LIFE, CHANGE, AND STRESS

Holmes, T. H., & Rahe, R. H. (1967). The Social Readjustment Rating Scale. *Journal of Psychosomatic Research, 11*, 213-218.

Everyone knows about stress. For most of you, most of the time, stress is an unpleasant, negative experience. Stress is not easy to define, but one way of looking at it is to think of stress as any emotion in its extreme form. In this sense, extreme fear, anger, sadness, or even happiness could produce stress. Think for a moment about the last time you were under a heavy amount of stress: the kind of stress that lasts more than a few hours or even a few days. Maybe you had to move to a new city, had a legal problem, had difficulties in a relationship with another person, had a job change, lost your job, experienced the death of someone close to you, were injured, or experienced some other major stressful change. You know the kind of stress I mean—it goes on for a while and you have to cope with it every day. What happened to you? How well did you cope? Did you find that your health deteriorated in some way?

The connection between stress and illness is the focus of this chapter and this famous article by Thomas Holmes and Richard Rahe. Take a moment to answer this question: Do you believe in a clear connection between stress and illness? I bet you answered with a resounding "Yes!" But if I had asked this same question of people 20 or 30 years ago, only a few would have believed that such an association existed. Together, psychology and medicine over the past couple of decades have established with a high degree of certainty that this connection does indeed exist, and they have worked to understand it and intervene in it. For the behavioral sciences, those who are primarily concerned with this issue are called health psychologists. Notice that the journal in which the article appears deals with psychosomatic illness. Psychosomatic illness refers to health problems that are caused primarily by psychological factors rather than physical ones. Such illnesses are real; the discomfort, pain, and suffering exist medically. Victims of psychosomatic problems should not be confused with *hypochondriacs*, who suffer from imaginary or exaggerated illnesses.

Many studies by health psychologists have established that when certain external changes occur in people's lives requiring them to make major internal, psychological adjustments, there is a tendency for a higher incidence of illness. These changes have been termed *life stress*. The amount of life stress you experience varies over time. There may have been some periods in your past (or present) when many changes were occurring, while at other times things were relatively stable. Life stress also varies greatly from person to person. The overall number of changes that occur in your life is different from the number in someone else's. So if I were to ask you how much life stress you have experienced over the past year, what would you say? A lot? Not much? A moderate amount? These kinds of vague judgments were not much use to scientists who wanted to study the relationship between life stress and illness. Therefore, the first question in this area of research that needed to be answered was this: How can life stress be measured?

Obviously, researchers could not bring people into a laboratory, expose them to stressful events for a short time, and then expect to see a sudden appearance of illness. First, this would be unethical, and second, it would not represent how stress works in real life. To tackle this problem, Holmes and Rahe developed a written scale to measure life stress. They acknowledged in their article that previous attempts to examine a person's level of stress only determined the number and types of stressful events. They proposed to take this line of reasoning one step further and develop a way to measure the size or magnitude of various stressful life experiences. The idea behind this was that if such a measure could be developed, then it would be possible to obtain a person's score in terms of life stress and relate this to the status of the person's health.

METHOD

From their clinical experiences, Holmes and Rahe compiled a list of 43 life events that people commonly feel are stressful, in that they require a person to make psychological adjustments in order to adapt to the event. This list was then presented to nearly 394 subjects, who were asked to rate each item on the list for the amount of stress produced by the event. The actual instructions that were given to the subjects read, in part:

> In scoring, use all of your experience in arriving at your answer. This means personal experience where it applies as well as what you have learned to be the case for others. Some persons accommodate to change more readily than others; some persons adjust with particular ease or difficulty to only certain events. Therefore, strive to give your opinion of the average degree of adjustment necessary for each event rather than the extreme …."Marriage" has been given an arbitrary value of 500. As you complete each of the remaining events, think to yourself, "Is this event indicative of more or less readjustment than marriage? Would the readjustment take longer or shorter to accomplish?" (p. 213)

Subjects were then instructed to assign a point value to each event relative to the 500 value given to marriage. If they saw an event as requiring more readjustment than marriage, the point value would be higher, and vice versa. All the subjects' ratings for each item were averaged and then divided by 10 to arrive at a score for the individual items.

