April 12, 2010

Is Marriage Good for Your Health?

By TARA PARKER-POPE

In 1858, a British epidemiologist named William Farr set out to study what he called the "conjugal condition" of the people of France. He divided the adult population into three distinct categories: the "married," consisting of husbands and wives; the "celibate," defined as the bachelors and spinsters who had never married; and finally the "widowed," those who had experienced the death of a spouse. Using birth, death and marriage records, Farr analyzed the relative mortality rates of the three groups at various ages. The work, a groundbreaking study that helped establish the field of medical statistics, showed that the unmarried died from disease "in undue proportion" to their married counterparts. And the widowed, Farr found, fared worst of all.

Farr's was among the first scholarly works to suggest that there is a health advantage to marriage and to identify marital loss as a significant risk factor for poor health. Married people, the data seemed to show, lived longer, healthier lives. "Marriage is a healthy estate," Farr concluded. "The single individual is more likely to be wrecked on his voyage than the lives joined together in matrimony."

While Farr's own study is no longer relevant to the social realities of today's world — his three categories exclude couples living together, gay couples and the divorced, for instance — his overarching finding about the health benefits of marriage seems to have stood the test of time. Critics, of course, have rightly cautioned about the risk of conflating correlation with causation. (Better health among the married sometimes simply reflects the fact that healthy people are more likely to get married in the first place.) But in the 150 years since Farr's work, scientists have continued to document the "marriage advantage": the fact that married people, on average, appear to be healthier and live longer than unmarried people.

Contemporary studies, for instance, have shown that married people are less likely to get

pneumonia, have surgery, develop cancer or have heart attacks. A group of Swedish researchers has found that being married or cohabiting at midlife is associated with a lower risk for dementia. A study of two dozen causes of death in the Netherlands found that in virtually every category, ranging from violent deaths like homicide and car accidents to certain forms of cancer, the unmarried were at far higher risk than the married. For many years, studies like these have influenced both politics and policy, fueling national marriage-promotion efforts, like the Healthy Marriage Initiative of the U.S. Department of Health and Human Services. From 2006 to 2010, the program received $150 million annually to spend on projects like "divorce reduction" efforts and often cited the health benefits of marrying and staying married.

But while it's clear that marriage is profoundly connected to health and well-being, new research is increasingly presenting a more nuanced view of the so-called marriage advantage. Several new studies, for instance, show that the marriage advantage doesn't extend to those in troubled relationships, which can leave a person far less healthy than if he or she had never married at all. One recent study suggests that a stressful marriage can be as bad for the heart as a regular smoking habit. And despite years of research suggesting that single people have poorer health than those who marry, a major study released last year concluded that single people who have never married have better health than those who married and then divorced.

All of which suggests that while Farr's exploration into the conjugal condition pointed us in the right direction, it exaggerated the importance of the institution of marriage and underestimated the quality and character of the marriage itself. The mere fact of being married, it seems, isn't enough to protect your health. Even the Healthy Marriage Initiative makes the distinction between "healthy" and "unhealthy" relationships when discussing the benefits of marriage. "When we divide good marriages from bad ones," says the marriage historian Stephanie Coontz, who is also the director of research and public education for the Council on Contemporary Families, "we learn that it is the relationship, not the institution, that is key."

Some of today's most interesting research on the relationship between marriage and health is being led by a pair of researchers at Ohio State University College of Medicine. The duo, Ronald Glaser and Jan Kiecolt-Glaser, are also, fittingly, married to each other.

Glaser and Kiecolt-Glaser's scholarly collaboration has its roots in a chance encounter during a faculty picnic in October 1978 on the Ohio State campus. Glaser, who is a viral immunologist, spotted an attractive woman standing with members of the psychiatry

faculty. Although their eyes met only briefly, he caught a glimpse of her name tag. Intrigued, he tried to track her down, calling the psychiatry department chairman to ask if he knew a petite blonde on staff with a name like “Pam Kiscoli.” The department chairman figured out that Glaser was talking about a new assistant professor named Jan Kiecolt. Glaser and Kiecolt eventually met for lunch at the university’s hospital cafeteria. They married a year later, in January 1980.

