

2016-05-01

# Nursing Students' versus Non-nursing Students' Understanding of Oral Contraceptives

Victoria Josephine Quirk  
*Salem State University*

Follow this and additional works at: [https://digitalcommons.salemstate.edu/honors\\_theses](https://digitalcommons.salemstate.edu/honors_theses)

---

## Recommended Citation

Quirk, Victoria Josephine, "Nursing Students' versus Non-nursing Students' Understanding of Oral Contraceptives" (2016). *Honors Theses*. 117.  
[https://digitalcommons.salemstate.edu/honors\\_theses/117](https://digitalcommons.salemstate.edu/honors_theses/117)

This Thesis is brought to you for free and open access by the Student Scholarship at Digital Commons at Salem State University. It has been accepted for inclusion in Honors Theses by an authorized administrator of Digital Commons at Salem State University.

**NURSING STUDENTS' COMPARED TO NON-NURSING STUDENTS'  
UNDERSTANDING OF ORAL CONTRACEPTIVES**

**Honors Thesis**

**Presented in Partial Fulfilment of the Requirements  
for the Degree of Bachelor of Nursing**

In the College of Health and Human Sciences  
at Salem State University

By  
Victoria Josephine Quirk

Hannah Fraley, MSN, PhD (c), RN  
Faculty Advisor  
Department of Nursing

\*\*\*

The Honors Program  
Salem State University  
2016



### Acknowledgements

At this time I would like to take a moment to thank several individuals who aided in the completion of this research project

- ❖ **Hannah Fraley:** My faculty advisor; thank you for mentoring me and spending so much time to help me understand how to conduct a research project in the first place. From our many Thursday morning meetings to our endless email chains, I cannot thank you enough for helping me put this entire paper together.
- ❖ **Joanna Gonsalves:** The Coordinator of the Commonwealth Honors Program; thank you for accepting me into the Commonwealth Honors Program in August of 2012. The Honors Program was something that I had heard about from a dear friend of mine and applied to the program on a whim. Because of your decision to accept me into this program, I will be able to graduate not only with a BSN, but with honors and my BSN.
- ❖ **Cory Donahue:** a dear friend; thank you for sitting with me for hours to help me create my graphs. Without your assistance I would have never been able to create the graphs within my paper.
- ❖ **Various Nursing Faculty:** Salem State University professors and faculty; thank you for helping me get my survey to the entire nursing department. Without all of your help, I would not have had enough participation from Salem State University's undergraduate nursing majors.
- ❖ **Salem State University Undergraduate Students:** Nursing and non-nursing majors; thank you for taking the time out of your lives to complete my survey. I would not have been able to graduate with honors if it wasn't for all of your participation.
- ❖ **My Family:** Thank you for all of your support throughout the past four years of my college career. I truly wouldn't have completed this project if it wasn't for your constant reassurance, encouragement and faith that you had in me.

**Abstract**

**BACKGROUND/PURPOSE:** Many people are aware that oral contraceptives (OCs) are used to correct unwanted side effects from a woman's menstrual cycle or used to prevent an unwanted pregnancy from occurring, or used in combination. However, many students are unaware of side effects and risks that OCs can have upon each individual consumer. The purpose of this study was to examine undergraduate nursing students' understanding of OCs and compare it to undergraduate non-nursing students' understanding of OCs to see if the side effects of OCs are truly understood.

**DESIGN AND METHODS:** A quantitative study was conducted among undergraduate students attending Salem State University, located in Salem, Massachusetts. The survey was accessible from early November 2015 until December 2015. An online survey database was utilized to collect responses electronically and was sent to both nursing and non-nursing students who attended Salem State University during that time frame.

**RESULTS:** Regardless of the major or class standing, most participants had a general understanding of the risks and side effects that OCs can have.

**IMPLICATIONS:** Healthcare providers should focus teaching on OCs towards helping consumers accurately understand the side effects and risks that are associated with this medication, along with deciphering the truth from various misconceptions.

*Keywords:* college students, nursing students, oral contraceptives, side effects, knowledge, education

**Table of Contents**

I.	Title Page	I
II.	Acknowledgements	II
III.	Abstract	III
IV.	Table of Contents	IV
V.	List of Tables and Figures	V
VI.	Introduction	1
VII.	Review of the Literature	
	i. The menstrual cycle and OCs	2
	ii. OCs and side effects	3
VIII.	Statement of Significance	5
IX.	Statement of Purpose	5
X.	Methodology	
	a. Design	6
	b. Sample and Setting	6
	c. Ethical Considerations	6
	d. Data Collection	8
	e. Data Analysis	8
XI.	Results	9
XII.	Discussion	14
XIII.	Study Limitations	17
XIV.	Conclusion/Recommendations	18
XV.	References	20
XVI.	Appendices	
	a. Letter of Approval from IRB	22
	b. Participant Disclosure Statement	25
	c. Participant Survey	27

**Lists of Tables and Figures**

Table 1: Side effects participants were aware that OCs can have

15

Table 2: How the participants learned of these side effects

16

### **Introduction**

Girls in the pubescent stage of development experience major physiological changes. The onset of menstruation is the signifying mark of the beginning of womanhood. Many females can experience an abundance of negative side effects including, but not limited to, heavy bleeding, irregular cycles, and severe acne. Many people are aware that oral contraceptives (OCs) are one of many forms of birth control that can be used to correct unwanted side effects from a woman's menstrual cycle or used to prevent an unwanted pregnancy from occurring, or used in combination. However, many students are unaware of side effects and risks that OCs can have upon each individual consumer.

The side effects that can come with taking OCs are not always black and white. The more well-known side effects that OCs carry are recognized by consumers and the general public, such as, weight gain, increase in abdominal cramping and nausea, just to name a few. However, having a family history of certain diseases, having certain medical conditions, or engaging in risky behavior, can increase their risk of developing such adverse effects.

