Gender and Smoking in Relation to Pain Tolerance

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Abstract

Pain is defined as a person’s tolerance to distress. It is interpreted differently based on a person’s tolerance. Pain tolerance is how much pain a person can take before they break down, and it is both a sensory and emotional experience. A major point of discussion regarding pain tolerance asks which gender has the higher pain tolerance. Smoking has been proven to cause many negative effects to the human body, and pain tolerance is no exception. The following body of work details previous studies about pain tolerance in relation to smoking and gender. The work below consists of surveys, interviews, previous studies, and expert advice that aims to find what the average college student’s perception about pain tolerance in relation to smoking and gender. The body of work below also details how the researcher’s study could be improved and what could be done to gain more information and knowledge about this topic in the near future.

*Keywords:* Pain, Tolerance, Gender, Smoking
Gender and Smoking in Relation to Pain Tolerance

Smoking has been proven to cause many negative effects to the human body. These negative effects can cause very severe issues to a person’s health. One of the factors affected by nicotine is pain tolerance. Nicotine affects the brain through acetylcholine receptors. Nicotine lowers the sensitivity to pain upon administration for short amounts of time. However, over time and exposure, nicotine will make pain receptors more sensitive. Another factor that many people, regarding pain tolerance, examine is gender difference. A major point of discussion regarding pain tolerance asks which gender has the higher pain tolerance. Many studies have been conducted and researchers have reached a similar conclusion. Monroe et al. (2011) conducted an experiment which examined sex differences in pain reports and brain response to pain in cognitively healthy older adult females and males. Participants underwent psychophysical assessments of thermal pain responses, functional MRI, and psychosocial assessment. According to Monroe (2011), researchers found that older females reported experiencing mild and moderate pain at lower stimulus intensities compared to older males.

Another study showed similar results as well. Researchers (Sullivan, Tripp, & Santor, 2000) conducted an experiment which utilized the cold pressor apparatus to examine pain perception and pain behavior in males and females. Participants immersed one arm into a bucket of ice water for one minute and gave verbal reports of their pain on a scale from one to ten. Participants' pain behavior was recorded regarding how they responded to pain. Researchers found that women reported more intense pain and engaged in pain behavior for a longer period of time than men. A very similar study was conducted but focused on gender as well as smoking. Patients submerged their non-dominant hand in zero degrees Celsius water for as long as tolerable. The results were gathered and listed from lowest pain tolerance to highest: female
smokers, male smokers, female non-smokers, male non-smokers. These intriguing studies were very eye opening and sparked the interest of the current researcher. Smoking and gender are both critical factors that play a role in individual’s pain tolerance. The present study was conducted to examine college student’s perception of how gender and smoking affects pain tolerance.

**Methods**

This study was designed with surveys and interviews. The researcher conducted a survey. The participants were college students at Dalton State College. The survey consisted of questions such as, “Would you say men or women have a higher pain tolerance?” and “Do you think smoking impacts pain tolerance?” and “Based on your belief about men or women having higher pain thresholds, why do you believe this way?” The researcher also consulted with a psychology professor on campus at Dalton State College. Many of the previous research articles were suggested by the professor. Many of the ideas presented in the previous studies influenced the researchers study. The researcher also interviewed another student at Dalton State College to get an in-depth opinion on the topic. Many of the questions in the survey were asked to this singular student as well. However, more in-depth responses were given in the singular interaction and provided the researcher with more data. After collecting the data from the class survey and the singular student survey, the researcher compared the results and searched for similarities and differences. The main points of focus were which gender each student believed had the higher pain tolerance, did smoking affect pain tolerance, and why did each student believe this way for each of those questions. After gathering these questions, the researcher then moved on to analyzing results and making conclusions.
Results/Analysis

The first survey conducted was a full classroom survey at Dalton State College. The first major question asked was “Would you say men or women have a higher pain tolerance?” The results of this question stated that 85.71% believe women have a higher pain tolerance. Only 14.29% believe that men have the higher pain tolerance between the genders. Figure 1 shows these results in pie chart form. There were a few reasons given to this belief such as, “I think men are breed to be manlier therefore they show pain less often. If you show pain less often then the more you get used to the feeling and can tolerate it more” (Dalton State student, e-communication, 2018). In contrast another student stated, “Women have a stronger mentality that knows things have to get done. Men like to be babied” (Dalton State student, e-communication, 2018). Many strong responses were brought forward in the discussion of this question. However, the overwhelming belief, as to the reason the students believed women had higher pain tolerances, was women have a higher pain tolerance and that is proven by child birth.

