

Study: Self-Esteem and Fragrance Use

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Abstract

The purpose of this study was to evaluate whether age has an effect on fragrance use. The sample consisted of 99 students at the University of Dallas Richardson campus and results were collected by paper and pen. Half of the surveys were collected while wearing a fragrance and the other half were collected while not wearing a fragrance. The students were randomly chosen in the Student Union. The values of $P < 0.05$ are significant. A larger representative sample would achieve more accurate results. The RSES (Rosenberg's self-esteem score) averages for all age groups were within normal range. Within the test groups there was no correlation between age and RSES. There was no correlation found between RSES collected while wearing fragrance versus while wearing no fragrance. No dependency was found between age, wearing a fragrance or the frequency fragrance use. However, there was a correlation found among respondents between age and how they react to fragrances on campus. Most university students aged 18-20 liked fragrances where most university students aged 21-24 were indifferent.

Introduction

Fragrances have been used for thousands of years (Lenochova 2012). These fragrances are used to modify or eliminate body odor and each one has its own appeal. A study of female heterosexual college students reveals that body odor is the most important factor in attractiveness (Herz 2002). Body odor is dictated by food intake and

hormones and this is how animals attract a mate (Halicek 2006). For humans, we use fragrances to alter or augment these scents.

Humans are programmed genetically to respond in a favorable way to certain scents (Lenochova 2012). If certain scents cause favorable reactions then perhaps, as a society, we are conditioned by favorable responses to wear them. Self-esteem may be affected by wearing fragrances. Also, society may teach us to wear fragrances and since societal views change, self-esteem may be affected by age.

The survey was designed to research the hypothesis of whether we choose to wear a fragrance because society dictates that we should (for someone else) or do we choose to wear a fragrance because we like it (for us). This design compares this sense of self against age and fragrance use.

Experimental Design

A large portion of this survey contains Rosenberg's self esteem scale. This is a Likert scale in which the answers are assigned numbers to calculate a numerical total to evaluate the participant's overall self-esteem (Dobson 1979). The full survey can be found in the Appendix of this study. For questions 1,2,4,6, and 7: strongly agree = 3, agree = 2, disagree = 1, and strongly disagree = 0. For questions 3, 5, 8, 9, and 10: strongly agree = 0, agree = 1, disagree = 2, strongly disagree = 3. The total score is 30 and a score between 15 and 25 are within normal range. This survey is vetted and is widely used in psychological studies. Five of the questions are positively worded and five of the questions are negatively worded to allow for more accurate results. Additional

questions were added to the survey to determine frequency of fragrance use and demographics.

Respondents were asked to fill out a paper and pencil survey while the surveyor was dressed in a business suit. There were no limitations on the demographics of respondents asked to fill out the survey. Half of the surveys were taken while wearing a fragrance and half when wearing no fragrance to rule out the possibility of the surveyor's fragrance influencing results. This combination was chosen to determine the RSES of respondents and investigate their preferences with fragrances.

Materials

A collection of pencils were used in addition to copies of the survey when collecting data. Although 150 copies were made only 99 were used. A perfume, Chanel's 'Chance', was also used when collecting half of the surveys. The surveyor self-applied one spray anytime the fragrance was used in collecting surveys to ensure consistency.

Procedures

Copies of the survey were taken to the Student Union on campus. Potential respondents were asked if they would be willing to fill out a short survey as per the script submitted to the IRB at UT Dallas. The script was followed exactly every time a student was approached. Half of the surveys were collected while wearing a perfume. There were

no significant safety concerns during this study. The survey and script were submitted through the IRB at UT Dallas.

Data Analysis

Data was collected from 99 respondents from two sample groups. One sample groups was collected while wearing perfume and the second was collected without perfume. The RSES from each of the sample groups were averaged for the Likert scale and compared. No significant difference was found in comparing the mean of the two age groups. The mean of the age groups tested fall within the normal range of the Rosenberg self-esteem scale.

The Likert scale results were run using only the 18-20 and 21-25 age groups because of the sample size. In the other two groups the sample size was below 5 so the results of these groups were disregarded (25-29: n=4; 30+: n=3). A significance value of 0.05 was chosen for both T-tests used to compare the Likert scale values. There was a p-value of 0.385 so we cannot reject the hypothesis of age and RSES independency. There was also a p-value of 0.233 when the RSES and frequency of wearing a fragrance was tested so we cannot reject that hypothesis.

The remaining questions were compared using the Chi square test. The age groups 18-20 and 21-25 were disregarded in these tests because of the sample size. Question 12 addressed the frequency of which the respondents wear a fragrance. A p-value of 0.346 was found so the null hypothesis, that age and frequency of use are independent, cannot be rejected.

