

## WOMEN WITH OXYGEN-DEPENDENT COPD HAVE HIGHER MORTALITY



Alex Barbell/Science Photo Library

**W**omen with severe COPD who are on long-term oxygen therapy (LTOT) have higher mortality than men, warns a large study.

The prevalence of COPD is rising among women and is approaching that of men, but it has previously been unclear as to whether sex affects survival. A seven-year prospective cohort study compared survival in 435 outpatients with COPD – 184 women, 251 men – referred for

long-term oxygen therapy at two respiratory clinics in Sao Paulo, Brazil. Baseline data were collected on enrolment into oxygen therapy, when patients were clinically stable.

The researchers analysed the effect of gender on survival using Kaplan-Meier survival curves, and then used Cox proportional hazards models to control for potential confounders. Results showed that women were at more than 50% higher risk of death compared to men (hazard ratio, 1.54; 95% confidence interval, 1.15–2.07;  $p = 0.004$ ) after adjusting for potential confounders (age, pack-years smoked,  $\text{PaO}_2$ ,  $\text{FEV}_1$  and body mass index). Other independent predictors of death were lower  $\text{PaO}_2$  ( $p < 0.001$ ) and lower body mass index ( $p < 0.05$ ).

### ACTION

The study demonstrates that women with COPD who are on long-term oxygen therapy are at higher risk of dying than men. The observed survival difference could have occurred if women were less likely to use their oxygen as prescribed than men – as has been seen in previous studies, making it worth taking efforts to encourage adherence. Another explanation for worse survival among women might be that some of the systemic complications of COPD, such as muscle dysfunction or depression, are more common in women and that these lead to worse outcomes. Management of women with COPD should obviously aim to treat these complications as effectively as possible.

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Evidence in Practice compiled by:  
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This series aims to demystify research by breaking research concepts down into 'bite-sized' chunks.

One of the most basic concepts is the difference between qualitative and quantitative research methods, so this is where we will start.

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**T**he choice between qualitative and quantitative methods is one of the first decisions that researchers make when embarking on a study. The simplest way of explaining the difference between them is that qualitative research generally deals with words while quantitative research deals with numbers. Which method is chosen depends entirely on the research question being asked.

Research questions that ask 'why?' are often best answered using qualitative research methods. This is because the best way to explore why a person or group of people holds certain views, or acts in a certain way, is to observe or listen to them. For example, if the question is "Why are there differences in hospital admission rates for asthma between different ethnic groups?", this might best be answered by interviewing staff and patients. Alternatively, it may sometimes be preferable to listen to participants discuss the topic with one another. This may help participants explore their views through discussion with others. As an example, in a study that asked health professionals and patients about their views on guided self-management plans for asthma, the researchers ran focus groups.

Research questions that ask 'how much?' are often best answered using quantitative research methods. In research terms, quantitative (or numerical) methods are often used to investigate the relationship between two or more factors, *ie* does a change in one thing result in a change in something else?

If a researcher were to ask: "Is there a relationship between shoe size and height?", this could not be found out by asking people what they thought of their feet and their height! Rather, the researcher would measure subjects' shoe sizes and height and analyse whether people with bigger feet were taller. This is also true for studies asking questions such as 'Is there a relationship between antihypertensive medications and the risk of type 2 diabetes?', or 'between commercial diet programmes and weight loss?'. In recent studies asking these questions, relevant factors (such as social, physiological and behavioural characteristics) were measured objectively by collecting numerical data. These data were then analysed to reveal the strength of the relationship between the factors.

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