

Putting risk in perspective: Do people make better decisions when they understand average risk?

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If there were a pill that would cut your risk of breast cancer in half, would you take it? What if you were told your risk of breast cancer was already below average?

In a newly published survey, women who were told their risk of breast cancer was above average were more likely to endorse taking the hypothetical pill than women who were told their risk was below average. The above average group was also more likely to believe that the pill significantly reduced breast cancer risk – even though both groups were told the pill would cut their risk of breast cancer in half.

Researchers from the University of Michigan Comprehensive Cancer Center surveyed 249 random women in a hospital cafeteria. Participants were given a scenario in which their own risk of breast cancer was 6 percent. Then, half of the women were told the average woman's risk of breast cancer was 12 percent; the other half were told the average risk was 3 percent.

Both groups were told in the hypothetical scenario that there was a pill that would reduce their breast cancer risk to 3 percent, but it caused side effects including hot flashes in most women, with a small risk of cataracts, stroke or heart attack. They were then asked to say if they would take the pill, given their risk of breast cancer.

No matter what their decision, 62 percent of the women said the average risk information was helpful in making a decision about whether to take the drug.

But, the study authors contend, this influence could be dangerous. After all, if a prevention strategy reduces a person's risk by half, does it matter if others receive more or less benefit"

"What's really important is to focus on your risk and the benefits you could get from a treatment. Knowing how one's own risk compared to the average woman's risk actually changed people's decisions. It's very worrisome that this piece of information had an influential impact on a woman's perceptions of a breast cancer prevention drug," says study author Angela Fagerlin, Ph.D., research assistant professor of internal medicine at the U-M Medical School and an investigator at the VA Ann Arbor Healthcare System.

Results of the study appear in the December issue of *Patient Education and Counseling*.

The study authors argue that comparing individual risk against average could lead people to make poor decisions. For example, below-average risk does not mean zero risk, yet low-risk women might think they can skip their yearly mammogram. On the other hand, women at high-risk might undergo risky treatments that they might otherwise not have chosen.

"When you give women their five-year risk of breast cancer, it might be 3 percent, and that 3 percent seems really low. But the way women tend to use comparative information is worrisome. They're focusing too much on where they stack up against average and they disregard their own individual risk information what that risk means to them," says Fagerlin, a member of the U-M Center for Behavioral and Decision Sciences in

Medicine.

The study authors urge doctors and health educators to use average risk carefully when discussing individual patients' options.

“People should focus on what their own risk is – how does that risk feel to them, and what do they think of their treatment or prevention strategies. We believe that when making a medical decision, people should consider the risks and benefits of their prevention or treatment options and they should make the best decision based on their perceptions of those risks and benefits. The decision should not be influenced by whether their risks or benefits are greater or less than another person,” Fagerlin says.

The risk estimates used in the study were fictitious. The drug mentioned is modeled after tamoxifen, which can be given to women at high risk of breast cancer to help prevent the disease. The average woman's lifetime risk of breast cancer is 12.7 percent, or one in eight. But an individual's five-year risk of breast cancer will vary based on family history, environmental exposures and lifestyle issues. Some 178,480 women will be diagnosed with breast cancer this year and more than 40,000 will die from the disease.

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