Ein Bild, das Text enthält.

Automatisch generierte Beschreibung

# News article

The news article[[1]](#footnote-1) “*Vegetarian women more likely to break hips - study*” was published on BBC News on 11 August 2022. Unfortunately, the author of the article is not mentioned.

link: <https://www.bbc.com/news/uk-england-leeds-62504018> (28/01/2023)

The news article is based on the research paper[[2]](#footnote-2) “*Risk of hip fracture in meat‑eaters, pescatarians, and vegetarians: results from the UK Women’s Cohort Study*” by James Webster, Darren C. Greenwood and Janet E. Cade from August 2022. The paper was published on BMC Medicine.

link: <https://doi.org/10.1186/s12916-022-02468-0> (28/01/2023)

# Variables and Research question

How is the hip fracture risk in occasional meat-eaters, pescatarians, and vegetarians compared to regular meat-eaters for women in the United Kingdom? (Webster et al. 2022: 1)

In the paper, the authors pose the question whether a plant-based diets have effects on the risk of hip fractures. They compare a plant-based diet group (occasional meat-eaters, pescatarians, vegetarians) to a diet group of regular meat-eaters as reference. The dependent variable is the risk of a hip fracture. For the risk factor, the authors used data from the Hospital Episode Statistics. The explanatory variable are the types of diets. They gained data from a questionnaire from the World Cancer Research Fund (WCRF). The sample are women aged 35 to 69 years in the UK. About 26,000 individuals took part.

The main message of the article is that vegetarian women experience a higher risk of breaking hips in later life compared to non-vegetarian women. Compared to meat-eaters, vegetarians are facing a third higher risk of hip fractures. Among the group of vegetarians, 3% suffered a hip break.

# Economic and Econometric model

The economic model according to the article would look like this:

The article only features vegetarians and meat-eaters as groups. As nothing is reported about vegans and those only eating fish, we would suppose that these diets are included in the other groups. If only two groups are analysed, a dummy variable for diet could be included (). There is a variable for the age of the person.

When looking at the paper, the authors used a cox proportional hazard regression for their study. As the cases are only women, a dummy variable for sex does not have to be included. The diet variables are a group dummy, which take the value if a certain diet describes the individual’s diet (if not the value is ). The model is controlled for other variables. Among them are age, ethnicity, socio-economic status, number of children, physical activity, BMI, and nutritional supplement use. Beside the control variables, the economic model above would not change.

The econometric model in linear form according to the paper is: Should we include a beta for meat-eaters?

We did not add all control variables individually in the econometric model above. We quote those which we found the most important. Other control variables are noted as “”. Note that the reference is the group of meat-eating women.

# Claiming (Causal) Relationship in News article

The headline of the article claims a clear relationship of breaking hips and vegetarian diet. The wording in the article’s text is a bit more cautious. The authors are quoted multiple times. As they point out other factors, that might have an impact on the dependent variable. Such as how healthy a person’s lifestyle is, or weather body weight has an impact as well. Still, the article claims a causality between vegetarian diet and hip fracture risk, to some extent, but other factors might play a role as well.

# Claiming (Causal) Relationship in Original paper

“Vegetarians but not occasional meat-eaters or pescatarians were at higher risk of hip fracture than regular meat-eaters in this cohort of UK women.” (Webster et al. 2022: 6) When describing the findings of the study, the authors describe a correlation between vegetarian diet and hip fractures. Further the paper refers to findings that a higher risk of having a hip fracture is associated with a lower Body Mass Index (BMI). In the paper, the group including vegetarians had a lower mean BMI than the other groups. That could partly explain the higher risk of hip fracturs of vegetarian women (Webster et al. 2022: 7).

This interpretation of the study results in the paper indicates rather a correlation of the two variables. Causality only to some extent.

As a second potential reason for the results is mentioned the lack of important nutrients, that vegetarians tend to have due to their diet. Other studies are quoted that indicate whether a lack of these nutrients can cause a higher risk of hip fractures (Webster et al. 2022: 7).

# Reasons for Not Causal Relationship

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# Working with the Data

Unfortunately, we have not been granted access by the Consumer Data Research Centre (CDRC) to the UK Women's Cohort Questionnaire Data dataset.

link: <https://data.cdrc.ac.uk/dataset/uk-womens-cohort-questionnaire-data>

# References

BBC News (11 August 2022). *Vegetarian women more likely to break hips – study*. Published on BBC News. link: <https://www.bbc.com/news/uk-england-leeds-62504018> (28/01/2023).

Webster, J., Greenwood, D.C. & Cade, J.E (2022). *Risk of hip fracture in meat-eaters, pescatarians, and vegetarians: results from the UK Women’s Cohort Study*. BMC Med 20, 275.

1. When referring to the news article by BBC News, we use the term “article”. [↑](#footnote-ref-1)
2. When referring to the research paper by Webster et al. 2022, we use the term “paper”. [↑](#footnote-ref-2)