

# Forgiveness and Physical Health

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Over a decade ago in the first edition of the *Handbook of Forgiveness* (Worthington, 2005), Toussaint and Webb (2005) conducted a broad review of the associations between forgiveness and global mental health and well-being and turned up 18 empirical articles. Even though an entire chapter in the original *Handbook* was dedicated to theorizing about why forgiveness might be related to physical health (Harris & Thoresen, 2005), in the early 2000s the empirical foundation, at almost any level, was quite modest. Today that has changed. Recently, the book, *Forgiveness and Health: Scientific Evidence and Theories Relating Forgiveness to Better Health* (Toussaint, Worthington, & Williams, 2015), had as its sole focus to review literature on forgiveness and health, and only one chapter was devoted to mental health. In just over a decade (2005–2015), the understanding of forgiveness and health went from theorizing bolstered by only a small but promising collection of articles to an extensive literature that required an entire volume to adequately summarize. This parallels explosive growth in research on forgiveness in general. Nonetheless, the focus on forgiveness and physical health per se has lagged behind the study of forgiveness and its association with other outcomes such as mental health and happiness. In the present chapter, we focus exclusively on the topic of forgiveness and physical health. We review methods and findings of existing empirical research and attempt to outline key directions for continuing work in this area.

## Forgiveness Defined

Three features of forgiveness are important in our understanding of how forgiveness relates to physical health. First, forgiveness can be both a trait and state. Trait forgivingness appears to be most important for health. Traits (or dispositions) are thought to be stable over time and across situations, and it is this consistent influence on one's experience throughout life that is thought to be most importantly connected to health. Of course, forgiving states are important, and other contributors to this handbook (e.g., see Chapter 16) have demonstrated how momentary states of forgiveness can influence important physiological change underlying physical health. However, current models of physiological homeostasis suggest that it is allostatic load, biological dysregulation across multiple physiological systems due to accumulated wear-and-tear that adversely affects the human physical condition (McEwen, 2005). Forgiving and unforgiving personalities most likely influence chronic allostatic load (Toussaint, Shields, Dorn, & Slavich, 2014). Second,

two primary dimensions of forgiveness have received considerable attention as they relate to health. These are forgiveness of others and self-forgiveness. Forgiveness of others involves reducing unforgiving thoughts, feelings, motivations, and behaviors directed toward an offender and often replacing them with love-based, altruistic thoughts, feelings, motivations, and behaviors (Worthington, 2005). Self-forgiveness involves reducing self-condemning emotions such as shame and guilt, accepting responsibility of one's wrongdoing, and then replacing self-condemnation with compassion, generosity, and love (Woodyatt, Worthington, Wenzel, & Griffin, 2017; see also Chapter 18). Other dimensions of forgiveness certainly exist, such as feeling forgiven by God or seeking forgiveness from others and even societal forgiveness (Enright et al., 2016), but they have received less attention in health research. Third, although the decision to forgive is crucial in facilitating forgiveness, it is likely the emotional side of forgiveness that is connected most directly to physical health (Worthington, Witvliet, Pietrini, & Miller, 2007). Theories of stress rely on the affective system as the conduit through which environmental stimuli elicit physiological changes that ultimately influence physical health conditions (McEwen, 2005). (We do observe that decisions to forgive affect relationships, and relationship quantity and quality can influence physical health.) There are many aspects of forgiveness, but these three issues stand out as important for physical health. In this sense, forgiveness of others or self-forgiveness can be thought of as traits or states that may have a health-protecting influence on how individuals respond to emotionally arousing interpersonal or intrapersonal events. Forgiveness of others and self-forgiveness can also be thought of as virtues, coping styles, or resilience characteristics that protect individuals from ongoing stress resulting from interpersonal transgressions of others or self-condemnation of oneself (Toussaint, Webb, & Hirsch, 2017; Worthington & Scherer, 2004).

## Method of Review

We searched the psychological and medical literatures on December 22, 2018, using title, keyword, and abstract searches of the databases PsycINFO and PubMed. PsycINFO was searched with the term, "forg\*v\* and physical health," and PubMed was searched with "forgiv\* and physical health" (searching "forgav\* and physical health" resulted in zero articles). There were no publication-year restrictions. Inclusion criteria were: (a) at least one measure of forgiveness, and (b) at least one explicit measure of physical health. Exclusion criteria were: (a) experimental manipulations or interventions that combined forgiveness with other constructs (e.g., gratitude, mindfulness); and (b) health-related outcomes focused exclusively on mental health, happiness, suicide, global non-health-related quality of life (see Chapter 18), physiological parameters or biomarkers (see Chapter 16), or combined mental and physical health composites.

