, for concurrent distress rather than long-term increases in distress and for symptoms of anxiety compared to depression. However, these distinctions should be interpreted carefully. Within all four studies non-significant findings could have been encouraged by small baseline sample sizes and participant attrition undermining the power these studies had to detect significant effects, particularly in Glinder & Compas's (1999) study where few participants ( $N=72$ ) were grouped into those with and without CSB beliefs. These issues were not always discussed by the authors so it is unclear if the effects of attrition and power had been considered before researchers drew their conclusions.

**Characterological self-blame.** Three of the studies assessing BSB in people with cancer also measured CSB (Bennett et al., 2005; Glinder & Compas, 1999; Malcarne et al., 1995). Greater CSB was associated with greater distress in all investigations, both concurrently and prospectively, although these relationships did not reach significance within one study (Malcarne et al., 1995) and only did so for depression and not anxiety within another (Bennett et al., 2005). When studies controlled for the influence of additional variables CSB continued to significantly predict greater concurrent distress, although this was not consistent across all time points assessed (Glinder & Compas, 1999) and again was found for depression but not anxiety when these experiences were assessed separately (Bennett et al., 2005). When controlling for baseline distress all three studies found CSB to be significantly predictive of increases in distress over time, even if not at all follow-up time points (Glinder & Compas, 1999). Bennett et al.'s (2005) prospective analyses question the possibility of CSB being more strongly related to depression than anxiety as greater CSB significantly predicted increases in anxiety over time but not depression. In summary, CSB is again associated with increased distress across all four studies and stronger evidence is presented for its relationship to increases in distress over time compared to BSB, although the aforementioned issues with adequate reporting in these studies make this a tentative conclusion.

### **Studies Involving People with Other Conditions**

**General self-blame.** Within two studies exploring the relationship between self-blame and distress in people with HIV/AIDS (Mak et al., 2007; Moulton et al., 1987), neither found a significant relationship. In fact, Mak et al.'s (2007) findings suggested that greater self-blame was associated with less emotional distress and greater psychological well-being. Still, both of these relationships were relatively weak and distress was assessed seven months after reports of self-blame and therefore it is not clear if self-blame beliefs were still present at follow-up. Taken together, these two studies may indicate that self-blame and psychological distress does not often co-occur for people with HIV/AIDS. However, it may be premature to draw these conclusions as neither study controlled for additional variables in their analyses, such as gender, time since diagnosis and physical health status, previously found to be predictive of emotional distress in people with HIV/AIDS (Kelly et al., 1993; Van, Aguirre, Sarna, & Brecht, 2002) and therefore potentially influential upon the strength of the relationship between self-blame and distress. Also, both contained relatively small samples ( $N < 150$ ), potentially undermining their power to detect significant findings.

**Behavioural self-blame.** For participants with cardiovascular disease (Bennett et al., 2013), greater BSB was significantly associated with greater concurrent anxiety and depression. Greater BSB also significantly predicted increases in anxiety and depression over time when controlling for baseline levels of distress. These findings do not support suggestions from studies with people with cancer that BSB may be less strongly associated with long-term distress and with depression compared to anxiety. As the interaction between BSB and CSB did not reach significance in this study, the suggestion that BSB might only be influential when CSB is also present (Malcarne et al., 1995) is also not supported for this participant population. The findings discussed in the subsequent paragraph may even indicate that BSB is the stronger predictor of distress, although this could be due, in part, to noticeably higher levels of BSB ( $M = 2.58$ ,  $SD = 0.98$ ) being reported in this study compared to CSB ( $M = 1.72$ ,  $SD = 0.80$ ) (Bennett et al., 2013).