This was a study with a rather simple and straightforward method. The importance and value of the research was in the results and the applications of the measuring device, which they called the *Social Readjustment Rating Scale* (SRRS).

RESULTS

Table 1 lists the 43 life events in order by rank, and the average point value assigned to each one by the subjects in the study. You can see that *death of a spouse* was rated the most stressful, whereas *minor violations of the law* was rated as the least stressful of the items included on the list. You might notice that not all the items are what you might consider to be negative. However, events such as Christmas, marriage, and, yes, even a vacation, can be stressful in terms of Holmes and Rahe's definition of *stress*: need for psychological readjustment to the event.

TABLE 1 The Social Readjustment Rating Scale

RANK	LIFE EVENT	MEAN VALUE
1	Death of spouse	100
2	Divorce	73
3	Marital separation	65
4	Jail term	63
5	Death of close family member	63
6	Personal injury or illness	53
7	Marriage	50
8	Fired at work	47
9	Marital reconciliation	45
10	Retirement	45
11	Change in health of family member	44
12	Pregnancy	40
13	Sex difficulties	39
14	Gain of new family member	39
15	Business readjustment	39
16	Change in financial state	38
17	Death of close friend	37
18	Change to different line of work	36
19	Change in number of arguments with spouse	35
20	Large mortgage	31
21	Foreclosure of mortgage or loan	30
22	Change in responsibilities at work	29
23	Son or daughter leaving home	29
24	Trouble with in-laws	29
25	Outstanding personal achievement	28
26	Wife begins or stops work	26
27	Begin or end school	26
28	Change in living conditions	25
29	Revision of personal habits	24
30	Trouble with boss	23
31	Change in work hours or conditions	20
32	Change in residence	20
33	Change in schools	20
34	Change in recreation	19
35	Change in church activities	19
36	Change in social activities	18
37	Small mortgage	17
38	Change in sleeping habits	16
39	Change in number of family get-togethers	15
40	Change in eating habits	15
41	Vacation	13
42	Christmas	12
43	Minor violations of the law	11

(Adapted from p. 216.)

In order to check for consistency in the ratings, the researchers divided the subjects into several subgroups and correlated their ratings of the items. Some of these subgroups compared were male versus female, single versus married, college-educated versus no college, white versus black, younger versus older, higher socioeconomic versus lower socioeconomic, religious versus nonreligious, and so on. For all the subgroup comparisons, the correlations were very high, indicating a strong degree of agreement among the subjects. What this meant was that Holmes and Rahe could assume with a reasonable amount of confidence that this scale could be applied to all people with an approximately equal degree of accuracy.

Holmes and Rahe note in their discussion a clear common theme applied to all the life events listed on their scale. Every time one of these stressful events occurs in someone's life, they explained, it requires some degree of adaptation, change, or coping. "The emphasis," they wrote, "is on change from the existing steady state and not on psychological meaning, emotion, or social desirability" (p. 217). This explains why some of the items may be interpreted as positive by some and negative by others, but either way, change is required and stress is produced.

Remember, this article explains the research behind the development ~ of a method for measuring life stress. If you want to try it yourself, just look down the list and circle the life changes that have occurred in your life over the past 12 months. Each change has a certain number of points assigned to it, called *life change units* (LCUs). Calculate your LCU total. This gives you an estimate of your amount of life stress. Take a moment now to find your score. Now that you've done this, it probably feels as if something is missing, doesn't it? Well, what's missing is what your score means about your health. This, after all, was the researchers' whole point in developing the scale to begin with.

To address this, Holmes and Rahe didn't stop with developing the SRRS, but went on together and separately to examine the relationship between their scale and the probability of illness.

SUBSEQUENT RESEARCH

In the late 1960s, the SRRS began to be used in many studies as a tool for examining the stress-illness relationship. The value of the scale rested on its ability to predict illness based on people's total LCU scores.