The PsycINFO search turned up 105 articles, and the PubMed search added another 36 articles. Google Scholar was searched using "forgiveness and physical health" and no non-redundant articles were identified for inclusion. The reference sections of recent reviews (Cheadle & Toussaint, 2015; Davis et al., 2015) were examined. Six non-redundant articles were added. Thus, the total number of articles was 147. The titles, keywords, and abstracts of these articles were reviewed by the first author for relevance and 61 articles were retained. After reviewing the full-text of the 61 articles, 10 articles were eliminated because they did not meet inclusion/exclusion criteria. Of the 51 articles reviewed, 4 had a second study included in the article leaving 55 studies for review. Although summary statistics for the review will include all 55 studies spanning 2000 to 2018, only recent studies published between 2014 and 2018 will be highlighted to feature current work not captured in previous reviews that likely concluded in 2014 (Cheadle & Toussaint, 2015; Davis et al., 2015). A full list of studies on forgiveness and health can be obtained from the first author (or through the resources associated with this chapter). A summary of the results are provided in Table 17.1.

Table 17.1 Literature Review Summary of Research on Forgiveness and Health

Content area of review	N (%) of studies	N (%) evidence of benefit
Total studies	55 (100%)	40 (73%)
<i>Forgiveness</i>		
Forgiveness of others	42 (76%)	28 (67%)
Self-forgiveness	20 (35%)	13 (65%)
Other forgiveness dimensions	9 (16%)	8 (100%)
<i>Health</i>		
Self-rated health	13 (24%)	12 (92%)
Health-related quality of life	17 (31%)	11 (65%)
Symptoms	20 (36%)	14 (70%)
Physical activity	3 (5%)	2 (67%)
<i>Sample characteristics</i>		
Undergraduate	13 (24%)	10 (77%)
Community	27 (49%)	22 (81%)
Patient	11 (20%)	6 (55%)
Mixed sample	4 (7%)	2 (50%)
<i>Design</i>		
Cross-sectional	47 (85%)	34 (72%)
Longitudinal	4 (9%)	3 (60%)
Experimental/intervention	3 (6%)	3 (100%)

Note. Content areas are not mutually exclusive.

## Results

### *Publishing Trends*

Research on forgiveness and physical health has been ongoing since 2000. For every five-year span of time, 2000–2004, 2005–2009, 2010–2014, 2015–2018 (4 years), the number of articles has been 6, 9, 21, 14 (last 4 years), respectively. There is growing interest in how forgiveness is related to physical health.

### *Dimensions of Forgiveness*

**Forgiveness of others.** Forgiveness of others and self-forgiveness are the predominant dimensions of forgiveness that have been examined for their relation to physical health. Of the 55 total studies in this review 42 (76%) included a measure of forgiveness of others. Of these studies, 28 (67%) showed at least one statistically significant association of forgiveness of others with physical health and all were in the healthy direction. As one example of recent research evaluating the connection between forgiveness of others and physical health, Toussaint et al. (2018) showed in two cross-sectional samples of middle-aged working adults ( $N_1 = 108$ ;  $N_2 = 154$ ) that forgiveness of a specific event and trait forgiveness were both associated with fewer health complaints.

**Self-forgiveness.** Of the 55 total studies in this review just over a third ( $n = 20$ ; 36%) included a measure of self-forgiveness. This is less than half of the studies that examined forgiveness of others and physical health. This probably reflects the belated onset of research on self-forgiveness relative to forgiveness of others (Hall & Fincham, 2005). Of these studies, 13 (65%) showed at least one statistically significant association of self-forgiveness with physical health, and all were in the healthy direction. As an example of research examining self-forgiveness and physical health, Bassett et al.

(2016) showed, in two cross-sectional studies of college student and community samples ( $N_1 = 36$ ;  $N_2 = 141$ ), that self-forgiveness was related to fewer physical symptoms and improved ratings of physical health.

