

# New research reveals workplace bullying and violence are risk factors for type 2 diabetes

November 13 2017

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Workplace bullying and violence may increase the risk of type 2 diabetes, for both men and women, according to new research published in *Diabetologia* (the journal of the European Association for the Study of

Diabetes [EASD]).

Previous analyses have noted that issues, such as job insecurity and long working hours, with the consequent psychological impacts, are associated with a moderately higher risk of [diabetes](#). It has also been shown that bullying and violence can affect personal resources, such as self-esteem and the ability to cope. In this study—carried out by Tianwei Xu, Department of Public Health, University of Copenhagen, Denmark and her collaborators from Denmark, Sweden and Finland—the prospective relationships between [workplace](#) bullying or violence and diabetes risk were considered.

The study population was derived from four cohort studies: the Swedish Work Environment Survey (SWES), the Swedish Longitudinal Occupational Survey of Health (SLOSH), the Finnish Public Sector Study (FPS) and the Danish Work Environment Cohort Study (DWECS). Questionnaires were used to establish exposure to workplace bullying, defined as unkind or negative behaviour from colleagues, and [workplace violence](#), defined as having been the target of violent actions or threats of violence, in the previous 12 months (note: the Finnish study referred to current bullying and did not measure violence).

The study included people employed and aged 40 to 65 years; younger participants being excluded to minimise the possible inclusion of persons with other conditions, such as type 1 diabetes. Persons diagnosed with diabetes at baseline were also excluded. The final sample consisted of 19,280 men and 26,625 women.

Incidence of type 2 diabetes (T2D) was obtained from nationwide health registers using the unique personal identification numbers for the participants in each country. Statistical analysis included adjustment for possible confounders, such as educational level and marital status (used as an indication of social support outside work). Adjustment for alcohol

consumption, [mental health problems](#) and body mass index (BMI) were also considered, although the authors note the possible causal link between workplace negative interpersonal relationships and these factors.

Nine per cent of the participants reported exposure to workplace bullying. During a mean follow up of 11.7 years, 1,223 incident cases of T2D were identified. After adjustment, being bullied at work was associated with a 46% higher risk of T2D (61% for men and 36% for women). Adjustment for alcohol consumption and mental health difficulties did not affect this association. Adjustment for BMI removed one-third of the risk increase. Some 12% of participants had experienced violence or threats of violence in the preceding 12 months. During a mean follow up of 11.4 years, 930 participants were found to have T2D. After adjusting for confounders, workplace violence was associated with a 26% higher risk of diabetes, for both men and women. Again, adjustment for [alcohol consumption](#) and mental health problems did not affect this result.

The authors note that, whilst both bullying and violence represent negative interpersonal relationships, they appear to constitute different concepts and are distinct social stressors. Bullying is psychological aggression, including behaviours such as unfair criticisms, isolation and humiliating work tasks. It is most often perpetrated by people from inside, such as colleagues. Violence, on the other hand, is more likely to involve physical acts such as pushing or kicking, or the threat of these, and is generally perpetrated by people from outside, such as clients, patients etc. Bullying and violence are distinct behaviours and consequently their induced emotions can be different.

According to the authors, "Being bullied is regarded as a severe social stressor that may activate the stress response and lead to a range of downstream biological processes that may contribute towards the risk of

diabetes". They suggest that changes caused by stress hormones may be one possible causal pathway. Also, metabolic changes and obesity may be a mechanism for the increased risk, as the stress response may be linked to the endocrine regulation of appetite, and/or because workplace bullying or violence, and the resulting negative emotional experience, might induce comfort eating behaviours.

The authors say: "There is a moderate and robust association between [workplace bullying](#), violence and the development of type 2 diabetes. As both bullying and violence or threats of [violence](#) are common in the workplace we suggest that prevention policies should be investigated as a possible means to reduce this risk."

They add: "Further study of possible causal pathways, for example weight gain, negative emotions and the psychological [stress response](#), would help to provide an understanding of the causal mechanisms and to develop cost effective interventions."

**More information:** Tianwei Xu et al. Workplace bullying and violence as risk factors for type 2 diabetes: a multicohort study and meta-analysis, *Diabetologia* (2017). [DOI: 10.1007/s00125-017-4480-3](https://doi.org/10.1007/s00125-017-4480-3)

Provided by Diabetologia

Citation: New research reveals workplace bullying and violence are risk factors for type 2 diabetes (2017, November 13) retrieved 25 April 2024 from <https://medicalxpress.com/news/2017-11-reveals-workplace-bullying-violence-factors.html>

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