**Characterological self-blame.** Again with participants with cardiovascular disease (Bennett et al., 2013), greater CSB was significantly associated with greater concurrent anxiety and depression, although when considered alongside BSB, CSB only neared significance in predicting depression and was no longer a significant predictor of anxiety. Greater CSB also significantly predicted greater depression over time but a relationship in the same direction did not reach significance for anxiety, consistent with some previous evidence with people with cancer suggesting a stronger relationship between CSB and depression compared to anxiety. However,

when controlling for baseline levels of distress and when considering BSB at the same time, CSB did not remain a significant predictor of either measure of distress.

## Discussion

This review aimed to explore the relationship between self-blame and indicators of emotional distress or well-being for people diagnosed with a chronic physical health condition. As previous researchers highlighted inconsistencies in the nature of this relationship across studies (Bennett et al., 2005; Glinder & Compas, 1999), the current review chose to examine only those studies that measured self-blame directly. The majority of participants within these studies did not believe that they were to blame for causing their condition. However, these beliefs were shown to exist for a significant minority. A similar minority have been found to judge their family member to be to blame for their cancer (Siminoff et al., 2010). Low degrees of self-blame were more often reported, although this may have been due to the methods used to calculate mean levels of self-blame and perhaps also to the dominance of people with breast cancer involved within the review which is a condition less commonly associated with lifestyle-based risk factors that potentially encourage self-blame. Some studies explored the relationship between a small number of clinical and demographic factors and the prevalence and strength of self-blame beliefs, although this was not a priority for the investigations and clear relationships were not consistently evidenced. Additional research with this focus would be of benefit to determine who might be most likely to hold these perceptions.

Importantly, the current review suggests that self-blame, whether measured as a general experience or broken down into self-blame related to behavioural or characterological factors, is associated, more often than not, with increased emotional distress. With the exception of participants with HIV/AIDS, for whom the relationship between self-blame and increased distress was not clearly indicated, this relationship generally persisted across different measures of distress, study designs and participant demographics. No clear patterns emerged with respect to differences in the strength of the self-blame and distress relationship between people with cancer and cardiovascular disease, nor between those with different types of cancer. As the majority of participants within the reviewed research were white/Caucasian adults aged over 30 and assessed within a year of being diagnosed with their health condition, the generalisability of the reviewed evidence to younger adults, different ethnicities and people living with chronic conditions for longer periods of time may be limited.

The relationship between self-blame and emotional distress found here supports evidence that assigning blame to others is associated with increased negative emotion, both for the person assigning blame and the person receiving it (Lobchuk et al., 2008; Mantler et al., 2003; Siminoff et al., 2010). As perceived control over the cause of an event is suggested to precipitate judgments of

blame (Mantler et al., 2003), self-blame could be hypothesised to also come with the previously evidenced benefits of feeling in control of improving future health (Janoff-Bulman, 1979; Park & Gaffey, 2007). However, the current review did not find any substantial evidence suggestive of self-blame being associated with greater emotional well-being and there is little support for the existence of a strong relationship between self-blame and greater perceived control over future health improvement and illness progression (Houldin et al., 1996; Moulton et al., 1987; Malcarne et al., 1995; Bennett et al., 2005, 2013). There remains a lot to learn about the complex interrelationships between self-directed judgements of control, responsibility and blame which have not been as closely researched as have making these judgments about others. Based on the current review and research into other-blame, the appendix presents a theoretical model of the possible cognitive appraisal process which may follow illness diagnosis and lead to self-blame judgements. It is recognised however that this model may certainly not be linear in nature and that further research is needed to explore each stage of this model and the likely multiple additional influences not explicitly considered within in it.

