A study published online June 16, 2016 in the Journal of Occupational and Environmental Medicine found that working long-hour schedules over many years increases the risk of heart disease, non-skin cancer, arthritis, and diabetes — particularly among women.

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What was this study seeking to determine? Has this been done before?

The study was seeking to determine if the risk of developing problems like heart disease, lung disease, cancer, and diabetes is increased in people who work long hours. The study also looked at differences between men and women with regard to these risks. This has been done before with short-term health problems, but the impact of working long hours on the long-term risk of developing chronic disease later in life has not been studied as well. This is because of the complexity and difficulty involved in collecting this type of information over a long period of time.

How were the data obtained for this study? How long were the subjects followed?

The data were collected by using survey information provided by participants. The survey started in 1979 and ended in 2010. The participants were interviewed once a year from 1979 to 1994 and then every two years from 1996 to 2010. They were followed for a total of 32 years.

Who were the subjects?

The subjects were 12,686 men and women across the United States aged 14 to 22 years participating in the 1979 National Longitudinal Survey of Youth. By the time of the completion of the study in 2010, the average age of the participants was 49.6 years, and 7,565 of the original 12,686 participants remained in the study for the entire duration. Fifty-one percent of the participants were men, and 49 percent were women.

How did the researchers define and measure hours worked?

Work hours were defined and measured based on what was reported by participants in the survey. The researchers took the average number of hours worked per week over the entire 32 years of the study. If a respondent worked at two or more jobs over the course of a week, the sum of the hours worked at all of the jobs was used to determine the hours worked during that week.
week. Seventy-three of the 7,565 respondents did not work full time at all over the period of the study and were not included in the final sample of 7,492 people.

What health conditions did the researchers study, and how did they obtain the data?

The health conditions that the researchers looked at were heart disease, non-skin cancers, arthritis, diabetes, chronic lung disease, asthma, depression, and high blood pressure. This information was also obtained based on what was reported by the participant. The researchers asked the participants if a doctor had ever diagnosed them with any of the conditions above. The participants were asked about these health conditions starting when they turned 40 and then again upon turning 50.

What were the results?

The study showed that arthritis and depression were the most commonly reported health conditions among participants. Approximately 28 percent of participants worked 30 to 40 hours per week, 56 percent worked 41 to 50 hours per week, 13 percent worked 51 to 60 hours per week, and 3 percent worked more than 60 hours per week. People working 51 to 60 hours per week were found to be more likely to develop heart disease, as were those working more than 60 hours per week. Those working more than 40 hours per week were more likely to develop arthritis than those working less than 40 hours. There was no difference based on hours worked on the risk of chronic lung disease, asthma, depression, or high blood pressure.

Did the study reveal any differences concerning women or other subgroups?

The risks for women working long hours was found to be higher in women than in men. Men actually had a decreased risk of heart disease, lung disease, and depression when working moderately long hours (41 to 50 hours per week). In women, there was a higher risk of heart disease, cancers, arthritis, and diabetes when working long hours. The study found that the longer the hours, the higher the risk in women.

When were the subjects asked to report these chronic diseases, and what does that tell us about the results?

Subjects were asked to report chronic diseases after turning 40 years old and again after turning 50. By 2010 all of the participants had turned 40, but only half had turned 50. This tells us that the risk they evaluated was actually the risk of developing these diseases at a young age (early onset), and not the risk of developing them over an entire lifetime.

Does this research fall in line with previous studies? Was anything surprising?

This research does fall in line with previous studies, which have shown a relationship between long work hours and fatigue, stress, sleep disorders, digestive problems, and work-related injuries. The prior research has focused more on short-term health problems related to working long hours, while this study was one of the first to evaluate the risk of more chronic diseases. The results showing such a significant difference in risk among men and women was somewhat unexpected for the researchers.

Did the researchers offer an explanation for the results? Why might women’s health be more affected by longer work hours than men?

Women’s health could be more affected by long hours for a few different reasons. First, women are more likely than men to seek medical care. This means that they are more likely to get diagnosed with the conditions surveyed in the study just because they were seeing doctors more regularly than men were seeing physicians. Second, women tend to have more responsibilities at home compared to men. This means that when they are also working long hours, they have a higher overall work burden.
compared to men. Third, women may be more likely than men to participate in what the researchers called “negative work.” This means they are more likely to do jobs that provide less job satisfaction. The researchers did try look at the impact of marital status and number of children as it related to long work hours and chronic diseases. They found that there was a great deal of change for participants in terms of marital status and living arrangements with children, so the influence of these factors became difficult to assess. They did not find a significant relationship between smoking and working long hours.

What were the strengths of this study’s design and execution?

One of the main strengths of this study was the long duration of follow-up of participants. This allowed for analysis of the impact of both current and former jobs on the risk of chronic diseases. Most other studies looking at this question focus only on current employment. Another big advantage was the large sample size of this study. In addition, there was a low number of participants dropping out of the study, only 1.3 percent per year. This is significantly less than in other similar studies.

Were there any shortcomings in the study design and execution? More data that could have helped? Is there anything that could have been done better?

One limitation of the study is that it relies on average hours per week and doesn’t provide answers about the differences between those who consistently worked long hours and those whose careers were full of long hours at first but who found themselves with more free time later on in life. A second weakness is the method of getting the information about disease status. They got this information directly from the participant by self-report, but it was not specifically verified by a medical professional. The study also does not address the potential differences between mandatory overtime and discretionary overtime. Another shortcoming was the fact that they did not ask participants about exactly when they were diagnosed with a disease. If a participant developed a disease many years after they had worked long hours, the two things may not actually be related. But the researchers would not have been able to separate this out.

What is the healthy worker effect? Did that come into play?

The healthy worker effect refers to the fact that healthy workers are more likely to stay employed than unhealthy ones. This means that in a study like this one the sample would be more likely to contain healthy people who are still working, and it might seem like working long hours would not be related to developing disease. This study kept people in the sample even after they had stopped working due to health problems. This means that the impact of the healthy worker effect would be less in this study than it would in others.

What should people and health care professionals do differently in the face of these findings? What are the challenges to addressing this issue?

The findings of this study do suggest some things for workers, employers, and health care professionals to do differently. Providers should make sure to ask patients about their work life, and if patients are working long hours they should be made aware of the importance of trying to maintain a good work-life balance. There are some opportunities for employers and employees to work together to try to combat the risks associated with long work hours. Workplace wellness and health promotion programs can allow these risks to be lessened. Finding creative ways to stay active even while at work, through the use of standing desks and treadmill desks for example, can allow people to lessen the risks without having to necessarily decrease their work hours.

These types of things may increase costs initially for employers and may go against traditional work place norms. Convincing employers of the long-term benefits of making these types of changes will present a bit of a challenge, but it is clearly an important area for further evaluation.