In early studies, several thousand people were asked to fill out the SRRS and to report their histories of illness. Figure 1 graphically illustrates the overall findings of these studies (see Holmes & Masuda, 1974). In another study of 2,500 naval personnel, LCUs for the past six months were recorded using the SRRS just prior to shipboard tours of duty. During the six-month tour, those with fewer than 100 LCUs reported an average of 1.4 illnesses, those with between 300 and 400 averaged 1.9 illnesses, and those with between 500 and 600 suffered 2.1 illnesses (Rahe, Mahan, & Arthur, 1970). These and other studies over the years have generally supported Holmes and Rahe's contention that the SRRS can be helpful in predicting stress-related illness. The findings reported here will also give you an idea of what your score on the scale means.

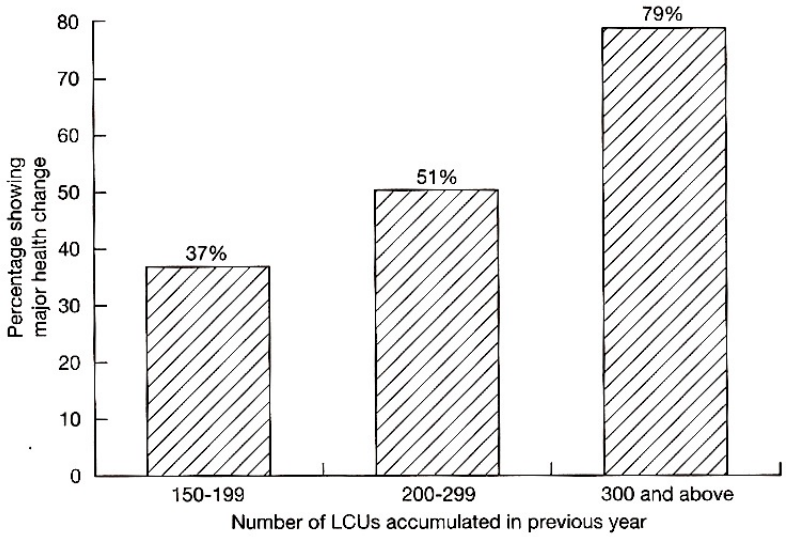

FIGURE 1 Relationship between life change units and illness.

Think of your score (especially if it's high) as an important indicator of how stressful your life is and what impact this stress could have on your health. However, before you become too worried, there have been several meaningful criticisms of the SRRS and its ability to predict illness that need to be discussed.

CRITICISMS

Since Holmes and Rahe developed their SRRS, many researchers have expressed serious concerns about its accuracy and usefulness (see Taylor, 2002, for a complete review of these criticisms). One of the most widely expressed criticisms regards the inclusion of both positive and negative life events in the same scale, as well as both events that are in your control (events of choice, such as marriage) and events over which you have no control (such as the death of a friend). Research has demonstrated that certain events such as those that are sudden, negative, and out of your control are much more predictive of illness than are positive, controllable life changes.

Others have maintained that the scale is flawed in that it does not take into account your *interpretation* of a particular event. For example, retirement for one person may mean an end of a career, being *forced out to pasture*, while to another it is escape from drudgery into freedom. One researcher has suggested that a more accurate scale would be one that allows a person to check an event and also rate it on some measure of severity. Cohen, Kamarck, & Mermelstein, developed a scale designed to do this called the *Perceived Stress Scale* (1983).

In addition, the way the research has related the SRRS to illness has been questioned. When carefully analyzed statistically, the predictive relationship between your LCD score and illness is rather weak. In fact, SSRI scores account for only about 10% of the total variation among people who become ill. In other words, if you examine 1,000 people to see who becomes sick over a six-month period, there will be a great variation in the individual factors leading to their illness or lack of illness. If you have them all complete an SRRS, you will find that out of all the possible reasons for health variation, their LCU scores explain about 10% of it. This is, nevertheless, a statistically significant correlation that confirms the ability of the SRRS to predict illness. However, it also says that many *other* factors are involved in illness. Another way to look at it is, if you know someone's LCU score, your chances of predicting the future of that person's health are significantly better than if you did *not* have their score.