It is commonly thought that nursing students may have a broader understanding of the human body's functions as well as an understanding of medications. This is due in part to the fact that many have already completed one anatomy and physiology lecture and lab or will be currently enrolled in one. Some nursing students have even completed their pharmacology rotation and would have greater knowledge on the mechanism of action of medications. But do these extra classes put them at an advantage of understanding OCs compared to non-nursing majors? Or do they contain the same amount of knowledge as non-nursing majors?

## Literature Review

### The menstrual cycle and OCs

The menstrual cycle is something that every woman will go through at some point in her life, signifying the beginning of womanhood. Each month the uterus prepares for an ovum, also known as an egg, to get fertilized by a sperm cell. This occurs in multiple steps: estrogen stimulates the uterine wall, also known as the womb, to thicken to prepare for pregnancy. While this is occurring, the ovaries are stimulating follicles to produce an ovum so it can travel through the respective fallopian tube to become fertilized. The process of the ovum traveling through the fallopian tube is known as ovulation. If fertilization does not occur, the egg breaks down, hormone levels drop and the thickened lining of the uterus begins to shed, which usually lasts anywhere from three to seven days. When OCs are used, this whole process is still the same; however, the reason for bleeding is different. While taking OCs the body is blasted with added hormones for up to twenty-one days. When these hormones are suddenly stopped for the next seven days, during the time the woman will take the inactive placebo pills, the uterus bleeds in response to the sudden hormone withdrawal (Hinkle, J. L., & Cheever, K. H., 2013).

When ovulation is occurring, the female reproduction system is producing “estrogen-stimulated cervical mucus” (Nasaralla et al., 2011, p. 170) which helps women achieve pregnancy. A retrospective cohort study was performed comparing the characteristics of biomarkers of the menstrual cycle in women who have not been on OCs for at least one year to women who have just discontinued using OCs. The authors based their research off of the theory that chances of conceiving may be diminished within the immediate months after cessation of OCs. The research study examined how long, after discontinuation of OCs, the menstrual cycle is altered for. This information is useful to both couples who are trying to conceive and for

couples who do not wish to be with child. Nasaralla et al. were aiming to educate women on the menstrual cycle function after OCs are discontinued. The way in which the researchers conducted this survey was by having either a physician or nurse, who was certified to teach participants the Creighton Model Fertility*Care* System (CrMS), teach them how to use it. The CrMS was used to monitor and record biomarkers of participants in a unified way (Nasaralla et al. 2011). The biomarkers that were monitored were overall cycle length, length of the luteal phase, estimated day of ovulation, duration of menstrual flow, menstrual intensity, and mucus score. The conclusion of this study stated that the changes in the biomarkers of the women's menstrual cycle "may help explain why there is a decrease in the chances for a couple to conceive within the first few months after discontinuation of OCs" (Nasaralla et al., 2011, p. 176). Many women, who begin OCs, essentially start "the pill" blind; unaware of how it effects the female body. While on these hormones, women are content with how OCs are doing their job and they tend to not think about their future until later on in life. Many women choose OCs as their form of birth control through their twenties or until they decide that a family is something that they want. The conclusion of this study is useful to the population of women that wish to use OCs as birth control until they decide to start a family because recent cessation of OCs can hinder a couple's chance of becoming pregnant within the immediate months after termination.

### **OCs and side effects**

Side effects are something that accompany every menstrual cycle and are unique to each woman. Some may experience severe cramping with migraines while others may experience a breakout of acne a week prior to the beginning of her menstruation. Some of these side effects may be mild while others can be quite severe. Claudia Vogt and Marion Schaefer were curious

as to how much women understood these OCs so they created a study to “investigate how women understand the benefits and risks of combined oral contraceptives, and compare their assessments with an expert model generated from research comprised of literature and guidelines” (Vogt & Schaefer, 2012, p. 1405). The title of their research study was *Women’s beliefs of benefits and risks associated with Combined Oral Contraceptives*; Vogt and Schaefer conducted two qualitative research studies where they had the women report both risks and benefits of combined oral contraceptives. The purpose of this article was “to investigate how women understand the benefits and risks of COCs, [and then compare] their assessments with an expert model created from literature- and guideline-based research and reviewed by a sample of gynecologists using the mental models approach” (Vogt & Schaefer, 2012, p. 1405). The mental models approach allowed women to “derive recommendations [which] adequately inform and counsel women about COCs” (Vogt & Schaefer, 2012, p. 1406), indicating that the researcher’s not only wanted a professional standpoint of COCs, but also a consumer’s perspective.

When analyzing the data, the researchers noticed that women seemed to either underestimate the effectiveness or overestimate the risks (Vogt & Schaefer, 2012), and they documented this by dedicating certain subsections to their discoveries. Under *Healthcare providers’ beliefs of benefits and risks associated with COCs*, Vogt and Schaefer explain how it is the responsibility of the physicians to communicate, both the positive and negative, findings of the experiments conducted by the pharmaceutical companies to the COC users. Studies conducted by many researchers proved that 21-38% of healthcare providers had incorrect knowledge of contraceptives, and another study proved that female adolescents were not well-educated on the contraceptives that they were taking (Vogt & Schaefer, 2012, p. 1408). Vogt and Schaefer also state that, to their knowledge, “the mental models approach was never applied to

investigate the differences in individual perceptions of risk associated with drugs” (Vogt & Schaefer, 2012, p. 1408).