The coupling resulted in more than romance. The two scientists were fascinated by each other’s work, which they often discussed over meals or while jogging together. Glaser suggested that they collaborate professionally, but finding common ground was a challenge: he studied virology and immunology; she was a clinical psychologist who focused on assertiveness and other behavior. In the early 1980s, however, Kiecolt-Glaser came across a book on the emerging field of psychoneuroimmunology, which concerns the interplay between behavior, the immune and endocrine systems and the brain and nervous system. The couple were intrigued by a science that lay at the intersection of their disciplines. Today, the two disagree on exactly how their professional collaboration began. “He says I started it,” Kiecolt-Glaser told me. “But I say he started it.”

In their first research collaboration, they sought to measure the effect of psychological stress on the immune system. Although earlier studies had established that trauma and other major stress — like the death of a loved one or prolonged sleep deprivation — weakened the immune system, the Glasers wanted to know if lesser forms of stress, like those associated with the workplace or graduate school, had a similar effect.

The Glasers, who worked at Ohio’s State’s medical school, had ready access to an ample supply of stressed-out students, and so they decided to study the toll exacted by school pressure. They took blood samples from a set of students early in the semester and then did so again in the middle of final exams. The Glasers discovered that the stress of examination time seemed to cause a significant weakening of the students’ immune response: by examination time, the medical students showed a significant drop in so-called natural killer cells, a type of white blood cell that battles viruses and helps prevent cancer.

For their second collaboration, the Glasers turned their attention to domestic strife. They wondered about the role that relationships play in health and about the effects of marital stress, which, like school pressure, can be a source of nontraumatic but chronic strain. In what was to be the first of their many studies on marriage and health, the Glasers recruited 76 women, half of whom were married; the other half were separated or had divorced. The Glasers wanted to identify which married women were in troubled relationships as well as

which of the women who were separated or divorced from their husbands were emotionally struggling the most. They did this by using marital-quality scales, types of questionnaires that ask couples to indicate agreement or disagreement with statements like “If I had to do it over again, I would marry the same person” or “We often do things together.” Next, using blood tests, the Glasers measured the women’s immune-system responses, tracking their levels of antibody production and other indicators of immunity strength. The results showed that the women in unhappy relationships and the women who remained emotionally hung up on their ex-husbands had decidedly weaker immune responses than the women who were in happier relationships (or were happily out of them).

Though pleased with this study, the Glasers knew that they had succeeded in taking the measure of marital happiness and health only at a single moment. The couple were also curious to study the effect of marital stress as it unfolded in real time. What happens to the body minute by minute, hour by hour, when couples engage in hostile marital disputes? To find this out, they recruited a study group of 90 seemingly happy newlywed couples. Each couple was hooked up to tubes so that blood samples could be drawn from the pair at regular intervals, and the husband and wife were seated face to face. Obscured by a curtain, the researchers watched the couples on video monitors; nurses took the blood samples. The participants, as they had been prompted to do, discussed their most volatile topics of marital conflict, like housework, sex or interference from a mother-in-law. “You wouldn’t think in a study situation that they would tear into each other,” Glaser, who is now the director of the Institute for Behavioral Medicine Research, told me. “But they get into it.” As expected, the couples who exhibited the most negative and hostile behavior during the conflict discussion showed the largest declines in immune-system function during the 24-hour study period.

These data strongly suggested that marital stress could affect the body in striking ways, but the Glaser team had yet to prove that marital conflict had any truly meaningful or lasting effect on health. Kiecolt-Glaser had an idea for another study that would meet this higher standard. She had read about a strange tool used by her dermatology colleagues: a small plastic suction device designed to leave eight tiny blisters on the arm and allow monitoring of the immune-system response at the wound sites. Kiecolt-Glaser’s proposal was to use this blistering device to measure how quickly or slowly physical wounds healed among married couples who had undergone different levels of marital stress.

The experiment had two phases. Each married couple, after their forearms were subjected to the blistering procedure, were asked to talk together for a half-hour: on one occasion they

discussed topics chosen to elicit the couples' supportive behaviors; on another day, after undergoing the blistering procedures again, they discussed topics selected to evoke conflict and tension and tried to resolve them. Before subjecting others to the blistering regimen, each of the Glasers had the device secured to his or her respective forearm to have his or her skin blistered. The sensation is comparable to "someone gently pinching your arm," Kiecolt-Glaser told me. Nonetheless, the Glasers knew it would be a tough sell to convince others couples to undergo the blistering procedure as well as two weeks of subsequent monitoring of the wounds as they healed. A study grant allowed them to offer $2,000 in total compensation to any couple willing to take part in the experiment. They managed to recruit 42 married couples for the study.

