

Study shows women and men react differently to strain and stress

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How did the pandemic and the measures taken to get it under control affect the quality of life and mental health of men and women? This question was investigated by a team from the University Hospital

Würzburg. The findings are published in *Scientific Reports*.

Does anyone still remember the initial phase of the pandemic in 2020, when shops, restaurants, cinemas, and theaters remained closed; when meetings with friends and relatives were prohibited; when school lessons had to take place at home in children's rooms; when there was no possibility of traveling?

Presently, most people seem to have long forgotten these times. Yet, the various public health measures taken by politicians are likely to have caused enormous stress for many. The fear for one's job, the worry about sick relatives, the nervous strain when parents and children sit together in a small apartment and must reconcile home office and homeschooling: All this had enduring effects, as numerous studies show.

The crucial factor is anxiety

The researchers were interested in the relationship between worries about the workplace and about other people with a person's own mental health problems—such as anxiety and depression—and with their [quality of life](#) in general, how these are influenced by the support from friends or at work, and whether the results show differences between men and women.

The findings are unambiguous. In this complex of different variables and influencing factors, anxiety plays a central part. There are, however, distinct gender-specific differences. "In men, anxiety increases along with concerns about the job, an effect which does not show in women. On the other hand, we were able to register an increase in anxiety levels in women parallel to an increase in their worries about family and friends," says researcher Grit Hein.

In addition, the study shows that women in such times respond positively

to support from friends and family by experiencing enhanced quality of life. In men, this phenomenon did not manifest itself.

Data on the influence of gender were lacking

Hein is Professor of Translational Social Neuroscience at the Clinic and Polyclinic for Psychiatry, Psychosomatics and Psychotherapy at the University Hospital. She and her postdoc Martin Weiß led the study.

"In the past, numerous studies have investigated the influence of psychosocial factors such as support from friends and colleagues and financial, professional or personal worries on mental health and the quality of life. Yet, data on whether these correlations are the same for men and women were lacking," says Hein, explaining the background to the study. Broadening earlier studies, the Würzburg research team has therefore now examined the influence of these factors in relation to gender.

A study with around 2,900 participants

The team obtained the relevant information from a large group of test subjects: the participants of the so-called STAAB study. This study comprises a cohort of around 5,000 randomly selected volunteers from the general population of Würzburg and originally focused on the development of cardiovascular diseases. During the COVID-19 pandemic, the program was spontaneously expanded to include the psychosocial impacts of the pandemic, the lockdown, and other side effects.

A total of 2,890 people (1,520 women and 1,370 men) took part in the survey. Their ages ranged from 34 to 85 years, with a median of 60 years.

Between June and October 2020, they had to fill out an extensive questionnaire about their mental health. Among other things, they were asked to provide information about how strongly they felt supported by their [social environment](#), their colleagues and superiors, and whether they had someone with whom they could discuss their problems. They were also asked to what extent bans on the contact with parents and grandparents burdened them and how much stress they felt at work or at school. Financial problems or worries about them were the subject of further questions.

To evaluate the data, Hein and her team used network analysis.

"Analyses based on a network approach enable a graphical representation of all variables as individual nodes," Hein explains. Thus, it is possible to identify variables that are particularly related to other variables. The network can, for example, show [complex relationships](#) between symptoms of different mental disorders and thus explain possible comorbidities.

Results fit traditional gender norms

Hein and Weiß were hardly surprised by the results. "The observation that men are more strongly associated with work and women more strongly with family and friends can be traced back to traditional gender norms and roles," Hein explains. Hence, men usually feel more affected by job insecurity and unemployment, which leads to higher psychological stress.

Women, on the other hand, experience more strain when they feel that they are neglecting their family. It is also plausible that women cope better psychologically when they receive support from friends and family. "This is in line with the traditional female family role, which includes a stronger tendency to maintain close social contacts and to seek [social support](#) in order to reduce stress and increase well-being," says

Hein.

Even though these findings are unambiguous, the study leaders point to a number of limitations. The most important, they note, is: "Since the COVID-19 pandemic presented a very specific context, it remains to be clarified whether our results are transferable to general pandemic-independent situations."

One finding, however, is indisputable, they say, "Our results underline the need to consider social aspects in therapeutic interventions in order to improve the [mental health](#) of women and men."

More information: Martin Weiß et al, Differential network interactions between psychosocial factors, mental health, and health-related quality of life in women and men, *Scientific Reports* (2023). [DOI: 10.1038/s41598-023-38525-8](https://doi.org/10.1038/s41598-023-38525-8)

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