Prompted or unprompted, the research showed an overall positive attitude towards combined oral contraceptives (COCs) even if there were more negative concepts that outweighed the positive ones. This could possibly “indicate a late cognitive dissonance” (Vogt & Schaefer, 2012, p. 1405), meaning that even though these women have knowledge that the risks outweigh the benefits, they still wish to believe that combined oral contraceptives are more beneficial. This study concludes that the mental models approach is indeed “beneficial for the communication of the benefits and risks associated with the use of COCs, in particular, and for the use of drugs in general” (Vogt & Schaefer, 2012 p.1422). The authors make it clear that women may need further counseling to fully understand the risks and benefits of using COCs and that further research could be conducted to define the impact that missing basic knowledge of COCs has on the safety of consumers and its efficacy.

### **Significance**

The significance of this project was to see if consumers and college students truly understood oral contraceptives and the potential side effects and risks that they can have.

### **Purpose**

The specific aims of this study were to measure college students understanding of oral contraceptives and their potential side effects, collectively, along with determining if there is a measurable difference in comprehension between nursing and non-nursing students at Salem State University.

## **Methodology**

### **Design**

A quantitative research study was conducted from November 2015 until December 2015 to analyze the comprehension that college students had on OCs, as well as to determine if the purpose statement, see page (INSERT PAGE HERE), was accurate. A quantitative approach allowed for easier comparison between the two majors.

### **Sample/Setting**

A convenience sample of 100 undergraduate students at Salem State University in Salem, MA, partook in this survey. The criterion that participants had to meet was that they had to be either a nursing or non-nursing student; essentially, as long as an individual was an undergraduate at Salem State University, they could participate in this survey. The ten question survey was created on an online survey generator called surveymonkey. Once the final product was complete, the survey was sent out to both nursing and non-nursing majors via listserv. The nursing Compliance Coordinator and various other nursing faculties, at Salem State University, were contacted to send the survey out to all members of the nursing program within the university. Various other department coordinators were contacted and the same request was asked of them.

The survey had multiple questions that gauged consumer's perceived knowledge on "the pill" as well as true and false questions to test a few truths and fallacies that are out there about OCs. Also contained within the survey was an available option for participants to state where they got their knowledge of these side effects from, any other side effects they knew of and any other questions or concerns they had about OCs.

### **Ethical Considerations**

Prior to data collection, permission was granted from the Institutional Review Board at Salem State University to begin data collection on the awaited research study (see appendix A). Once permission was granted the survey was sent out via listserv to students. When participants clicked the survey they were brought to the first page which was a disclosure statement (see appendix B) prior to beginning the survey. Participants were expected to read this statement and decide whether or not they wished to partake in this survey. If, after reading the statement they agreed to what they have read, they were prompted to press the next button. By hitting this next button, they were consenting to participating in the survey. Before pressing that button, the last line read “By clicking next you are stating that you have read and agree to the disclosure statement above,” which ensured that the participant is committed to this survey. If after reading the statement they did not wish to partake in the survey, they had the right to leave the sight and not participate. No penalty resulted from opting out of taking the survey at the last minute and participants were told that they had the ability to end the survey at any time.

Anonymity and confidentiality were also considered when creating this survey online. The only identifiable aspect of the survey would be the gender and class level of the participant. That being said, the chances are close to zero percent for identifying each participant. The survey was created on a website that did not require any log in information consisting of a name, email address, username or any identifiable information. All information and results collected were kept confidential and stored in a password protected electronic format. To ensure confidentiality, the survey did not contain any identifiable information such as name, email address, IP address, or anything of the sort. All collected results were used for scholarly purposes only. After obtaining all of the completed surveys, thirty nursing and thirty non-nursing surveys were chosen at random making it nearly impossible for any participants to be identified.

This study was categorized under “minimal risk” due to the fact that participation in this survey had no known risks to participants. Participants were able to partake in their everyday activities on the same day that they completed this survey. Contributors did not have to devote a major portion of their day to completing this survey because it took a maximum of five to seven minutes to complete. This survey was designed to merely evaluate the knowledge of oral contraceptive users and non-users, and see if being a nursing major has any influence over this knowledge.

### **Data Collection**

Participants consisted of nursing students and non-nursing students who were in their undergraduate career at Salem State University (n=100). The 100 participants completed an online survey which asked them a series of questions relating to oral contraceptives.

### **Data Analysis**

Of the 100 completed surveys, sixty surveys were chosen at random to compare the answers of nursing majors (n=30) to non-nursing majors (n=30). The survey was composed of 10 questions that consisted of 2 one option only questions, 4 select all that apply, 3 true or false and one fill in the blank. Results of each question were tallied and Microsoft Excel was used to produce percentages and graphs. Percentages were rounded to the nearest whole number for ease of interpretation of findings.

## Results

Before analyzing the data collectively as a whole, the statistics of each question were looked at independently by comparing nursing majors to non-nursing majors. Typically, freshman and sophomores are categorized as underclassmen and juniors, seniors and super seniors are categorized as upperclassmen. These categories were utilized when analyzing who exactly participated in the survey. This gave an idea of how much schooling the majority of the participants had gone through and allowed for further evaluation of the results. In evaluating the class standing of participants, nursing majors were composed of 40% underclassmen: 10% freshman/in their first year of their undergraduate career and 30% sophomores/in the second year, while the other 60% were upperclassmen: 23% juniors/in their third year, 30% seniors/have been in their undergraduate career for four years, and 7% were super seniors who have been in their undergraduate career for five or more years. Non-nursing majors were comprised of 34% underclassmen: 7% were freshmen and 27% were sophomores, while 66% were upperclassmen: 30% were juniors, 23% were seniors and 13% were super seniors.