Across the reviewed studies self-blame was associated with emotional distress concurrently and it was often found to be predictive of distress at later points in time and changes in distress over time within the first year following diagnosis. There was some suggestion that CSB was a stronger predictor of increases in distress over time and that BSB was more often associated with concurrent distress and less strongly predictive of increases in distress over time. Secondly, some of the reviewed studies suggested that CSB was a stronger predictor of symptoms of depression, whereas BSB more strongly predicted anxiety. Janoff-Bulman (1979, 1992) might explain these trends with the suggestion that BSB and CSB are associated with differing levels of perceived control over changing the blamed behaviours and therefore hope that future similar events could be prevented. As aforementioned this relationship between self-blame and perceived future control and emotional well-being is certainly not clear cut. Caution must also be exercised when interpreting these differential findings between the two types of self-blame given that the discriminant validity of self-blame measures has not been explored. CSB and BSB were always moderately correlated and therefore possibly created issues of multicollinearity when analysed together. This can substantially alter which predictors of distress reach significance and therefore findings from Glinder & Compas (1999), Malcarne et al. (1995) and Bennett et al. (2005, 2013) need to be interpreted with this potential confound in mind. There exists a clear need to develop reliable and valid measures of self-blame in future research if potential differential influences of different types of self-blame are to be investigated appropriately.

One of the main aims of all of the reviewed research was to explore the association of self-blame with emotional distress. However, the designs employed do not allow conclusions to be

drawn about any potential causal relationship between self-blame and increased distress. In fact it is entirely possible that self-blame could be the product of emotional distress as much as the cause. Some studies have found distress to be equally predictive of changes in self-blame over time (Glinder & Compas 1999; Malcarne et al., 1995). Regardless of whether self-blame or distress comes first, their relationship could potentially be cyclical in nature; as one increases so does the other. When people experience feelings of depression, these are often associated with negative or self-critical views of the self and these beliefs can then serve to maintain low mood (Ehret, Joormann, & Berking, 2014). Therefore it would be interesting to explore how the relationship between self-blame might be different for groups of people with differing levels of distress. Commenting on this using the reviewed studies is difficult given the lack of information provided regarding how participant distress scores may have related to clinically significant levels of distress.

Although the exact nature of the cognitive relationship between self-blame and distress cannot be determined here, what is important is that a relationship appears to exist between these experiences. Therefore, clinically, the presence of self-blame may be indicative of increased distress and may maintain this distress even if was a product rather than a cause of the distress in the first instance. Emotional distress can promote wider difficulties with self-management, engagement in healthcare, family functioning and quality of life (Park & Gaffey, 2007; Pinto-Gouveia, Duarte, Matos, & Fraguas, 2014) and therefore it is important for healthcare professionals to be vigilant of expressions of self-blame as a sign of increased risk of distress. It would also be interesting for future research to explore how self-blame relates to some of these other social and behavioural indicators of adjustment and quality of life. In some instances it may be appropriate to try and reduce self-blame within psychological interventions to increase emotional resilience. On the other hand, correlations between self-blame and distress are not perfect and for some people self-blame may not accompany or be accompanied by distress. Many other factors are likely to be having an influence in this relationship and research exploring these potential mediators/moderators would be useful for determining how to reduce self-blame or protect against its negative emotional effects when it cannot be easily modified or disregarded (Callebaut, Molyneux, & Alexander, 2015). For instance, although not specifically within the context of physical health conditions, self-compassion as way of relating to oneself has been repeatedly shown to protect against distress when self-critical or self-blaming thoughts arise and even reduce or challenge the validity of these beliefs (Gilbert & Procter, 2006; Gilbert, 2009; Joeng & Turner, 2015).

### **Limitations of Reviewed Studies**

Within the reviewed literature there are several limitations concerning the quality of reporting and methodology. Some of the most common concerns were the lack of reported consideration of

adequate sample sizes needed to explore hypotheses with appropriate power and the lack of control over potentially confounding variables when examining the relationship between self-blame and distress. Many other factors have been found to be significant predictors of greater emotional distress for people with chronic health conditions, such as being younger in age, being female and having a shorter time since diagnosis at the time of assessment (Arden-Close, Gidron, & Moss-Morris, 2008; Evers, Kraaimaat, Geenen, & Bijlsma, 1997; Hulbert-Williams, Neal, Morrison, Hood, & Wilkinson, 2012). Therefore, the studies which failed to control for any of these factors could be reporting significantly biased findings regarding the importance of self-blame as a predictor of distress. Most studies also utilised self-report measures of distress which can be subject to social desirability bias and the two studies employing researcher-rated measures were also potentially subject to biased reporting. Future research in this area would benefit from using more holistic measures of emotional distress that consider the views of the participant's family and healthcare professionals.

