

Example of Think Show Tell for Associations Between Categorical Variables

Think:

Statistics always starts with a question. In this scenario we want to know if there is evidence that Prozac might be helpful in treating anorexia.

DATA

	TREATMENT		TOTAL
	PROZAC	PLACEBO	
HEALTHY	35	32	67
RELAPSE	14	12	26
TOTAL	49	44	93

Medical researchers treated 93 volunteers who had anorexia. 49 of the patients received prozac and 44 received a placebo. Our data gives us counts for both Treatment and Health Condition. These variables are categorical, the count categories do not overlap. Thus, we have met the categorical data condition.

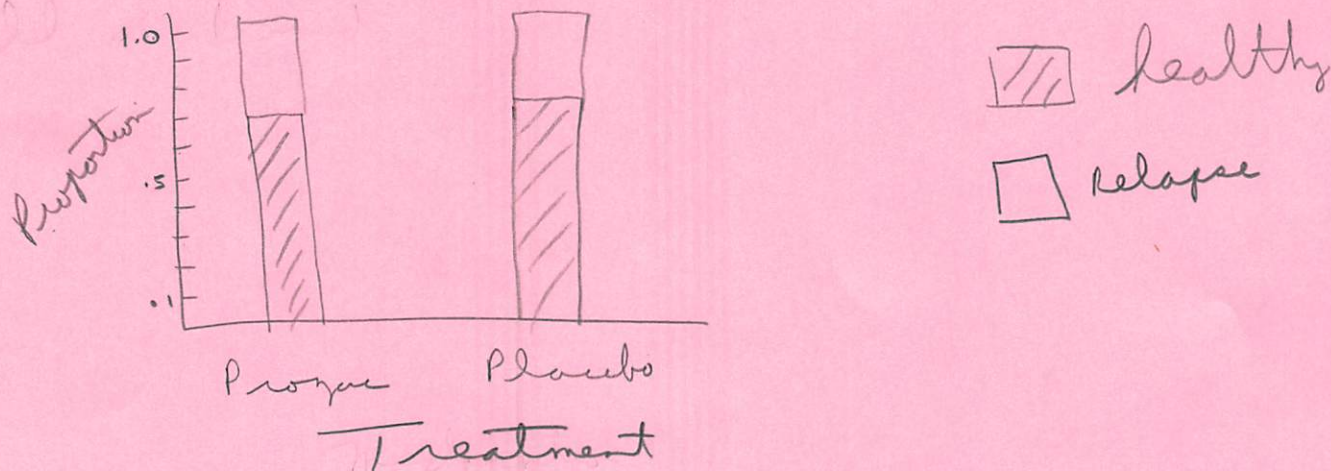
Show: The marginal distribution for our data is:

	TREATMENT		Total
	Prozac	Placebo	
Healthy	$35/93 = .38$	$32/93 = .34$	$67/93 = .72$
Relapse	$14/93 = .15$	$12/93 = .13$	$26/93 = .28$
Total	$49/93 = .52$	$44/93 = .47$	$93/93 = 1.00$

now let's compute the conditional distribution of health condition given the treatment.

	TREATMENT	
	Prozac	Placebo
Healthy	$35/49 = .71$	$32/44 = .73$
Relapse	$14/49 = .29$	$12/44 = .27$
Total	1.00	1.00

Prozac and Anorexia



Tell : From the segmented bar chart showing the conditional distribution of health condition given the treatment, it appears that there is no association between the use of prozac and the condition of the patient regarding anorexia. Prozac does not appear to be effective in the treatment of anorexic patients in this study.