When asked the birth control method that was most relevant to the participant, they were prompted to choose any and all methods that are currently on or have been on in the past. Nursing majors answers were as followed: 53% of participants stated that they are currently taking OCs where a period is scheduled to occur once a month, 12% selected they have taken OCs where a period was scheduled to occur once a month, 9% chose the option "I am currently taking oral contraceptives & I use a three month dose where the placebo pills are used once every four months; a period scheduled to occur three times per year, and 0% indicated that have taken OCs where a period was scheduled to occur three times per year. Other birth control methods were available for selection as well and 0% stated they currently use the birth control

patch, 3% stated they are using the implanon bar, 6% stated they are using an IUD, 3% stated they use the shot, 6% selected that they use abstinence as a form of birth control and 9% of participants chose the option “I am on another form of birth control not specified here” and they were asked to specify in a space provided. The answers were condoms, NuvaRing and a participant stated they are currently taking OCs where continuous hormones are used due to having endometriosis. When evaluating the same question, non-nursing majors answers were as follows 46% of participants stated that they are currently taking OCs where a period is scheduled to occur once a month, 9% selected they have taken OCs where a period was scheduled to occur once a month, 3% chose the option “I am currently taking oral contraceptives & I use a three month dose where the placebo pills are used once every four months; a period scheduled to occur three times per year, and 3% indicated that have taken OCs where a period was scheduled to occur three times per year. Of the other birth control methods that were available for selection 0% stated they currently use the birth control patch, 3% stated they are using the implanon bar, 11% stated they are using an IUD, 0% stated they use the shot, 6% selected that they use abstinence as a form of birth control and 20% of participants chose the “other”. Both condoms and the NuvaRing were specified twice and the other responses were “I am a male and do not use OCs” and “none.”

When questioned why participants believe that females begin OCs, nursing majors and non-nursing majors could select more than one answer. Twenty-nine percent of nursing majors believed that women begin OCs as a means of birth control, 21% believed they begin it as a means of acne, 27% believe they begin it to help regulate a woman’s menstrual cycle, 20% believe they begin it to help control cramps and 2% chose to state another reason why women may begin on OCs. The first answer stated that women begin OCs to decrease the risk of ovarian

cancer and formation of ovarian cysts, and another stated that women begin OCs to regulate their hormones. Thirty percent of non-nursing majors believe that women begin OCs as a means of birth control, 18% it is started to help control acne, 27% believe females begin OCs to regulate a woman's menstrual cycle, 25% believe OCs are started to help control cramping and 0% of participants who were non-nursing majors knew of another reason why women begin OCs.

In examining the answers for the question "please state any side effects that you are aware OCs can have on consumers", responses ranged greatly; mainly due to the fact that respondents could select all answers that apply to their beliefs. When examining the side effects nursing majors chose the following statistics were found: 23% selected weight gain, 4% chose weight loss, 13% said migraines, 9% picked acne, 3% selected hair loss, 14% chose irritability, 16% indicated that increased breast pain, tenderness or swelling was a side effect, 10% said increased bloating, 4% chose death and 5% of participants opted to state another side effect they are aware that OCs can have on consumers. One participant stated that a deep vein thrombosis (DVT) could result from taking OCs, while another participant stated increased blood pressure, an additional participant stated a stroke as a side effect and four participants stated blood clots. In examining the answers of non-nursing majors, the following was found: 20% of participants chose weight gain, 8% chose weight loss, 9% chose migraines, 10% chose acne, 2% selected hairloss, 16% stated irritability, 17% selected increased breast pain, tenderness or swelling as a side effect, 16% picked an increase in bloating, 2% chose death and 2% of participants of non-nursing majors chose to state another side effect they are aware that OCs can have on consumers. The two participants both stated the same side effect; blood clots.

Question six asked participants to select how they learned of these side effects, and they were allowed to select more than one answer. Twenty-four percent of nursing majors stated they

learned of these side effects from their doctor, 3% chose a pharmacist, 19% selected the packaging as their source of information, 9% chose the internet, 3% selected television, 24% chose the option of personal experience, 13% picked that they learned their information from a friend and 6% of nursing majors stated another source for how they learned of these side effects. One participant chose nursing school, two participants stated “a professor” and one participant stated “class”; it is safe to assume that all four participants who chose to fill out this “other” selection, learned of these side effects from a nursing professor while in nursing class. Non-nursing majors answers did not differ much from nursing majors answers: 29% chose a doctor, 5% chose a pharmacist, 19% selected the packaging as their source of information, 13% chose the internet as how they learned of the side effects, 6% selected television, 11% picked personal experience, 16% chose a friend as their source of information while 2% of participants learned of these side effects from another source. The one participant that selected to state another source of information chose to state that they learned of these side effects from “my mom”.

For the last leg of the survey, questions seven through nine asked participants to choose either true or false as an answer. Question seven asked the question “Smoking while taking oral contraceptives increases your risk of developing a thromboembolism (a blood clot in your lungs)”; 93% of nursing majors true while 7% chose false, compared to 87% of non-nursing majors who chose true and 13% who chose false. When asked if a consumer is at an increased risk of developing rare, unwanted diseases, regardless of their current health status prior to starting “the pill”, 53% of nursing majors said this was true and 47% said this statement was false, as where 60% of non-nursing majors agreed with this statement and 40% disagreed with this statement. The last true or false question stated that OCs increase a consumers risk of developing breast cancer; 43% of nursing majors selected true and 57% selected false, ironically

non-nursing majors had the same statistics; 43% selected true and 57% selected false. The last question gave participants a chance to specify any other information about birth control that they may have or to ask any questions that they had about OCs. Of the nursing majors who chose to fill this question out, only one participant did so and they stated that “birth control prevents against ovarian cancer as well”. The one non-nursing major who opted to fill out this section asked if OCs will affect them having kids.

### Discussion

Before beginning this survey, the original hypothesis was that nursing majors would know much more than non-nursing majors. Although some of the questions had multiple correct answers to choose from, the “other” section of each question was the main focal point of the questionnaire. It is easy for participants to choose the correct answer(s), but did they have any knowledge of questions that weren’t listed in the given selections? After conducting this survey it was found that nursing majors did know more than non-nursing majors, but the difference in knowledge was not as significant as first thought.