In addition, the reviewed studies assessed self-blame using a variety of single-item measures and scoring methods and it was therefore difficult to make comparisons across studies in terms of the degree and prevalence of self-blame being reported. Given the lack of clarity around how to define and measure the experience of self-blame, this heterogeneity in measurement may also be a concern for assuming that all studies within the review were in fact measuring the same experience. Although the current review attempted to minimise this confound by selecting only those studies which measured self-blame specifically for illness onset and independently from other related experiences and using a tool exhibiting face validity, subtle differences in how these self-blame questions were worded may have encouraged participants to think about slightly different internal experiences/beliefs when responding. Qualitative research would be of benefit to explore what self-blame entails in the context of chronic health conditions in order to measure this experience appropriately and comprehensively. Although findings within this review are generally consistent and suggest self-blame to be associated with increased distress, study limitations do question the reliability and internal and external validity of these findings and therefore the trust in their clinical application.

## **Conclusion**

The current literature review provides a summary of the research conducted to date concerning the relationship between self-blame and emotional distress for people living with chronic physical health conditions. Clarity is still needed around the concept of self-blame, whether it can be conceptualised as behavioural and characterological in nature, and how it can be measured using reliable and valid methods. Future research would also benefit from the consistent use of

psychometrically sound and holistic measures of emotional distress, quality of life and adjustment to illness. Nevertheless, the reviewed evidence as a whole does suggest that when a person decides that they are to blame for the cause or onset of their health condition then they are more likely to experience greater emotional distress. Supporting people with the emotional impact of chronic health conditions is an integral part of the holistic and biopsychosocial approach effective in enhancing self-management, quality of life and physical health (DOH, 2011, 2014; NHS Confederation, 2012; NICE, 2010; Royal College of Psychiatrists, 2009). Therefore, it is important for the professionals working with people who are adjusting to life with a chronic physical health condition to be aware that expressions of self-blame may, for some, indicate a need for additional emotional support.

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Table 1

*Characteristics of reviewed studies.*

First Author (Year)	Sample Size and Location	Participant Characteristics	Methodology (CS; P) <sup>1</sup> (BG; C) <sup>2</sup>	Self-Blame Measure and Type of Blame <sup>3</sup>	Distress Measure <sup>4</sup>	Main Findings	QS <sup>5</sup>
Bennett (2005)	115 USA	<b>Diagnosis:</b> Breast Cancer <b>Ethnicity:</b> 99% Caucasian <b>Gender:</b> 100% female <b>Mean Age:</b> 53	<b>Design:</b> CS & P  <b>Baseline:</b> Four months post-diagnosis.  <b>Follow-up:</b> Seven and 12 months post-diagnosis.  <b>Analysis:</b> C	See Malcarne (1995)  <b>Response:</b> Likert scale (1 = not at all; 4 = completely). <b>Measurement:</b> Degree of BSB & CSB, continuous scale.	Self-report: BAI; BDI-II  Assesses symptoms of anxiety and depression. Higher scores = higher distress  Assessed at all time points.	Significant positive cross-sectional and prospective correlations found between BSB and anxiety and depression at four and 12 months post diagnosis ( $r = .22$ to $.25$ , $p < .05$ ). Positive prospective correlations did not reach significance at 7 months ( $r = .12$ to $.15$ , $p < .05$ ).  Significant positive cross-sectional and prospective correlations between CSB and depression at all time points ( $r = .32$ to $.39$ , $p < .05$ ). Positive correlations did not reach significance for anxiety at any time point ( $r = .11$ to $.15$ , $p > .05$ ).  Cross-sectional multivariable analysis: Greater BSB significantly predicted greater anxiety ( $\beta = .27$ , $p = .01$ ) but not depression ( $p > .05$ ). Greater CSB significantly predicted greater depression ( $\beta = .41$ , $p = .001$ ) but not anxiety ( $p > .05$ ). All models controlled for age, cancer stage, education and time since diagnosis.  Prospective multivariable analysis: Greater CSB significantly predicted greater anxiety at seven months ( $\beta = .16$ , $p = .05$ ). Greater BSB significantly predicted anxiety at 12 months ( $\beta = .20$ , $p = .02$ ). All other relationships were non-significant ( $p > .05$ ). All models controlled for age, cancer stage, education, time since diagnosis and baseline distress.	27
Bennett (2013)	129 USA	<b>Diagnosis:</b> Heart Disease <b>Ethnicity:</b> 93%	<b>Design:</b> CS & P	See Malcarne (1995) 'Cancer' changed to 'cardiac event'.	Self-report: BAI; BDI-II	Significant positive cross-sectional correlations found between BSB and CSB and anxiety and depression at baseline ( $r = .23$ to $.46$ , $p < .05$ ).	27