**Other dimensions of forgiveness.** Of the 55 total studies in this review only nine (16%) included other measures of forgiveness such as feeling forgiven by God, forgiving uncontrollable situations, or seeking forgiveness. This is the smallest group of studies in this review. But, this might reflect the relative lack of conceptual development in these areas. Theoretical and measurement issues concerned with these dimensions of forgiveness have not been as fully addressed. This is evident because many of the measures were developed specifically for a given study and not psychometrically well supported. All nine of the studies examining other dimensions of forgiveness and physical health showed at least one statistically significant association between physical health and other dimensions of forgiveness and all were in the healthy direction. An intriguing example is a cross-sectional study by Krause and Ironson (2017) that examined the connection between feeling forgiven by God and the health outcomes of waist-hip ratio and exercise frequency. Interestingly, feeling forgiven by God was associated with unhealthy waist-hip ratios and less frequent exercise, but this association was most strongly evident for participants who were less committed to their faith. Although intriguing, explanations for these findings are unclear, in part, because these are cross-sectional analyses. Perhaps less strongly committed adherents find forgiveness by God a license for indulgent and unhealthy behavior, and perhaps these effects are similar to the sometimes unhealthy effects of self-forgiveness (Wohl & Thompson, 2011) or feeling God's unconditional forgiveness (Toussaint, Owen, & Cheadle, 2012). Feeling forgiven by God without acceptance of fault and responsibility, sometimes referred to as pseudo-self-forgiveness, might pose more health challenges than benefits. Alternatively, those with less favorable waist-hip ratios, who exercise less, and yet feel forgiven by God are less prone to anxiety and perfectionism which drives them to be less fastidious about weight control and exercise as well as more likely to accept God's forgiveness.

### *Dimensions of Physical Health*

**Self-rated health.** A commonly used and meaningful measure of physical health is one's perception of health (Idler & Benyamini, 1997). Although this measure may include an emotional component, it is a powerful predictor of mortality and changes in physical health over time. Of the 55 studies reviewed herein 13 (24%) studies included self-rated health as a primary health outcome measure. Of these 13 studies, 12 (92%) showed a statistically significant beneficial association between self-rated health and some dimension of forgiveness.

**Health-related quality of life.** Varying definitions of health-related quality of life emphasize health perceptions similar to self-rated health, pure quality of life dimensions (i.e., psychological well-being), and the unique influences of health on one's quality of life (Karimi & Brazier, 2016). Of the 55 studies, 17 (31%) included a measure of health-related quality of life. Of these 17 studies, 11 (65%) showed a statistically significant positive association with some dimension of forgiveness. Of these 17 studies, 15 (88%) used some version of the Medical Outcomes Study Short-Form Health Survey (Ware & Sherbourne, 1992). There are several different versions of the base Short-Form 36 (SF-36) but all assess to some degree eight core dimensions of health-related functioning including: (a) physical limitations, (b) social limitations, (c) physical health-related role interference, (d) bodily pain, (e) general mental health, (f) emotional health-related role interference, (g) vitality (energy and fatigue), and (h) general health perceptions. This is a broad construct and our review, while focused exclusively on physical health outcomes, would be incomplete by excluding health-related quality of life. However, readers should examine associations between dimensions of forgiveness and health-related quality of life cautiously because this construct is not exclusively the domain of physical health and includes broader concepts of mental and social well-being.

**Symptoms.** Somatic symptoms are a common reason for healthcare consultations and are related to reduced quality of life, greater healthcare use, increased absenteeism, and job loss (Joustra, Janssens, Schenk, & Rosmalen, 2018). Sometimes symptoms can be fleeting (e.g., headache) and other times can indicate much more serious conditions (e.g., heart problems) (Robbins & Kirmayer, 1991). Of the 55 studies, 20 (36%) included a measure of somatic symptoms. Of these 20 that included a measure of somatic symptoms, 14 (70%) showed a healthy association between some dimension of forgiveness and somatic symptoms.

**Physical activity.** Two articles were included in this review not because they examined forgiveness and associations with physical health per se, but because they focused on physical activity, one of the most powerful contributors to good physical health (Hills, Street, & Byrne, 2015). The first article involved two studies (Struthers, van Monsjou, Ayoub, & Guilfoyle, 2017). In the first correlational study, the investigators sought to determine whether, compared to non-exercising individuals, individuals who frequently engaged in different types of exercise including aerobic, anaerobic, and stretching exercises showed different levels of readiness to forgive a romantic partner. When compared to people who frequently engaged in aerobic and stretching exercises, individuals who did not exercise or frequently engaged in anaerobic exercise showed lower levels of readiness to forgive their romantic partners. In the second experimental study, Struthers et al. (2017) randomly assigned participants to take part in 30 minutes of aerobic, anaerobic, stretching, or no exercise. Results supported those of the first study: When compared to participants who engaged in aerobic or stretching exercises, participants who did not exercise or engaged in anaerobic exercise showed lower levels of readiness to forgive a purported offender for her wrongdoing.

