

# The Effects of Alcohol on a Subject with Suspected Spasmodic Dysphonia



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## Abstract

Numerous factors influence spasmodic dysphonia, with emotional stress, anxiety, and physical effort making it worse. Alcohol is usually a depressant to the nervous system, calming and relaxing the partaker. Since stress and anxiety have been shown to affect spasmodic dysphonia and alcohol is known for the relaxation of muscles, this study questions the effect of alcohol on the fundamental frequency, pitch range and phonic breaks of a subject with suspected spasmodic dysphonia. Implications and recommendations are presented.

## Background/Statement of the Problem

“Spasmodic dysphonia (SD) designates a group of voice disorders that are characterized by strained or breathy voice qualities resulting from adductor or abductor laryngospasm” (Duffy, 2005, p. 240). While the cause of spasmodic dysphonia was originally thought to be strictly psychopathological, today there are “three basic etiological possibilities: *neurogenic, psychogenic, and idiopathic*” (Duffy, 2005, p. 241).

Emotional stress, anxiety, depression, and physical exertion often make symptoms worse” (Duffy, 2005, p. 242).

A diagnosis of SD has characteristics including “an occasionally normal voice, intermittent breaks in voicing, a normal-sounding whisper, improved voice at high pitches, worsening with stress, [and] periods of significant dysphonia” (Justice, 2006, p.

### Problem

What is the effect of alcohol on a subject with suspected spasmodic dysphonia?

### Purpose

To examine the differences in vocal parameters of the subject while under the influence of alcohol and not under the influence

To test the effectiveness of collecting a speech sample through digital recording

To evaluate spasms in spasmodic dysphonia

To establish which of the three evaluations, fundamental frequency, pitch range, and phonic breaks, are best at determining the effects of alcohol on spasmodic dysphonia.

## Method

### Subject:

The subject selected was a 68 year old female with a history of vocal problems and suspected spasmodic dysphonia.

### Instrumentation

Hand-held digital recorder Olympus model WS-321M  
The KAT program in the CSL  
6 proverbs from the Bible  
2 reading passages

Investigator went to the subject’s house while the subject was under the influence of alcohol.

Investigator had selected three proverbs from the Bible for the subject to read.

Investigator had the subject read several paragraphs of an article in a magazine.

Vocal performances were recorded.

Investigator returned to the subject’s house the following morning when the subject was no longer under the influence of alcohol.

Investigator once again had the subject read three different selected proverbs and a poem written in the subject’s home. The vocal performances were recorded

### Design

This investigation was an A1B1 design. A1 was the pre-treatment baseline data of the recordings of the subject while not under the influence of alcohol. B1 was the baseline data of the recordings of the subject while under the influence of alcohol.

### Variables

Independent variable of the experiment was the consumption of alcohol.

Dependent variable of the experiment was the subject’s vocal spasms while not under the influence of alcohol.

Control variables included the location of data collection, the gender of the subject, the age of the subject, the amount of years the subject has had suspected spasmodic dysphonia, which proverbs and passages the subject read, and the method for obtaining and analyzing the data.

## Results

Average fundamental frequency of the baseline was 178.85 Hz. for Proverb 1, 281.65 Hz. for Proverb 2, 239.56 Hz. for Proverb 3, and 189.64 Hz. for the reading.

Average fundamental frequency for treatment was 248.66 Hz. for Proverb 1, 249.20 Hz. for Proverb 2, 229.62 Hz. for Proverb 3, and 232.17 Hz. for the reading.