		European American <b>Gender:</b> 67% male <b>Mean Age:</b> 64	<b>Baseline:</b> at the start of a 12 week cardiac rehabilitation intervention.  <b>Follow-up:</b> at the end of the intervention.  <b>Analysis:</b> C	<b>Response:</b> Likert scale (1 = not at all; 4 = completely). <b>Measurement:</b> Degree of BSB & CSB, continuous scale.  Assessed at baseline only.	Assesses symptoms of anxiety and depression.  Higher scores = higher distress  Assessed at both time points.	Significant positive prospective correlations between BSB and anxiety and depression at follow-up ( $r = .32$ to $.48, p < .05$ ) and between CSB and depression ( $r = .29, p < .05$ ). Non-significant positive prospective correlations between CSB and anxiety ( $r = .19, p > .05$ ).  Cross-sectional multivariable analysis: When BSB and CSB entered simultaneously greater BSB significantly predicted greater anxiety ( $\beta = .28, sr^2 = .06, p < .01$ ) and depression ( $\beta = .38, sr^2 = .11, p < .001$ ). CSB was not a significant predictor ( $p > .05$ ), but neared significance in predicting depression ( $p < .10$ ). BSBxCSB interaction was not significant in any model ( $p > .05$ ).  Prospective multivariable analysis: Greater BSB predicted greater anxiety ( $\beta = .23, sr^2 = .04, p < .01$ ) and depression ( $\beta = .14, sr^2 = .01, p < .05$ ) at follow-up. CSB was not a significant predictor of anxiety or depression ( $p > .05$ ). BSBxCSB interaction was not significant in any analysis.	
Dirksen (1995)	31 USA	<b>Diagnosis:</b> Melanoma <b>Ethnicity:</b> 100% Caucasian <b>Gender:</b> 61% female <b>Mean Age:</b> 55	<b>Design:</b> CS <b>Analysis:</b> BG	<i>'I am to blame for getting melanoma'</i>  <b>Response:</b> Likert scale (1 = strongly disagree; 6 = strongly agree). <b>Measurement:</b> Presence/absence of general self-blame.	Self-report: IWB  Assesses affective and cognitive indicators of general well-being. Higher scores = less distress.	No significant difference in well-being found for people reporting self-blame and no self-blame ( $t = 1.5, p < .07$ ).	19
Glinde (1999)	76 USA	<b>Diagnosis:</b> Breast Cancer <b>Ethnicity:</b> 90% Caucasian <b>Gender:</b> 100% female <b>Mean Age:</b> 55	<b>Design:</b> CS & P  <b>Baseline:</b> At diagnosis.  <b>Follow-up:</b>	See Malcarne (1995)  <b>Response:</b> Likert scale (1 = not at all; 4 = completely). <b>Measurement:</b> Degree of BSB & CSB, continuous scale.	Self-report: SCL-90-R  Anxiety and depression subscales combined to assess overall emotional distress. Higher scores	Significant positive cross-sectional correlations present between BSB and CSB and distress at all time points ( $rs = .26$ to $.53, p < .05$ ). Significant prospective positive correlations between BSB and CSB at all time points and distress at 12 months post-diagnosis ( $rs = .27$ to $.58, p < .05$ ).	27