The results were remarkable. After the blistering sessions in which couples argued, their wounds took, on average, a full day longer to heal than after the sessions in which the couples discussed something pleasant. Among couples who exhibited especially high levels of hostility while bickering, the wounds took a full two days longer to heal than those of couples who had showed less animosity while fighting.

Published in 2005 in The Archives of General Psychiatry, the Glasers' findings help explain epidemiological data showing that couples in troubled marriages appear to be more susceptible to illness than happier couples. The results may also have practical relevance for surgical patients, for instance, waiting for incisions to heal. But most important, the study offered compelling evidence that a hostile fight with your husband or wife isn't just bad for your relationship. It can have a profound toll on your body.

Kiecolt-Glaser told me that the overall health lesson to take away from the new wave of marriage-and-health literature is that couples should first work to repair a troubled relationship and learn to fight without hostility and derision. But if staying married means living amid constant acrimony, from the point of view of your health, "you're better off out of it," she says.

Last year, The Journal of Health and Social Behavior published a study tracking the marital history and health of nearly 9,000 men and women in their 50s and 60s. The study, which grew out of work by researchers at the University of Chicago, found that when the married people became single again — either by divorce or because of the death of a spouse — they suffered a decline in physical health from which they never fully recovered. These men and women had 20 percent more chronic health issues, like heart disease and diabetes, than those who were still married to their first husband or wife by middle age. The divorced and widowed also had aged less gracefully, reporting more problems going up and down stairs

or walking longer distances.

Perhaps the most striking finding concerned single people who had never married. For more than 100 years, scientists have speculated that single people, because they generally have fewer resources, lower income and perhaps less logistical and emotional support, have poorer health than the married. But in the Chicago study, people who had divorced or been widowed had worse health problems than men and women who had been single their entire lives. In formerly married individuals, it was as if the marriage advantage had never existed.

Does marrying again benefit those who divorce, in terms of health? In the Chicago study, remarriage helped only a little. It seemed to heal emotional wounds: the remarried had about the same risk for depression as the continuously married. But a second marriage didn't seem to be enough to repair the physical damage associated with marital loss. Compared with the continuously married, people in second marriages still had 12 percent more chronic health problems and 19 percent more mobility problems. "I don't think anyone would encourage people to stay in a marriage that is really making them miserable," says Linda J. Waite, a University of Chicago sociologist and an author of the study. "But try harder to make it better." Even if marital problems seem small, Waite says, the data suggest it's wise to intervene early and try to resolve them. "If you learn to how to manage disagreement early," she says, "then you can avoid the decline in marital happiness that follows from the drip, drip of negative interactions."

Other researchers have also studied how the "drip, drip" of negativity can erode not only a marriage itself but also a couple's physical health. A number of epidemiological studies suggest that unhappily married couples are at higher risk for heart attacks and cardiovascular disease than happily married couples. In 2000, The Journal of the American Medical Association published a three-year Swedish study of 300 women who had been hospitalized with severe chest pains or a heart attack; the study found that those who reported the highest levels of marital stress were nearly three times as likely to suffer another heart attack or require a bypass or other procedure. It is notable that these increased risks weren't associated with other forms of stress. For instance, women who were stressed-out at work weren't at any higher risk for a second episode of heart problems than women who were happy in their jobs.

Of course, all couples — happy or unhappy — are bound to experience some form of marital conflict. Surely this does not mean everyone is doomed to ill health; some conflicts are better than others. The University of Utah psychology professor Timothy W. Smith has addressed this question, studying how what he calls the "emotional tone" of conflict affects

heart risk. In one study, he recruited 150 couples, most of whom were in their 60s and married for an average of 36 years. All were in general good health with no signs of heart disease. Smith collected video recordings of the couples discussing stressful topics like money management or housework. The arguments were then "coded" to indicate the number of warm, hostile and controlling statements and words that were used in the course of the dispute. In addition, the couples were put in heart-scanning machines to measure coronary calcium levels, which are a useful indicator of heart-disease risk. Smith then compared each person's conflict style with their coronary calcium score.

Smith's results suggest that there are important differences between men and women when it comes to health and the style of conflict that can jeopardize it. The women in his study who were at highest risk for signs of heart disease were those whose marital battles lacked any signs of warmth, not even a stray term of endearment during a hostile discussion ("*Honey*, you're driving me crazy!") or a minor pat on the back or squeeze of the hand, all of which can signal affection in the midst of anger. "Most of the literature assumes that it's how bad the arguments get that drives the effect, but it's actually the lack of affection that does it," Smith told me. "It wasn't how much nasty talk there was. It was the lack of warmth that predicted risk."