Nursing majors did seem to have an upper hand when filling out this survey; as they correctly identified high blood pressure, DVTs, strokes and blood clots as a potential side effect that OCs can have. Generally speaking, nursing majors learn of risk factors that increase your risk of having these stated side effects from various nursing classes. In these classes, the mechanics of the body are learned in relation to how certain medications act on the human body. Logically speaking, it could be assumed that the vast majority of nursing major participants learned of these side effects from certain nursing classes. Another reason why this could safely be assumed is due to the fact that 60% of the respondents were upperclassmen while 40% were underclassmen. That being said, upperclassmen have completed more classes that cover more nursing related topics than underclassmen, which would contribute to the fact that nursing majors did have more of an understanding of side effects than non-nursing majors. Although nursing majors did have a slight advantage over the participants who were non-nursing majors, the later correctly identified blood clots as a side effect that OCs can have upon consumers. This could be contributed to the fact that the majority, roughly 29% of participants, chose that they learned of these side effects from a doctor. Doctors are the ones that are partly responsible for educating

consumers on side effects which could explain the correct side effect listed in “other” from non-nursing majors.

It is important for consumers and women alike to know what effects these added hormones can have upon their body. When there is a lack of knowledge among consumers, misconceptions and misjudgments begin to arise, creating negative feelings about OCs that shouldn’t be flourishing. As shown in Table 1, participants had varying responses when asked about the side effects that OCs can have. It is important for participants, consumers, and women of all ages to know that side effects are individualized. When evaluating the data, the selections

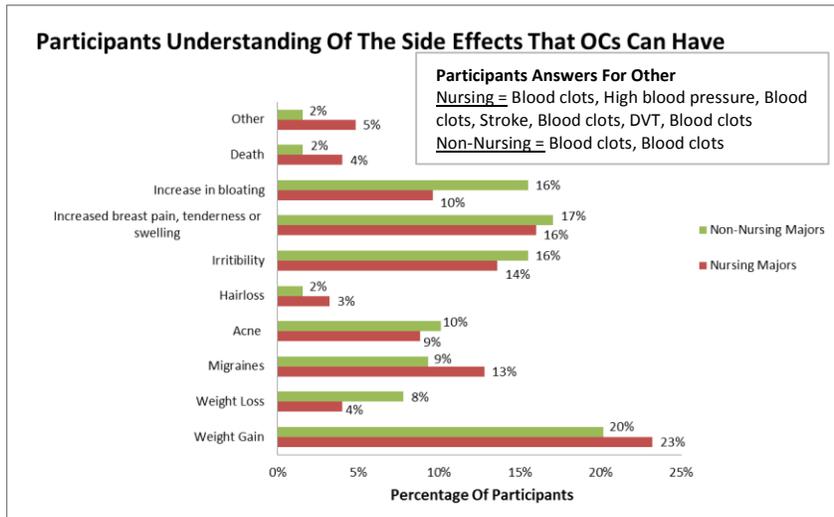


Table 1: Participants were asked to indicate which side effects oral contraceptives can have

themselves were not what were in question. It can be easy for anybody to read options and select the ones that they believe are valid to the question; however, it is always interesting to see if participants know more than what is given to them as

options.

Another vital piece of information on OCs and all forms of birth control is how these women receive their information. Table two compares the answers of nursing majors vs. non-nursing majors when they were asked of how they learned of these side effects. As shown above, more non-nursing majors learned of such side effects from a doctor than nursing majors. This is semi-alarming, due to the fact that all women should be educated on all aspects of birth control

ers For Other  
 sor, In Class,  
 Professor  
 mother

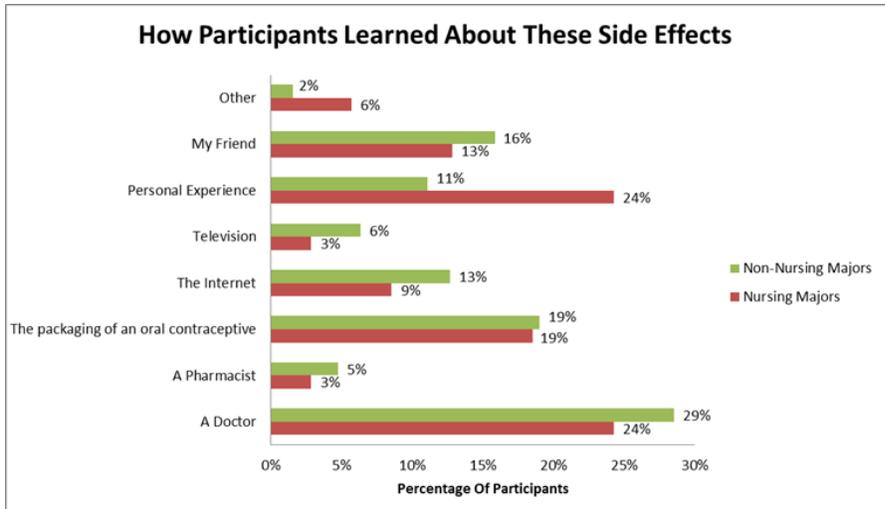


Table 2: Participants were asked to state where they learned of these side effects

from their primary care physicians. When this information is learned from a source that does not have a degree within the medical field, women run the risk of receiving false information, as well

as facts that may be unique to that individual’s personal experiences or their personal beliefs.