Both studies point to the conclusion that aerobic and stretching exercises might be beneficial for forgiveness (with the important caveat that the experimental study involved only a 30-minute intervention and should not be over-interpreted). To the extent that physical activity increases forgiveness of others and forgiveness of others, in turn, has an independent and salubrious effect on physical health, then the benefits of physical activity on health are not only in the well-established direct fashion but they may also act through important mediators such as forgiveness. Furthermore, aerobic and stretching exercises are both well-established in promoting cardiovascular health (Agarwal, 2012; Kruse & Scheuermann, 2017) and are central components of many Eastern approaches to meditation and wellness (e.g., Qigong; Xiong, Wang, Li, & Zhang, 2015) perhaps suggesting Eastern traditional practices promote forgiveness and direct and indirect (through forgiveness) health benefits.

The second article of note here is a study focused on how self-forgiveness is related to lapses in physical activity (Schumacher, Arigo, & Thomas, 2017). In this study, participants' levels of self-forgiveness and physical activity were assessed weekly for six weeks. Self-forgiveness was assessed with a single item and physical activity lapses were self-reported as well as objectively measured using fit-bits (www.fitbit.com). Results showed that individuals with higher levels of self-forgiveness in a given week were *more* likely to have lapses in their physical activity the following week. Given the importance of physical activity (Hills et al., 2015), any impediment to engaging in physical activity has to be taken seriously. Self-forgiveness should not offer an easy excuse for unhealthy behavior (Woodyatt et al., 2017), but a previous study coincides with this finding perhaps suggesting a potential association between self-forgiveness and health risk (Wohl & Thompson, 2011).

### **Sample and Design Characteristics**

Given psychology's reliance on college student participants (Hanel & Vione, 2016), it is surprising to find that out of the 55 studies reviewed herein only 13 (24%) relied exclusively on college students, 10 of which (77%) showed an association between forgiveness and health. The other 76 percent of the studies used participants from the community ( $n = 27$ ; 49%), patient groups ( $n = 11$ ; 20%), or mixed college and community or high school samples ( $n = 4$ ; 7%). Of the community, patient, and mixed sample

studies, 22 (85%), 6 (55%), 2 (50%) showed an association between forgiveness and health, respectively. Community samples were diverse including sedentary young adults, middle-aged male prisoners, Iraqi refugees, and members of four different religions including Buddhists, Christians, Jews, and Muslims. Patient samples were similarly diverse including patients with fibromyalgia, spinal cord injury, chronic heart failure, traumatic brain injury, stroke, chronic pain, HIV, arthritis, chronic obstructive pulmonary disease, diabetes, and posttraumatic stress disorder. The average sample size was 877 participants, but this average was considerably skewed by a few very large samples ( $Ns > 2000$ ). The median sample size was just over 261 participants (minimum = 11, maximum = 10,283). Regarding the design of these studies, most were cross-sectional studies ( $n = 47$ ; 85%), a few were longitudinal ( $n = 5$ ; 9%), and only three were experimental/interventions (6%). Of the 47 cross-sectional, 5 longitudinal, and 3 experimental/intervention studies, 34 (72%), 3 (60%), and 3 (100%) showed an association or effect of forgiveness on health, respectively. Of the 52 correlational studies, 12 (23%) were conducted with college students, 23 (42%) were conducted with community samples (3 [13%] of which used probability-based samples), and 10 (19%) were conducted with patients samples. Three (5%) other cross-sectional, correlational studies were conducted with mixed college and community samples or with high school students. Three (5%) longitudinal studies were conducted with probability-based national samples of elders aged 66 years and older and one was conducted with a mixed college and community sample. The experiment used a college student sample. One intervention studied a community sample of middle-aged adults, and the other intervention studied fibromyalgia patients.

## Perspective

In this section, we identify the most important findings to emerge from this review. Although forgiveness is consistently associated with better physical health, there have been relatively few studies, and most have been cross-sectional and correlational in nature.