			Three, six and 12 months post-diagnosis	Assessed at diagnosis, three and six months post-diagnosis.	Assessed at all time points.	Cross-sectional multivariable analysis: Greater BSB significantly predicted greater distress at diagnosis ( $\beta = .32, sr^2 = .09, p = .01$ ) and six months ( $\beta = .35, sr^2 = .08, p = .01$ ) and approached significance at three months ( $p = .07$ ). Greater CSB significantly predicted greater distress at three months post-diagnosis only ( $\beta = .25, sr^2 = .04, p = .03$ ). All models controlled for age, cancer stage and education.	
			<b>Analysis:</b> C			Prospective multivariable analysis: Greater CSB at three months significantly predicted increased distress at six ( $\beta = .47, sr^2 = .12, p = .01$ ) and 12 months ( $\beta = .29, sr^2 = .04, p = .03$ ). Greater CSB at diagnosis approached significance for predicting greater distress at three months ( $p = .055$ ). All additional analyses were non-significant ( $p > .05$ ). All models controlled for age, cancer stage, education and baseline distress.	
Hill (2011)	355 UK	<b>Diagnosis:</b> Breast Cancer <b>Ethnicity:</b> not reported <b>Gender:</b> 100% female <b>Most Common Age Range:</b> 51-64	<b>Design:</b> P <b>Baseline:</b> After breast surgery. <b>Follow-up:</b> One year after baseline. <b>Analysis:</b> C & BG	See Malcarne (1995) <b>Response:</b> Likert Scale (1 = not at all; 5 = completely). Two item scores summed. <b>Measurement:</b> Presence/absence of general self-blame. Assessed at baseline only.	Semi-structured interview: SADS - Administered by researcher. Assessed presence of DSM-IV symptoms of Major Depression (MD) and Generalised Anxiety Disorder (GAD). Participants judged to meet or not meet diagnostic criteria. Assessed at follow-up only.	Participants reporting self-blame showed significantly greater symptoms of MD (OR = 3.47, $p = .001$ ) and GAD (OR = 3.50, $p = .004$ ) compared to those reporting no self-blame in univariate analyses. Within multivariable analyses controlling for social support, shame and history of MD and GAD self-blame was no longer a significant predictor ( $p > .05$ ).	29
Houldin (1996)	234 USA	<b>Diagnosis:</b> Breast Cancer	<b>Design:</b> CS <b>Analysis:</b> BG	<i>'How much do you blame each of the following factors</i>	Semi-structured interview: PAIS -	PAIS: Greater self-blame was significantly associated with greater distress ( $F = 5.03, p =$	25

