Assignment

Critiquing Scientific Secondary Sources

Unlike pieces in the popular press, scientific secondary sources are written for an audience with specialized knowledge. These materials generally will include more procedural details, making it possible to get a better understanding – and make more informed and precise analyses – of the strengths and weaknesses of particular studies. Secondary texts in professional publications (including reports on new research, letters to the editor and editorials) can also provide insight into methodological, ethical and data interpretation questions, as well as help readers place new research in a context of existing studies. This assignment is designed to help you learn to critically examine presentations of scientific studies in secondary sources.

In class today we discussed the article "Low-Fat, High-Carbohydrate Diet Averts Migraines" from the *American Academy of Family Practice News*. Your next assignment is as follows:

1. Carefully examine the primary source on which this article was reporting, "The Influence of a Low-Fat Diet on Incidence and Severity of Migraine Headaches" published in the *Journal of Women's Health & Gender-Based Medicine*. (Note: I have indicated the parts of this text that are critical to your analysis) In particular, determine which concerns raised in class about the study are valid (due to limitations or methodological problems with the study itself), and which were due to the second-hand reporting.

2. Write a letter to the editor of the *Family Practice News*, analyzing Bates's presentation of the original study. Your aim is to show how accurately Bates's text reflects the methodology, results and claims of the original report, to correct any misconceptions that readers who have not read the primary source may have, and to explain what conclusions can reasonably be drawn from the study.

Refer to the list of terms below and address any that seem relevant. Your audience is readers of the *Journal of Women's Health & Gender-Based Medicine*—college-educated health professionals who are familiar with the basic concepts of experimental design. (In particular, assume a working knowledge of all terms listed below.)

This should be a fairly formal composition with a brief introduction and conclusion (Maximum length: 3 pages double-spaced). Before submitting, be sure that your main claim and primary reasons/points are clearly articulated and located appropriately, and review your work carefully for paragraph construction, appropriate qualifying/hedging, and word choices. Bring 4 copies to class. Due next Thursday.

Key Terms

Artificial	*Mean*
Blind(ed)/ Double-blind(ed)	*Observational study*
Comparison	*Treatment*
Confounding variables	*Population*
Control/ Controlled experiment	
Random sample/ Randomization/ Sample selection	

BEHAVIOR MODIFICATION

Low-Fat, High-Carbohydrate Diet Averts Migraines

SAN DIEGO — That mayonnaise-slathered sandwich and the brownie your patient ate yesterday may have set her up for the migraine she's suffering today.

Dr. Zuzana Bic and coinvestigators from Loma Linda (Calif.) University School of Medicine, found that migraine frequency, intensity, and duration were significantly reduced among patients who followed a low-fat, high-complex-carbohydrate diet for 2 months.

Dr. Bic currently has a private preventive medicine practice in Irvine, Cailf.

Her study, presented at the annual meeting of the American Assocation for the Study of Headache, focused on common denominators identified in the literature as triggering migraine headaches; in particular, high levels of free fatty acids, which cause platelet aggregability, and high levels of prostaglandins, which cause vasodilation.

Over 12 weeks, 54 previously diagnosed migraine patients kept daily food and headache diaries. The first 28 days served as a control period, followed by an individual counseling session in which patients were placed on a diet with fat limited to 20g or less per day.

After 28 days for adjustment to the diet, fat intake and headache frequency, intensity and duration were monitored for the final 28 days.

Patients averaged nine headaches a month in the initial run-in period, compared with three headaches a month in the final 28 days of the study.

The mean intensity of their headaches, measured on a 5-point scale, declined from 2.8 to 0.9.

Their need for medications dropped from almost 11 doses per month to 3, Dr. Bic reported in a poster presentation.

No changes in medication, perception of stress, or heavy physical activity could account for the changes, she noted.

In an interview at the meeting, Dr. Bic said moast patients maintained their low-fat diets even after the conclusion of the study.

"Patients began to see that 3-72 hours after they had a high level of dietary fat, they got a migraine," she said. "They could see it for themselves, so behavior change was not so hard to maintain."

—Betsy Bates