Crocus sativus and Depression

Fluoxetine, commonly known as Prozac, is one of the most common pharmacological treatments for clinical depression. In a study designed to compare the effects of a naturopathic treatment for depression (extract from saffron [Crocus sativus]) to fluoxetine, 40 adult patients with clinical depression were randomly assigned to receive capsules containing either Crocus sativus or fluoxetine.

Depression scores on the Hamilton Rating Scale for Depression were collected at baseline and after six weeks of treatment in both groups. A resident of psychiatry also systematically recorded patient side effects using a checklist administered several times during the study. The study used a double-blind procedure. Figure 1 and Table 1 present the main findings from the study.

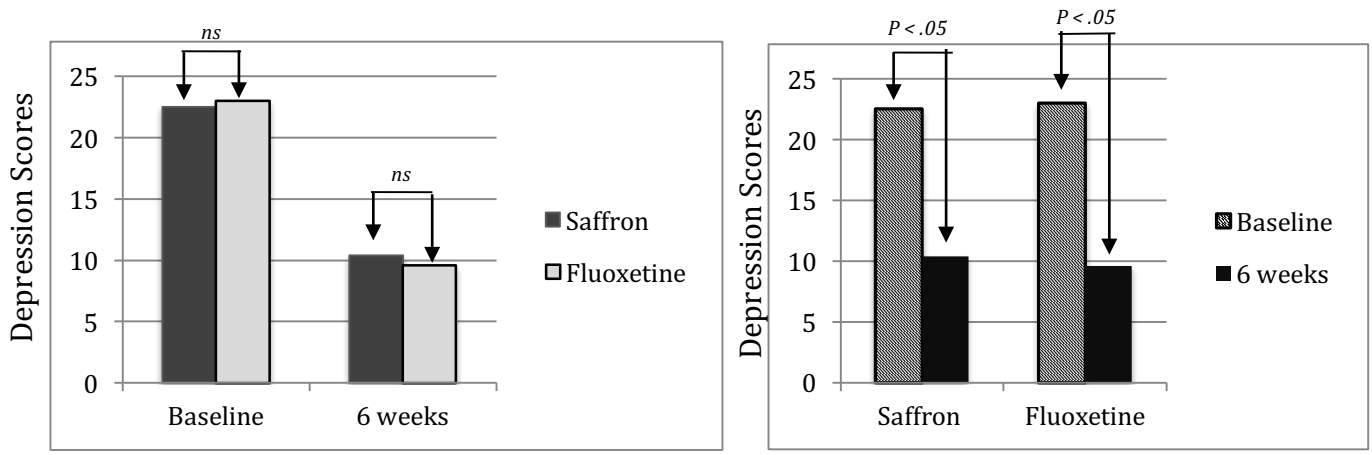

Figure 1. Depression scores on the Hamilton Rating Scale at pretest and after six weeks. Higher scores represent higher levels of depression.

Table 1. Clinical complications and side effects in each group. P-value represents comparison between the two groups.

Side effects	Saffron	Fluoxetine	*P*
Anxiety	3	6	0.45
Decreased appetite	2	5	0.40
Increased appetite	5	2	0.40
Sedation	1	0	1.00
Nausea	2	4	0.66
Headache	3	6	0.45
Sexual dysfunction	0	4	0.10
Tremor	0	4	0.10
Sweating	0	3	0.23

Discussion questions:

1. Name the dependent (or criterion) and independent (or predictor) variable(s) in this study.
2. Can you conclude from these data that there is a causal link between Saffron consumption & lowered levels depression? Why or why not?
3. Do the data in Table 1 support the conclusion that Fluoxetine is associated with a larger number of side effects than Saffron? Why or why not?
4. If you could revise this study in one way, how would you revise it? Why would you change it in this way?
5. Additional studies have examined the relationship between exercise and depression rates and reported that individuals who exercise more frequently also exhibit lower levels of depression. How could you design an ideal experiment to test whether exercise causes decreases in depression levels?

Data adapted from:

Noorbala, A., Azhondzadeh, S., Tahmacebi-Pour, N., & Jamshidi, A. (2005). Hydro-alcoholic extrac of Crocus sativus L. versus fluoxetine in the treatment of mild to moderate depression: A double-blind, randomized pilot trial. Journal of Ethnopharmacology, 97, 281-284.