		<p><b>Ethnicity:</b> 82% white  <b>Gender:</b> 100% female  <b>Mean Age:</b> 53</p>		<p><i>for your cancer?’</i></p> <p><b>Response:</b> <i>myself, someone else, the environment, heredity, chance, fate or God.</i> Assigned a % to each factor selected.</p> <p><b>Measurement:</b> Degree of general self-blame: ‘no blame’ (0%); ‘mild-moderate blame’ (1-49%); ‘high blame’ (&gt;50%).</p>	<p>Administered by researcher.</p> <p>Assesses multiple indicators of adjustment. Findings for psychological distress subscale reported here. Higher scores = more distress.</p> <p>Observer report: GAIS - Completed by researcher.</p> <p>Assesses observable indicators of distress about medical condition. Higher scores = less distress.</p>	<p>.007). People reporting ‘high’ self-blame reported significantly higher distress than those reporting ‘mild/moderate’ or no self-blame (<math>p = .05</math>). Non-significant trend for people reporting ‘mild/moderate’ blame to show higher distress than those reporting no blame.</p> <p>GAIS: Greater self-blame was significantly associated with greater distress (<math>F = 3.12, p = .04</math>). Post-hoc comparisons did not reach significance (<math>p &gt; .05</math>). Trend for people reporting ‘no’ blame to be less distressed than those reporting ‘mild/moderate’ blame and for the latter group to be less distressed than participants reporting ‘high’ blame.</p>	
Mak (2007)	150 China	<p><b>Diagnosis:</b> HIV/AIDS  <b>Ethnicity:</b> 100% Chinese  <b>Gender:</b> 82% male  <b>Mean Age:</b> 42</p>	<p><b>Design:</b> P</p> <p><b>Baseline:</b> mean of five years post-diagnosis.</p> <p><b>Follow-up:</b> Seven months after baseline.</p> <p><b>Analysis:</b> C</p>	<p><i>‘It is my own fault that I am infected with the disease’</i></p> <p><b>Response:</b> Likert scale (1 = strongly disagree; 6 = strongly agree).</p> <p><b>Measurement:</b> Degree of general self-blame, continuous scale.</p> <p>Assessed at baseline only.</p>	<p>Self-report: MHI</p> <p>Assesses indicators of general distress and well-being separately. Higher scores = higher distress and higher well-being.</p> <p>Assessed at follow-up only.</p>	<p>Non-significant negative correlation found between self-blame and distress (<math>r = -.02, p &gt; .05</math>).</p> <p>Non-significant positive correlation found between self-blame and well-being (<math>r = .26, p &gt; .05</math>).</p>	32
Malcarne (1995)	72 USA	<p><b>Diagnosis:</b> Cancer (Mixed diagnoses, 40% breast cancer).  <b>Ethnicity:</b> 96% Caucasian  <b>Gender:</b> 79% female</p>	<p><b>Design:</b> CS &amp; P</p> <p><b>Baseline:</b> Ten weeks post-diagnosis.</p> <p><b>Follow-up:</b></p>	<p><i>‘How much do you blame yourself for the kind of things you did (that is, for any behaviour that led to your cancer)?’</i></p> <p><i>‘How much do you blame yourself for the kind of</i></p>	<p>Self-report: modified BSI</p> <p>Assesses range of psychological and somatic indicators of distress.</p>	<p>Both BSB and CSB correlated positively but non-significantly with distress at baseline (<math>r = .19; .17, p &gt; .05</math>) and follow-up (<math>r = .30; .31, p &gt; .05</math>) in cross-sectional analyses. Non-significant prospective correlations for both BSB (<math>r = .26, p &gt; .05</math>) and CSB (<math>r = .33, p &gt; .05</math>).</p> <p>Multivariable prospective analysis: When</p>	25