For men, on the other hand, hostile and negative marital battles seemed to have no effect on heart risk. Men were at risk for a higher coronary calcium score, however, when their marital spats turned into battles for *control*. It didn't matter whether it was the husband or wife who was trying to gain control of the matter; it was merely any appearance of controlling language that put men on the path of heart disease.

In both cases, the emotional tone of a marital fight turned out to be just as predictive of poor heart health as whether the individual smoked or had high cholesterol. It is worth noting that the couples in Smith's study were all relatively happy. These were husbands and wives who loved each other. Yet many of them had developed styles of conflict that took a physical toll on each other. The solution, Smith noted, isn't to stop fighting. It's to fight more thoughtfully. "Difficulties in marriage seem to be nearly universal," he said. "Just try not to let fights be any nastier than they need to be."

Researchers have also started to examine the salutary health effects of social relationships, including those of a good marriage. In one recent study, James A. Coan, an assistant professor of psychology and a neuroscientist at the University of Virginia, recruited 16 women who scored relatively high on a questionnaire assessing marital happiness. He placed each woman in three different situations while monitoring her brain with an f.M.R.I.

machine, which offers a way to observe the brain's response to almost any kind of emotional stimulation. In one situation, to simulate stress, he subjected the woman to a mild electric shock. In a second, the shock was administered, but the woman held the hand of a stranger; in a third, the hand of her husband.

Both instances of hand-holding reduced the neural activity in areas of the woman's brain associated with stress. But when the woman was holding her husband's hand, the effect was even greater, and it was particularly pronounced in women who had the highest marital-happiness scores. Holding a husband's hand during the electric shock resulted in a calming of the brain regions associated with pain similar to the effect brought about by use of a pain-relieving drug.

Coan says the study simulates how a supportive marriage and partnership gives the brain the opportunity to outsource some of its most difficult neural work. "When someone holds your hand in a study or just shows that they are there for you by giving you a back rub, when you're in their presence, that becomes a cue that you don't have to regulate your negative emotion," he told me. "The other person is essentially regulating your negative emotion but without your prefrontal cortex. It's much less wear and tear on us if we have someone there to help regulate us."

With so much evidence establishing a link between marital stress and health, a new generation of research is set to explore the ways in which couples can mitigate the damaging effects of relationship stress. The Glasers are now conducting studies testing whether regular supplements of fish oil, rich in omega-3 fatty acids, can mitigate some of the physical symptoms of stress on the immune system.

The couple are also embarking on a new study looking at the interplay between nutrition and marital stress. Earlier research at Ohio State showed that when study subjects were given intravenous fat injections during times of stress, it took longer for triglycerides, fats that are associated with heart disease, to leave the bloodstream. But Kiecolt-Glaser is more interested in the real-world equivalent of the study: What happens to the body's ability to cope with fats when couples fight at dinnertime? To find out, she's planning to feed married couples two types of meals — one relatively healthful meal and one high-fat meal equivalent to fast food. During the meal the couples will be asked to discuss topics of high stress, and a blood analysis will offer a glimpse of the effect that mealtime conflict has on the body's ability to metabolize fats. "It's an ideal way," Kiecolt-Glaser says, "to look at what happens to couples in the real world, where so many family conflicts happen over a meal."

For the Glasers, their nearly 30 years of professional collaboration have not only given them new insights into the role of stress and health but have also helped them in their own marriage. Like every married couple, they have their disagreements, Glaser told me. But years of watching married couples interact and measuring the subsequent physical toll that conflict takes on their bodies has taught the Glasers the importance of taking time off together and making sure their disagreements don't degenerate into personal attacks. "Don't fight dirty," he advised. "You never go far enough down the road where you hurt each other. We know enough to avoid those kinds of arguments."

Kiecolt-Glaser added that the couple's research shows that some level of relationship stress is inevitable in even the happiest marriages. The important thing, she said, is to use those moments of stress as an opportunity to repair the relationship rather than to damage it. "It can be so uncomfortable, even in the best marriages, to have an ongoing disagreement," she said. "It's the pit-in-your-stomach kind of thing. But when your marital relationship is the key relationship in your life, a disagreement is really a signal to try to fix something."

Tara Parker-Pope is the Well columnist for The New York Times and the author of "For Better: The Science of a Good Marriage," to be published next month.