Healthcare professionals have the appropriate medical background to help women make an appropriate decision on whether or not to begin OCs. If a woman abides by a strict schedule and has superb time management, than a healthcare provider would think that OCs would be a great choice for her. Alternately, if a woman is often forgetful a healthcare provider would not suggest the use of OCs due to the fact that “most unintended pregnancies are caused by missing tablets” (Wiegratz & Kuhl, 2004, p. 2450). That being said, “Many elements need to be considered by women at any given point in their lifetimes when choosing the most appropriate contraceptive method. These elements include safety, effectiveness, availability and acceptability” (Yu & Hu, 2010, p. 595). Often times, college aged women choose OCs for the sole fact that they are easily accessible at their schools health services center, rather than exploring other options of contraceptives that might be a better suit for them. This connects directly to Vogt & Schaefer’s article, which concluded that women have a positive attitude towards OCs and believe that all risks are outweighed by benefits. While this was proven true within their study, healthcare providers need to be sure to educate women on all aspects of OCs.

### **Study Limitations**

There were only two minor limitations of this study. First and foremost would be the online survey generator, surveymonkey. Originally, the plan was to collect sixty responses from nursing majors and sixty from non-nursing majors, having a total of one-hundred twenty surveys. Once 184 surveys were obtained, the beginning steps of analyzing the data were about to begin, however, due to not having a premium account on surveymonkey, only 100 were visibly available to analyze. That being said, a new number of participants had to be configured. Of the 100 that were viewed, 38 surveys accounted for nursing majors and 62 surveys accounted for non-nursing majors. To keep the data even on both ends, the ultimate decision was made to analyze a total of 60 surveys, 30 participants per category.

Another limitation that built off the original limitation would be the participants themselves. What is meant by this is that some contributors answer surveys wholeheartedly, some go through the motions, while others barely take the survey seriously; which is also known as bias. In the “other” option of various questions, answers ranged from valid responses to throwaway ones. Although this was only a minor limitation, it was a known limitation when collecting responses. As with any survey that is being conducted, there is always a chance that some responses may be meaningless and insincere.

### **Conclusion/Recommendations**

In relation to the practice of nursing it can be concluded that, collectively, college students need to be better educated on how OCs affect the body as well as the side effects that they can have upon consumers. When placing women on OCs, healthcare professionals should take the time to talk to these women about how OCs work independently on each consumer. Some women are under the impression that OCs have the same mechanism of action on every user. It is important for nurses and doctors to stress that what works for one user may not work for another, and that it may take a woman a few different kinds of OCs before they find the one that is right for them. Along with educating women about how OCs work, teaching them of the side effects is key to comprehension of OCs as well. Many people may think that beginning OCs immediately puts them at risk for developing a plethora of side effects that range from minor to life threatening. Healthcare professionals need to educate women and consumers alike that beginning OCs may put you at an increased risk for certain side effects, but it does not mean that if they take “the pill” they may die. They need to educate this population about how certain behaviors can increase the risk of developing unwanted side effects that are potentially life threatening. For example, a woman who begins OCs should be taught that smoking will increase her risk of developing a blood clot, which can increase the risk of a stroke or even death. Women should also be taught that engaging in promiscuous behavior, such as engaging in sexual intercourse without using condoms, can increase their chances of getting sexually transmitted diseases or infections which can increase their chances of developing more life threatening side effects. All around, healthcare workers need to work together to make women aware of how OCs can affect their body and which side effects they can develop and how they can avoid developing more serious side effects.

In conducting future research in the area of OCs, recommendations could be made to improve college student knowledge of OCs. It would be of interest to further conduct an intervention study to see if further education of these participants would help to increase knowledge. A study allowing a nurse, nurse practitioner, physician's assistant or doctor to educate the participants about how OCs work and the side effects that can occur would allow for an open conversation between healthcare professionals and college students to help decipher the truth from misconceptions. Having a schoolwide information session with a comprehensive quiz both prior to the beginning of the session and at the end of the session would help to see if knowledge about contraceptives in general would increase.

Most women get to college and feel a sense of freedom from their old life. They generally do not have to follow a lot of strict rules and have a lot more independence in making choices for themselves. One of the first things a lot of female college students do is begin themselves on birth control; typically OCs. Many consumers do not know the toll that these hormones can take on their body. A schoolwide information session in the context of a research study to measure knowledge changes post-intervention would be beneficial to not only incoming freshman, but to women of all ages.

### References

- Freund, R., Kelsberg, G., & Safranek, S. (2014). Clinical inquiry: Do oral contraceptives put women with a family history of breast cancer at increased risk? *Journal of Family Practice*, 63(9), 540-549.
- Hinkle, J. L., & Cheever, K. H. (2013). *Brunner & Suddarths Textbook of Medical Surgical Nursing* (13th ed.). Lippincott Williams & Wilkins.
- Lanfranchi, A. (2014). Normal breast physiology: The reasons hormonal contraceptives and induced abortion increase breast-cancer risk. *Issues in Law & Medicine*, 29(1), 135-146.
- Mayeda, E., R., Torgal, A., H., & Westhoff, C., L. (2014). Weight and body composition changes during oral contraceptive use in obese and normal weight women. *Journal of Women's Health* (15409996), 23(1), 38-43. doi:10.1089/jwh.2012.4241
- Nassaralla, C., L., Stanford, J., B., Daly, K., D., Schneider, M., Schliep, K., C., & Fehring, R., J. (2011). Characteristics of the menstrual cycle after discontinuation of oral contraceptives. *Journal of Women's Health* (15409996), 20(2), 169-177. doi:10.1089/jwh.2010.2001
- Teepker, M., Peters, M., Kundermann, B., Vedder, H., Schepelmann, K., & Lautenbacher, S. (2011). The effects of oral contraceptives on detection and pain thresholds as well as headache intensity during menstrual cycle in migraine. *Headache: The Journal of Head & Face Pain*, 51(1), 92-104. doi:10.1111/j.1526-4610.2010.01775.x

Vogt, C., & Schaefer, M. (2012). Seeing things differently: Expert and consumer mental models evaluating combined oral contraceptives. *Psychology & Health, 27*(12), 1405-1425.

doi:10.1080/08870446.2012.678357

Wiegratz, I., & Kuhl, H. (2004). Long-cycle treatment with oral contraceptives. *Drugs, 64*(21), 2447-2462.