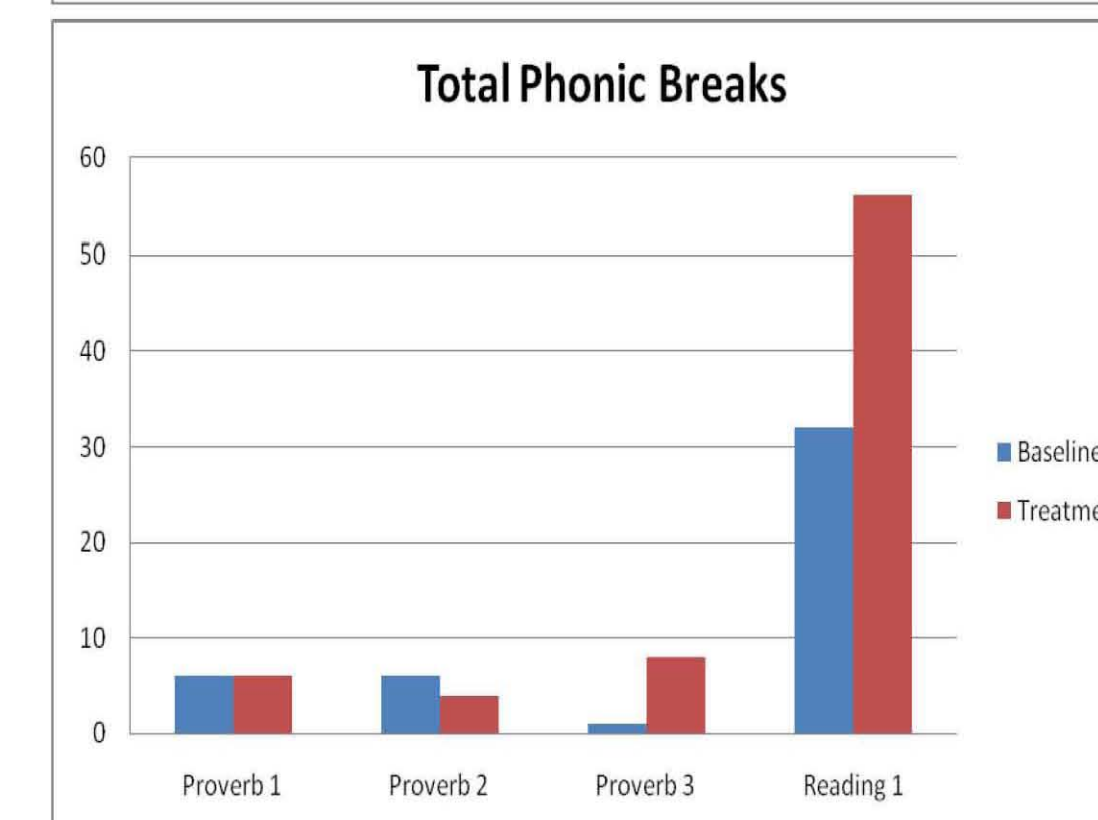
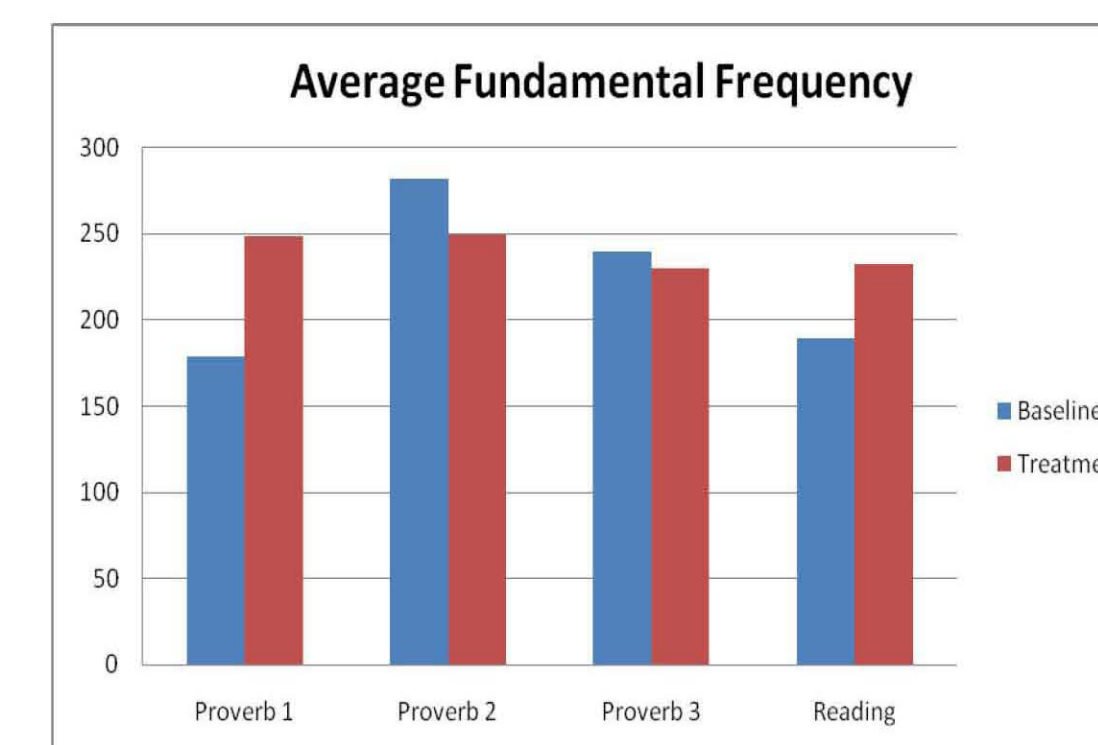
Phonic breaks for baseline date was 6 for Proverb 1, 6 for Proverb 2, 1 for Proverb 3, and 32 for the reading.

Phonic breaks for treatment were 6 for Proverb 1, 4 for Proverb 2, 8 for Proverb 3, and 56 for the reading.

In two of the proverb readings, the treatment improved the Jitter and Shimmer percentages.

In the third proverb reading, treatment did not show an impact on the Jitter and Shimmer percentages.

In the reading passages, treatment showed an increase in the Jitter and Shimmer percentages.



## Conclusion/Discussion

### Conclusion

The hypothesis was neither rejected nor accepted for the effects of alcohol on a subject with suspected spasmodic dysphonia.

### Discussion

Results indicate alcohol has dissimilar affects on different vocal parameters.

The fundamental frequency data did not have a clear-cut direction when comparing the treatment data with baseline data.

Phonic breaks in the proverbs did not indicate much change, however the phonic breaks in the reading passages showed that alcohol had an adverse affect on the number of total phonic breaks.

Digital recording is an effective way of collecting a speech sample

Of the three voice parameters, the results indicate the phonic breaks are the most effective way to determine the effect of alcohol on spasmodic dysphonia.

## Implications/Recommendations

### Implications

It is implied that in other subjects with spasmodic dysphonia, alcohol would also have varied effects on vocal parameters.

It is implied that the total number of phonic breaks in a reading passage would increase with the added treatment of alcohol

Experiment suggests that other factors may have an effect on the vocal parameters of a subject with spasmodic dysphonia, and that in some instances, alcohol can have an adverse affect.

### Recommendations

Repeat the study with more subjects and more data

Assess additional vocal parameters

Collect data over time, instead of in a short two-day period