So, you might ask, if the SRRS has been so severely criticized, why is it so important and why is it in this book? Good question. Remember, some of the breakthroughs in the history of psychology were subsequently found to be lacking in some way, but that doesn't diminish the impact they had on our view of human behavior. This work of Holmes and Rahe, the SRRS, *in spite of* its limitations, continues to hold its place as a popular stress-research tool, more than 30 years after its inception.

RECENT APPLICATIONS

Although other tools for measuring stress have been, and are being, developed, the SRRS is still chosen frequently by researchers. As proof of the scale's ongoing popularity, a tally of the studies citing Holmes and Rahe's scale between 2000 and the middle of 2003 as this edition was being prepared, totaled 315 articles! This was more citations than any other study in this book, and similar statistics on the influence of Holmes and Rahe's scale can be found for virtually any year throughout the last three decades. It is impossible to discuss here even a representative sampling of these studies, so a brief mention will be made of several recent articles to convey the wide variety of research areas still making use of the SRRS.

One study incorporating the SRRS, examined the relationship between life events and feelings of hopelessness (Haatainen et al., 2003). The researchers followed adults among the general population (without any diagnosed mental illness) over two years. Four percent of those who were not feeling hopeless at the beginning of the two years and 56% of who were experiencing hopelessness at the beginning of the two years reported hopelessness at the end of the two-year period. The life events most responsible for continuing or developing hopelessness were, worsening of financial situation and interpersonal conflicts at work. However, the authors point out that positive changes in the subjects' living situations appeared to protect them from becoming hopeless (for more on the topic see the study by Seligman on learned helplessness).

A study comparing alcoholics with nonalcoholics adapted Holmes and Rahe's scale to examine the link between stress and alcohol abuse (Fouquereau et al., 2003). The participants were asked to contemplate imagined scenarios involving two, combined life-change events or a stressful social situation. The alcoholics and nonalcoholics rated the scenarios as equally stressful, but rated the urge to drink alcohol in response to the situation very differently. 'The nonalcoholics reported little stimulus to drink from any combination of items, whereas the alcoholics not only perceived the individual items as stimulating an urge to drink, but also used the same cognitive rule in judging the combined urge to drink as they used in judging the combined stress" (p. 669).

The authors suggest that these findings may be important in helping recovering alcoholics find ways of reducing stress in their lives and using strategies other than drinking for coping with stressful life events.

Finally, an important cross-cultural study questioned the validity of applying Western definitions and theories about stress to other cultures (Laungani, 1996). Using India as an example, the author found that even the word "stress" itself does not translate well into other languages. He further contends that trying to overlay Western conceptualizations of stress, such as those tapped by the SRRS, onto other cultures, may not provide an accurate picture of the nature and experience of stress for large portions of the world's population. For example, people in cultures that are described as more *collectivistic*, such as India, Japan, or Israel, where the welfare of the larger group takes precedence over the welfare of a single person, may experience less life stress or may perceive entirely different life events as stressful than members of Western "individualistic" cultures, such as the United States, where the SRRS was developed (for a more complete discussion of these cultural variations, see Triandis's work).

Other applications of the SRRS in the study of human behavior include, but are not limited to, cigarette smoking, immune response, posttraumatic stress disorder, police officer burnout, child abuse, breast cancer, diabetes, medical school success, chronic illnesses, effects of war on spouses and children of deployed soldiers, HIV infection and AIDS, the psychological effects of natural disasters, divorce, and the aging process.

CONCLUSION

The relationship between stress and illness, while real, is complex and not a simple matter to study. Rahe himself has suggested that in addition to a simple LCU score, several factors present in each individual must be considered to predict psychosomatic illness:

1. How much experience you have had in the past with stressful events.

2. Your coping skills; that is, your ability to psychologically defend yourself in times of life stress.

3. The strength of your physiological systems (such as your immune system) to defend you against the life stress that you are unable to cope with psychologically.

4. How you deal with illness when it does occur (such as practicing recuperative behaviors and seeking medical help).

Psychology and medicine, working together, are closing in on an understanding of the psychological component of illness. It has become clear to both fields that successful treatment of illness must involve the entire person: mind and body.

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