Yu, J., & Hu, X., H. (2013). Inappropriate use of combined hormonal contraceptives for birth control among women of reproductive age in the united states. *Journal of Women's Health (15409996), 22*(7), 595-603. doi:10.1089/jwh.2012.3955

**Appendix A**  
*Letter of Approval from IRB*

Notice of Exemption {Exempt 45 CFR 46.101(b)}

The Office of Sponsored Programs and Research Administration has evaluated the project named above. According to the information provided, you intend to study Nursing Students' Compared to Non-Nursing Students' Understanding of Oral Contraceptives. This is a minimal risk study.

This study has been granted an exemption from Salem State IRB review in accordance with 45 CFR 46.101 (b) under one of the following categories:

1. Research conducted in established or commonly accepted educational settings, involving normal educational practice, such as (a) research on regular and special education instructional strategies or (b) research on the effectiveness of or the comparison among instructional techniques, curricula or classroom management methods.
2. Research involving the use of educational tests (cognitive, diagnostics, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless (a) information obtained is recorded in such a manner that subjects can be identified directly or through identifiers linked to the subjects and (b) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects financial standing, employability or reputation.
3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior that is not exempt under #2 above if (a) the human subjects are elected or appointed officials or candidates for public office, or (b) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
4. Research involving the collection or study of existing data, documents, records, pathological specimens or diagnostic specimens, if these sources are publicly available or the information is recorded by the investigator in such a manner that the subjects cannot be identified directly or through identifiers linked to the subjects.
5. Research or demonstration projects which are conducted by or subject to the approval of the federal or state department or agency heads and which are designed to study, evaluate or otherwise examine (a) public benefit or service programs, (b) procedures for obtaining benefits or services under those programs (c) possible changes in or alternatives to those programs or procedures or (d) possible changes in methods or levels of payment for benefits or services under those programs.
6. Taste and food quality evaluation and consumer acceptance studies, if (a) wholesome foods without additives are consumed or (b) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental

Protection Agency or the Food Safety and Inspection Service of the Department of Agriculture.

This designation is based on the assumption that the materials that you submitted to SPRA contain a complete and accurate description of all the ways in which human subjects are involved in your research.

This exemption is given with the following conditions:

1. You will conduct the project according to the plans and protocol you submitted;
2. No further contact with SPRA is necessary unless you make changes to your project or adverse events or injuries to subjects occur;
3. If you propose to make any changes in the project, you must submit the changes to the SPRA for IRB review. You will not initiate any changes until they have been reviewed and approved by the IRB;
4. If any adverse events or injuries to subjects occur, you will report these immediately to SPRA.

The University appreciates your efforts to conduct research in compliance with the federal regulations that have been established to ensure the protection of human subjects in research.

**Date of Exemption:** November 5, 2015

**Date of Salem State University IRB Approval:** November 5, 2015

**If you are conducting research using an online survey such as Survey Monkey, the IRB requires that the approval dates appear on the online consent page of your survey.**

This research project has been reviewed by the Institutional Review Board at Salem State University in accordance with US Department of Health and Human Services Office of Human Research Protections 45 CFR part 46 and does not constitute approval by the host institution.

1. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior that is not exempt under #2 above if (a) the human subjects are elected or appointed officials or candidates for public office, or (b) federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.
2. Research involving the collection or study of existing data, documents, records, pathological specimens or diagnostic specimens, if these sources are publicly available or the information is recorded by the investigator in such a manner that the subjects cannot be identified directly or through identifiers linked to the subjects.
3. Research or demonstration projects which are conducted by or subject to the approval of the federal or state department or agency heads and which are designed to study, evaluate or otherwise examine (a) public benefit or service programs, (b) procedures for obtaining benefits or services under those programs (c) possible changes in or alternatives to those

programs or procedures or (d) possible changes in methods or levels of payment for benefits or services under those programs.

4. Taste and food quality evaluation and consumer acceptance studies, if (a) wholesome foods without additives are consumed or (b) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the Department of Agriculture.

This designation is based on the assumption that the materials that you submitted to SPRA contain a complete and accurate description of all the ways in which human subjects are involved in your research.

This exemption is given with the following conditions:

1. You will conduct the project according to the plans and protocol you submitted;
2. No further contact with SPRA is necessary unless you make changes to your project or adverse events or injuries to subjects occur;
3. If you propose to make any changes in the project, you must submit the changes to the SPRA for IRB review. You will not initiate any changes until they have been reviewed and approved by the IRB;
4. If any adverse events or injuries to subjects occur, you will report these immediately to SPRA.

The University appreciates your efforts to conduct research in compliance with the federal regulations that have been established to ensure the protection of human subjects in research.

**Date of Exemption:** November 5, 2015

**Date of Salem State University IRB Approval:** November 5, 2015

**If you are conducting research using an online survey such as Survey Monkey, the IRB requires that the approval dates appear on the online consent page of your survey.**

This research project has been reviewed by the Institutional Review Board at Salem State University in accordance with US Department of Health and Human Services Office of Human Research Protections 45 CFR part 46 and does not constitute approval by the host institution.

## **Appendix B**

### *Participant Disclosure Statement*

You are invited to participate in this research project to help in understanding what is known about the side effects of oral contraceptives. This is a survey that is being conducted by Victoria Quirk, a senior at Salem State University that is a nursing major, as well as a member of the Commonwealth Honors Program. This survey is designed to merely evaluate the knowledge of both nursing majors and non-nursing majors, who may be either users or non-users of oral contraceptives, to see if the side effects and risks are better understood by nursing majors compared to non-nursing majors.