The second major question asked was “Do you think smoking impacts pain tolerance?” The results of this question stated that 71.43% believe that smoking does affect pain tolerance. Only 28.57% believe that smoking does not affect pain tolerance. Figure 2 shows these results in pie chart form. The next source came from a psychology professor at Dalton State College. The professor stated, “It is a common misconception that women have a higher pain tolerance than men. In reality, most previous research that has been done points to men having the higher pain tolerance” (Dalton State professor, interview, 2018). The researcher proceeded to ask the professor for a few examples of the previous studies that conclude that men have a higher pain tolerance than women and how smoking can affect pain tolerance. The three studies mentioned in the introduction of this work were a few of the studies presented by the professor. These
articles detailed experiments that were done on both genders and smokers/non-smokers. Finally, the last batch of results came from the singular interview with a student at Dalton State College. The researcher asked questions similar to the questions asked in the original survey. The student stated, “I believe men have a higher pain tolerance than women. Men are normally raised to be tough and to not show emotion very often. I think if people did experiments then the men would hold back their pain better than a woman. Women would be quicker to say they were in pain because most of them have not been raised to hide their pain like men do” (Dalton State student, personal communication, 2018). The question regarding smoking and pain tolerance from the original survey was also presented to the singular student. The student stated, “I think smoking could definitely cause lower pain tolerance. Smoking already has so many negative effects, so it would not surprise me at all if it somehow lowered the pain tolerance of men or women. My friend smokes and he does complain about little injuries a lot more than I ever would, but that could be a personality thing” (Dalton State student, personal communication, 2018). All three of the sources, that the researcher pulled from, presented unique and valuable information.

Discussion

A majority of college students in the original survey believe that women have a higher pain tolerance. However, most previous research and a Dalton State professor state that men have a higher pain tolerance. This common misconception is still being seen today mainly due to the belief that women have a higher pain tolerance due to child birth. This was the top reason given as to why women have a higher pain tolerance. Both figure one and two were had results that were separated by wide intervals. Students were in agreeance on the decisions they made, even though some of them are scientifically incorrect according to research and previous experiments. Women most likely will believe women have a higher pain tolerance, and men will
most likely believe that men have a higher pain tolerance. Students were accurate when answering questions about smoking related to pain tolerance. Most students are aware of the negative effects that smoking does to the body, and it was no surprise that most believe that smoking will, in some way, affect pain tolerance.

**Conclusion**

Gender and smoking are both factors that affect pain tolerance. Many previous studies and experiments have shown that men have a higher pain tolerance, and it is a common misconception that women have a higher pain tolerance. An outlier from the researcher’s survey was that the survey was only taken by female participants. This influenced the results and caused the misconception of females having a higher pain tolerance to be even higher. As previously stated, most often, the gender answering the questions will say their own gender has the higher pain tolerance. It was not surprising that the singular interview with a Dalton State student chose males to have the higher pain tolerance because he was male himself. In the future, more studies should be conducted to test pain tolerance and its relation to smoking. There are very few studies done on this topic, and the results were very interesting. Pain tolerance can be affected by gender and smoking, and it was very eye opening to discover what each student’s perception was about this topic. In the future, hopefully even more studies can be done to solidify and further the evidence regarding this topic.


Figure 1

<table>
<thead>
<tr>
<th>ANSWER CHOICES</th>
<th>RESPONSES</th>
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<tr>
<td>Men</td>
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<td>Women</td>
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### Figure 2

<table>
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<tr>
<th>ANSWER CHOICES</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
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</tr>
<tr>
<td>No</td>
<td>28.57%</td>
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