The next question addressed why the university students wear fragrance. Since more than one answer could be chosen the results could not be analyzed using a statistical test. However, almost all of the students stated that they wore a fragrance because they didn't want to smell bad and that they liked the fragrance. These responses may indicate that there is both a personal and social reason for a fragrance. Further investigation is needed to explore these possible psychological reasons.

Overwhelmingly the students in this study indicated that they would be more attracted to someone with a fragrance. However, the Chi Square test results do not support this data (P-value: 0.819). These conflicting results indicate that there is more testing needed to understand the reasons for the results. Also, reaction to a fragrance is dependent on age among the tested university students (p-value 0.0004). In this test we cannot reject the hypothesis.

Conclusion

These results do not represent the general population. The sample size was only a small segment of the population at UT Dallas Richardson campus. It is hard to determine whether wearing a fragrance affected the responses on the survey as there were many people present and therefore many fragrances.

In the study a campus meeting place was used as the site of collection. This site may have skewed the results as students with lower self-esteem are less likely to meet up with other students and therefore were less likely to be surveyed.

There is clear evidence that despite what people state oftentimes the survey results reflect something different. This conflict may be attributed to self-image or the image the respondents wanted to portray to others. The surveys were collected in a crowded area and many times within groups of people. Reactions to the surveys may be different for individuals in a more controlled environment.

Work Cited

Dobson, Cynthia, Willis J. Goudy, Patricia M. Keith, and Edward Powers. "Further Analysis of Rosenberg's Self-Esteem Scale." *Psychological Reports* 44.2 (1979): 639-41. Web. 14 Apr. 2014.
<<http://www.amsciopub.com/doi/abs/10.2466/pr0.1979.44.2.639?journalCode=pr0>>.

Havlicek, Jan, and Pavlina Lenochova. "The Effect of Meat Consumption on Body Odor Attractiveness." *Chemical Senses* 31 (2006): 747-52. *Oxford Journals*. Web. 8 Apr. 2014.
<<http://chemse.oxfordjournals.org/content/31/8/747.full.pdf+html>>.

Herz, Rachel, and Michael Inzlicht. "Sex differences in response to physical and social factors involved in human mate selection." *Evolution and Human Behavior* Aug. 2002: 359-64. Science Direct. Web. 24 Feb. 2014.
<<http://www.sciencedirect.com/science/article/pii/S1090513802000958>>.

Lenochova, Pavlina, Pavla Vohnoutova, S. Craig Roberts, Elisabeth Oberzaucher, and Karl Grammer. "Psychology of Fragrance Use: Perception of Individual Odor and Perfume Blends Reveals a Mechanism for Idiosyncratic Effects on Fragrance Choice." *Evolution and Human Behavior* Mar. 2012. Web. 24 Feb. 2014.
<<http://www.plosone.org/article/abstract?uri=info%3Adoi%2F10.1371%2Fjournal.pone.0033810&representation=PDF>>.

Appendix

Survey

1. I feel that I am a person of worth, at least on an equal plane with others.
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree
2. I feel that I have a number of good qualities.
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree
3. All in all, I am inclined to feel that I am a failure.
___Strongly Agree ___Agree ___Disagree ___Strongly Disagree

4. I am able to do things as well as most other people.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
5. I feel I do not have much to be proud of.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
6. I take a positive attitude toward myself.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
7. On the whole, I am satisfied with myself.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
8. I wish I could have more respect for myself.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
9. I certainly feel useless at times.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
10. At times I think I am no good at all.
☐ Strongly Agree ☐ Agree ☐ Disagree ☐ Strongly Disagree
11. I am: ☐ 18-20 ☐ 21-24 ☐ 25-29 ☐ 30+
12. A fragrance is defined in this study is a scented deodorant, cologne, perfume or body spray. I wear a fragrance:
☐ every day ☐ 2-3 a week ☐ Rarely ☐ Never
13. I wear a fragrance because (Check all that apply):
☐ I just like it ☐ I don't want to smell bad ☐ For someone else ☐ Not applicable
14. If I were looking for a fling I would be more attracted to:
☐ Someone wearing a fragrance ☐ Someone with no fragrance
15. The majority of the time how do you react to fragrances people wear on campus?
☐ I like them ☐ Indifferent ☐ I do not like them

**Fragrant Attraction Study:
Face-to-Face Recruitment Script**

Please smile as you state the following:

“Hi. Do you have minute to fill out a quick survey on fragrance use? It's for a class.”