Your participation in this research study is completely voluntary and you have the option of not participating. Should you choose to not participate in this study or withdraw your participation no punishment will result. Participation in this study will be completely confidential. Understand that your name or identity will not be used in reports or presentations of the findings of this research. The information provided to the researchers will be kept confidential with the exception of information which must be reported under Massachusetts and Federal law such as cases of child or elder abuse. All information and results collected will be kept confidential and stored in a password protected electronic format. To ensure your confidentiality this survey will not contain any identifiable information such as your name, email address, IP address, or anything of the sort. All results that will be collected will be used for scholarly purposes only. After obtaining all of the completed surveys a sum of the findings will be presented and shared with Salem State University representatives and any that wish to read the completed research project. If you wish to view the completed research project, a copy will be available in the Salem State Honors center located at the, Frederick E. Berry Library and Learning Commons, Suite 112.

This survey includes a total of ten questions: two multiple choice questions, four select all that apply and three true or false questions, all which require an answer, and one fill in the blank, which only has to be filled out if applicable and will take a maximum of five to seven minutes to complete. The survey questions will ask you your gender, current major, standing class, whether or not you are, or have been, a current oral contraceptive user or use any form of birth control and if so which kind, why a woman begins oral contraceptives, the side effects that oral contraceptives may have that you are aware of, how you learned of these side effects, and whether or not certain risks associated with the pill are true or false.

The benefit of this research is the hope that participants will gain a better understanding of what side effects oral contraceptives have as well as the risks that are associated with taking them. This survey is designed to merely evaluate the knowledge of oral contraceptive users and non-users, and see if being a nursing major has any influence over this knowledge. There are no potential risks of participating in this survey, therefore the benefits of increasing consumer, and all-around, knowledge about oral contraceptives outweighs any risks.

If you have any questions about the research study, please contact Victoria Quirk at [v\\_quirk@salemstate.edu](mailto:v_quirk@salemstate.edu), or her faculty advisor Hannah Fraley at [hfraley@salemstate.edu](mailto:hfraley@salemstate.edu). This research has been reviewed according to Salem State University IRB procedures for research involving human subjects. This includes research conducted on or off campus, whether the

research is federally funded or not. By clicking next you are stating that you have read and agree to the disclosure statement above.

**Date of Exemption:** November 5, 2015

**Date of Salem State University IRB Approval:** November 5, 2015

Thank you for your participation, your feedback is important.

### Appendix C

#### Participant Survey

#### Nursing Students' Compared to Non-Nursing Students' Understanding of Oral Contraceptives

1. Please identify as one of the following (multiple choice)
  - a. I am a Male nursing major
  - b. I am a male non-nursing major
  - c. I am a Female nursing major
  - d. I am a female non-nursing major
  - e. I am a nursing major & I prefer not to reveal my gender
  - f. I am a non-nursing major & I prefer not to reveal my gender
2. Please choose your class standing (multiple choice)
  - a. Freshman/ 1<sup>st</sup> year
  - b. Sophomore/ 2<sup>nd</sup> year
  - c. Junior/ 3<sup>rd</sup> year
  - d. Senior/ 4<sup>th</sup> year
  - e. Super senior (5+ years)
3. Please select the birth control method that is most relevant to you: (if you have used more than one method, please select all that are relative to you) (select all that apply)
  - a. **I am currently taking oral contraceptives** & I use a monthly dose where the placebo pills are used for one week out of the month; a period scheduled to occur
  - b. **I have taken** oral contraceptives where a monthly dose was taken & the placebo pills were used for one week out of the month; a period scheduled to occur once a month
  - c. **I am currently taking oral contraceptives** & I use A three month dose where the placebo pills are used once every four months; a period scheduled to occur three times per year
  - d. **I have taken** oral contraceptives where a three month dose is taken & the placebo pills are used once every four months; a period scheduled to occur three times per year
  - e. I am on the birth control patch
  - f. I am using the implanon bar
  - g. I am using an IUD
  - h. I am on the shot
  - i. I am using abstinence as birth control
  - j. I am on another form of birth control not specified here: (please specify)
4. Please select the reasons for which you believe a female may begin oral contraceptives (select all that apply)
  - a. I believe a woman begins oral contraceptives as a means of birth control
  - b. I believe a woman begins oral contraceptives as a means to help control acne
  - c. I believe a woman begins oral contraceptives as a way to regulate her menstrual cycle
  - d. I believe a woman begins oral contraceptives as a means of helping her cramps
  - e. Please state any other reasons why you believe a woman begins oral contraceptives: (please specify)

5. Please select any side effects that you are aware oral contraceptives can have upon consumers (select all that apply)
  - a. Weight gain
  - b. Weight loss
  - c. Migraine
  - d. Acne
  - e. Hair loss
  - f. Irritability
  - g. Increased breast pain, tenderness, or swelling
  - h. Increase in bloating
  - i. Death
  - j. Other: (please specify)
6. How did you learn of these side effects? (select all that apply)
  - a. A doctor
  - b. A pharmacist
  - c. The packaging of an oral contraceptive
  - d. The internet
  - e. Television
  - f. Personal experience
  - g. My friend
  - h. Other : (please specify)
7. True or False: Smoking while taking oral contraceptives increases your risk of developing a thromboembolism (a blood clot in your lungs)
  - a. True
  - b. False
8. True or False: No matter what your current health situation is prior to starting the pill, you are at an increased risk of developing rare, unwanted diseases
  - a. True
  - b. False
9. True or False: Oral Contraceptives increase your risk for developing breast cancer
  - a. True
  - b. False
10. Please use this space to specify any other information about birth control which you may have or any questions that you have: (Free text box)