### *There Have Been Relatively Few Forgiveness and Health Studies*

First, in the roughly 20 years since the study of forgiveness began in earnest, hundreds of studies have been conducted. Those that have examined any dimension of forgiveness and physical health comprise just 55 of these studies. This is a very small proportion of the total work on forgiveness. This raises the question as to *why*. There are several possible reasons. The most common participant under study by psychologists is the college student (Hanel & Vione, 2016) and variability of college student physical health is often much less than that of middle-aged and older adults. Hence, the most easily accessible participant of study is of less utility to those psychologists and other social scientists interested in studying forgiveness and physical health because variability in health outcomes is a necessary prerequisite of understanding health and illness. Also, health studies are infrequent because studying major health outcomes of forgiveness is not easily amenable to an experimental design. If we could create experimental manipulations to improve health, not only would forgiveness experiments be plentiful, but also other health-promoting experimental manipulations would be proliferating. In addition, health studies may be underrepresented because health conditions usually take a long time to develop and often the course of illness and its potential development into chronic illness or disease is unpredictable. Hence, the study of how forgiveness is related to health requires patience. Prospective research requires years or even decades to elapse before learning of the outcomes of the work. In summary, the study of forgiveness and health is hard to do with tools and samples most common and convenient for psychologists and other social scientists. Ideally, these studies could be done in college students using experimental methods and while measuring major illness and disease outcomes. But, this is not reality. Consequently, studies of forgiveness and physical health continue to be published more slowly than many other areas of interest.

### ***Forgiveness Is Consistently Related to Health***

The second notable conclusion from our review is that, although the number of studies is small, the consistency of the findings is remarkable. Across all 55 studies that we reviewed, 73 percent showed some indication that forgiveness had a favorable relationship or effect on health. As this is a qualitative review of the literature, we did not summarize effect sizes or examine moderating effects, but there is a good deal of variability in measures of forgiveness and health, designs, and samples and yet the results showed that in some categories of review (e.g., mixed samples) a minimum of 50 percent and in other categories of review (e.g., experiments/interventions) a maximum of 100 percent of the studies showed favorable connections between forgiveness and health.

One explanation for the consistent findings is that there is a robust connection between forgiveness and good health and good research has consistently identified it. Of course, other explanations exist. It could be widely prevalent selection bias in the samples, systematic measurement error, or other design flaws. Our review did not uncover any of these likely suspects to explain the consistency of the findings, and so we are inclined to support the hypothesis that forgiveness is healthy. That said, publication bias favors this outcome and 27 percent of the literature showing null results remains a substantial proportion of the studies. Studies showing null results did not differ noticeably from studies supporting the forgiveness and health hypothesis in design, sample size, sample composition, or forgiveness measures. It was interesting to observe that only one study of 13 using self-rated health as an outcome showed null results. No other difference in health measurement was evident. Another possibility is that the benefits of forgiveness apply to only some outcomes that have been over-studied.

### ***Most Evidence Is from Correlational Studies***

A third finding worth highlighting is that, as with many issues in human health, the evidence base is overwhelmingly correlational. In fact, 85 percent of the studies of forgiveness and health are based on cross-sectional, correlational designs and 72 percent of those studies show a beneficial association between forgiveness and health. Yet, the causal role of forgiveness in the broader health equation has not been established. Only two intervention studies show that forgiveness *causes* improvements in physical health. This is not to discount the value of correlational research. For instance, one of the landmark studies prompting the anti-smoking movement was based on correlational methods (Hammond & Horn, 1954). It is important to note, however, that to be more useful correlational studies need to employ large, representative samples and implement longitudinal or prospective designs that follow participants over extended periods of time. Correlational studies utilizing cross-sectional designs typically precede more sophisticated modeling of phenomena, so we expect that more advanced designs and insightful studies will continue to be published in the years to come.

### **Research Agenda**

Looking forward, the research needed to carefully evaluate the connection between forgiveness and physical health should possess important key features. Forthcoming research on forgiveness and health should employ longitudinal or prospective cohort designs that allow investigators to establish temporal precedence. In the current review, we have taken the perspective that forgiveness benefits health. But most of the literature cannot rule out the competing hypothesis that people in good physical health who are well rested and enjoying good vitality may simply be more willing or able to forgive. Some recent longitudinal research suggests that the time-lagged associations support a forgiveness → health model (Seawell, Toussaint, & Cheadle, 2014), but there are only a few studies and existing work is based on only two time points. Examining trajectories of change and daily reciprocal

influences of forgiveness and health may reveal other findings. If physical health does turn out to affect forgiveness, the importance of forgiveness for health is not diminished by that conclusion. In fact, it may be strengthened by it. If good physical health promotes forgiveness and forgiveness, in turn, promotes good physical health uniquely and independently, it may be that the eventual evidence will support a positive feedback loop model of forgiveness and health. Only future longitudinal work across adequate periods of time with many time points of data will reveal the answers.