		<b>Mean Age:</b> 43	Four months post-diagnosis <b>Analysis:</b> C	<i>person that you are (that is, for being the kind of person who has things like cancer happen to them?)</i>  <b>Response:</b> Likert Scale (1 = not at all; 5 = completely). <b>Measurement:</b> Degree of BSB & CSB, continuous scale.  Assessed at all time points.	Several somatic symptom items removed for study. Higher scores = greater distress.  Assessed at all time points.	controlling for baseline distress, greater baseline CSB significantly predicted increased distress at follow up ( $\beta = .19, sr^2 = .03, p < .05$ ). Effect no longer significant ( $p > .05$ ) when a significant BSBxCSB interaction added ( $\beta = .18, sr^2 = .02, p < .05$ ). Greater baseline BSB significantly predicted increases in distress at follow up only when participants also reported CSB ( $sr^2 = .03, p < .01$ ).	
Milbury (2012)	158 USA	<b>Diagnosis:</b> Lung Cancer <b>Ethnicity:</b> 89% white <b>Gender:</b> 64% male <b>Mean Age:</b> 63	<b>Design:</b> CS & P  <b>Baseline:</b> Two months post-diagnosis.  <b>Follow-up:</b> Eight months post-	See Malcarne (1995) First item only.  <b>Response:</b> Likert scale (1=not at all; 4=completely). <b>Measurement:</b> Degree of BSB, continuous scale.  Assessed at both time points.	Self-report: BSI  Assesses a range of psychological and somatic indicators of distress.  Higher scores = greater distress.	Non-significant positive cross-sectional correlation found between BSB and distress at two months ( $r = .16, p > .05$ ). Non-significant negative cross-sectional correlation found at eight months ( $r = -.03, p > .05$ ). Non-significant positive prospective correlation ( $r = .19, p > .05$ ) reported.	29
Moulton (1987)	103 USA	<b>Diagnosis:</b> AIDS/ARC <b>Ethnicity:</b> not reported <b>Gender:</b> 100% male <b>Mean Age:</b> AIDS;35 ARC; 37	<b>Design:</b> CS <b>Analysis:</b> BG  <b>Follow-up:</b> Eight months post-	<i>'Do you blame yourself for your current health problems?'</i>  <b>Response:</b> Yes or No <b>Measurement:</b> Presence/absence of general self-blame	Self-report: POMS; TMAS-A; BHS  Scores summed to create one measure of 'general dysphoria'. Higher scores = greater distress.	No significant difference in distress found for people reporting self-blame and no self-blame ( $p > .05$ ).  No trend data available.	23
Phelan (2013)	1109 USA	<b>Diagnosis:</b> Colorectal Cancer <b>Ethnicity:</b> 87% white <b>Gender:</b> 100% male	<b>Design:</b> CS <b>Analysis:</b> C	<i>'I feel I am to blame for my illness'</i>  <b>Response:</b> Likert scale (1 = not at all true; 4 = completely true). <b>Measurement:</b>	Self-report: PROMIS-SF  Depression subscale used. Assesses frequency of symptoms of	Greater self-blame significantly predicted greater depression ( $B = 2.67, p < .001$ ) when controlling for multiple clinical, demographic and psychological variables (e.g. perceived blame from others, age, ethnicity, level of education, pain and fatigue).	29

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**Mean Age: 68**

Presence/absence of general depression.  
self-blame.

Higher scores = higher  
distress

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<sup>1</sup>CS: Cross-sectional; P: Prospective; <sup>2</sup>BG: Between-Groups; C: Correlational; <sup>3</sup>BSB: Behavioural self-blame; CSB: Characterological self-blame;

<sup>4</sup>POMS (Profile or Mood States; McNair, Lorr & Droppleman, 1971); TMAS-A (Taylor Manifest Anxiety Scale – Abbreviated version; Taylor, 1953; Bendig, 1956); BHS (Beck Hopelessness Scale; Beck, Weissman, Lester, & Trexler, 1974); BSI (Brief Symptom Inventory; Derogatis & Spencer, 1982); IWB (Index of Well-being; Campbell, 1976); PAIS (Psychosocial Adjustment to Illness Scale; Derogatis, 1986); GAIS (Global Adjustment to Illness Scale; Derogatis, 1975); SCL-90-R (Symptom Checklist Revised; Derogatis, 1983); BAI (Beck Anxiety Inventory; Beck & Steer, 1990); BDI (Beck Depression Inventory; Beck, Steer, & Brown, 1996); MHI (Mental Health Inventory; Veit & Ware, 1983); SADS (Schedule for Affective Disorders and Schizophrenia; Endicott & Spitzer, 1978); PROMIS-SF (National Cancer Institute’s Patient-Reported Outcomes Measurement System, Short form; Reeve et al., 2007).<sup>5</sup>QS: Quality assessment score.