

# Study indicates work-life imbalance significantly increases risk of cardiovascular diseases

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A healthy work-life balance has become increasingly difficult to achieve. With longer working hours, expectations of constantly "being

on," and blurred boundaries between work and life, workers across the world are experiencing spillover effects of workplace stress onto the home front. This negative spillover has been shown to have adverse effects on mental health, family relationships, work productivity and job satisfaction.

[In Singapore where there are more stressed workers than the global average](#), more and more Singaporeans are feeling mentally and/or physically exhausted by the end of the day. The "epidemic" of work-life imbalance is driving concerns about how it might affect physical health.

"To date, most research on the effects of work-life imbalance are based on self-reported measures of subjective health such as headaches, sleep degradation, loss of appetite, fatigue," Assistant Professor Andree Hartanto said.

"While subjective health indications show that people are suffering from stress and negative work-to-life spillover effects, physiological changes in the body, especially changes to the heart, are sometimes missed as some of the symptoms are silent and asymptomatic."

"This is worrisome as [the leading cause of death in the world are caused by cardiovascular diseases](#). According to the World Health Organization (WHO), 17.9 million people die from cardiovascular diseases each year.

"This is why we decided to conduct a study, specifically to investigate the health implications of negative work-to-family spillover on cardiovascular risk biomarkers," Professor Hartanto continued.

## **The research**

Professor Hartanto [published](#) the paper "Negative work-to-family spillover stress and heightened cardiovascular risk biomarkers in midlife

and older adults" in the *Journal of Psychosomatic Research*.

The work was done in collaboration with some of his former undergraduate students from SMU, including K.T.A. Sandeeshwara Kasturiratna, Meilan Hu, Shu Fen Diong, and Verity Y. Q. Lua. Sandeeshwara is currently a first-year Ph.D. student at SMU, continuing to work with Professor Hartanto. Verity has also recently begun her Ph.D. in Psychology at Stanford University

Data for the research was sourced from the [National Survey of Midlife Development in the United States \(MIDUS\) II Biomarker Project and MIDUS Refresher: Biomarker Project](#).

The MIDUS II Biomarker Project took place from 2004 to 2009, and the MIDUS Refresher Biomarker Project was conducted from 2012 to 2016.

The sample consisted of 1,179 working or self-employed adults. The sample was predominantly Caucasian, representing 89% of the total sample. The average age of the sample was 52.64 years of age. And the gender mix was almost 50:50.

The participants in the research project worked an average of 41 hours per week.

To measure negative work-to-family spillover, a four-item scale was developed and validated for the participants to report.

During [data collection](#), participants attended an overnight stay at a clinical research center and underwent a physical exam that included the collection of a fasting blood sample for cardiovascular risk biomarkers.

The five biomarkers included high-density lipoprotein (HDL), low-

density lipoprotein (LDL), triglyceride, interleukin-6 and C-reactive protein.

These biomarkers have been shown to provide an indication for cholesterol (HDL, LDL), hardening of the arteries (triglyceride) and/or inflammation of the heart (interleukin-6 and C-reactive protein). All these markers have been determined to be the onset markers for cardiovascular diseases.

## **Results and implications of the research**

The results showed negative work-to-family spillover significantly predicted two biomarkers—higher triglycerides, which could lead to hardening of the arteries, and lower HDL, which could elevate cholesterol levels. The results remained robust even after being adjusted for numerous control variables of demographics, medication, health-status, and health-related behaviors.

This suggests that the spillover of work stress into the home and family life can affect physiological changes contributing to cardiovascular diseases. The results also showed a correlation between negative work-to-family spillover with inflammation biomarkers, such as interleukin-6 and C-reactive protein.

Professor Hartanto's research is a wake-up call for organizations to pay attention to work-life balance as stress in the workplace can spill over into the home, affecting not only [mental health](#) and [family relationships](#), but also [physical health](#).

**More information:** Andree Hartanto et al, Negative work-to-family spillover stress and heightened cardiovascular risk biomarkers in midlife

and older adults, *Journal of Psychosomatic Research* (2024). DOI: [10.1016/j.jpsychores.2024.111594](https://doi.org/10.1016/j.jpsychores.2024.111594)

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