Another key issue to address is the third-variable problem. The forgiveness and health link might be accounted for through personality traits (e.g. agreeableness, neuroticism) that correlate with both forgiveness and health. Common genetic contributors to both forgiving dispositions and good health might exist. Perhaps health behaviors, such as good sleep hygiene, lead to more forgiving and better health. Certainly, other dispositions, biological factors, and behaviors predispose people to be more forgiving, which might also lead to better health over time. In addition, people who are more emotionally and socially capable might attract cohorts who simply don't offend as often, leading to less harm and more propensity to forgive when a relational breach occurs. Future work should account for these confounding influences.

Forgiveness experiments and interventions can help to illuminate the causal ordering of forgiveness and health and control confounding variables, but they come with their own challenges for external validity and generalizability. Experiments that manipulate forgiveness and show changes in physical symptoms or perceptions of health are possible but are in short supply. Perhaps this is because the key factors involved in making immediate and meaningful change in forgiveness within an experimental laboratory setting that will produce a measurable change in health still remain elusive. Prayers, meditations, and relaxation strategies have effectively promoted forgiveness (Oman, Shapiro, Thoresen, Plante, & Flinders, 2008), but few connections to physical health have been made. Taking what has been learned from psycho-educational intervention studies and applying it to an experimental social psychological or personality paradigm could yield invigorating insights into forgiveness and health. For instance, what is the most effective and efficient emotional forgiveness manipulation that might make a just noticeable difference in immediate physical health? Future laboratory studies are a must.

Little of the research has a strong theoretical foundation. Most articles clearly define forgiveness and attend to careful measurement of health, but no model ties together the linkages between forgiveness and health. Perhaps the stress-and-coping model of forgiveness (Worthington & Scherer, 2004) provides guidance. Research designed explicitly to test the propositions of the stress-coping-theory of forgiveness could contribute to a consistent paradigmatic body of work that would offer easier comparison across studies and more useful meta-analytic summaries. To develop a stress-and-coping paradigm of forgiveness and health research, standardized measures of the stress of unforgiveness with construct-valid items (e.g., "Holding this grudge has been very stressful and makes me feel bad") and similar construct-valid measures of forgiveness as a coping mechanism per se (e.g., "I've chosen to deal with the pain and stress of being hurt in this way through forgiveness") are needed. Studies must evaluate coping through forgiveness as both a potential moderator and mediator of stress and health relationships. Coping through forgiveness may also be relevant for lifetime interpersonal and/or intrapersonal stress, as well as stressful events occurring at community, social, national, and international levels.

In a reversal of the usual psychological literature, the understanding of forgiveness and health has been largely focused on middle-aged and older adults and individuals with chronic illness and disease—not undergraduates. Even with less variability in physical health among young people than among older people, we still need to ask, how does forgiveness relate to common health issues with relatively healthy adults—i.e., colds, flus, stomach viruses, allergies, headache, and indigestion? Almost 30 years ago a landmark study in stress and health showed that stress was related to susceptibility to the common cold in participants with an average age of 33 (Cohen, Tyrrell, & Smith, 1991).



Could forgiveness moderate or mediate these associations? Is it reasonable to hypothesize that the stress of carrying offenses and burdens could translate into increased risk for one of humankind's most common afflictions and that this risk could be to some extent mitigated by forgiveness?

## Conclusion

The present review consists of 55 studies published in almost 20 years. Of these studies, 73 percent showed some connection between forgiveness and health. Clearly, there is promise in pursuing research in this area. We no longer face down the scary, saber-tooth tiger, for which our evolved neuro-endocrine systems were designed, but instead there is no shortage of opportunities to disappoint and offend ourselves and others. Indeed, such opportunities for disappointment and offense have existed since time immemorial and while we have solved "the tiger problem," we are seemingly nowhere near solving the "offensive experiences problem." The weight of intrapersonal and interpersonal transgressions and the stress created by these events could quite possibly be the most underrated source of stress in our modern world. How we cope with this, by forgiving or not, appears to have consequences for our physical health. Future work should aim to improve the methods, samples, and measures that provide the basis of our conclusions. Only with dedicated efforts to scrutinize the connection between forgiveness and health will we know whether forgiving can help improve or prolong our way of healthy living. If the results of future sophisticated designs and analyses remain consistent with our current knowledge, hindsight may show us that forgiveness has been one of the most overlooked remedies to what ails our physical health as a species.

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