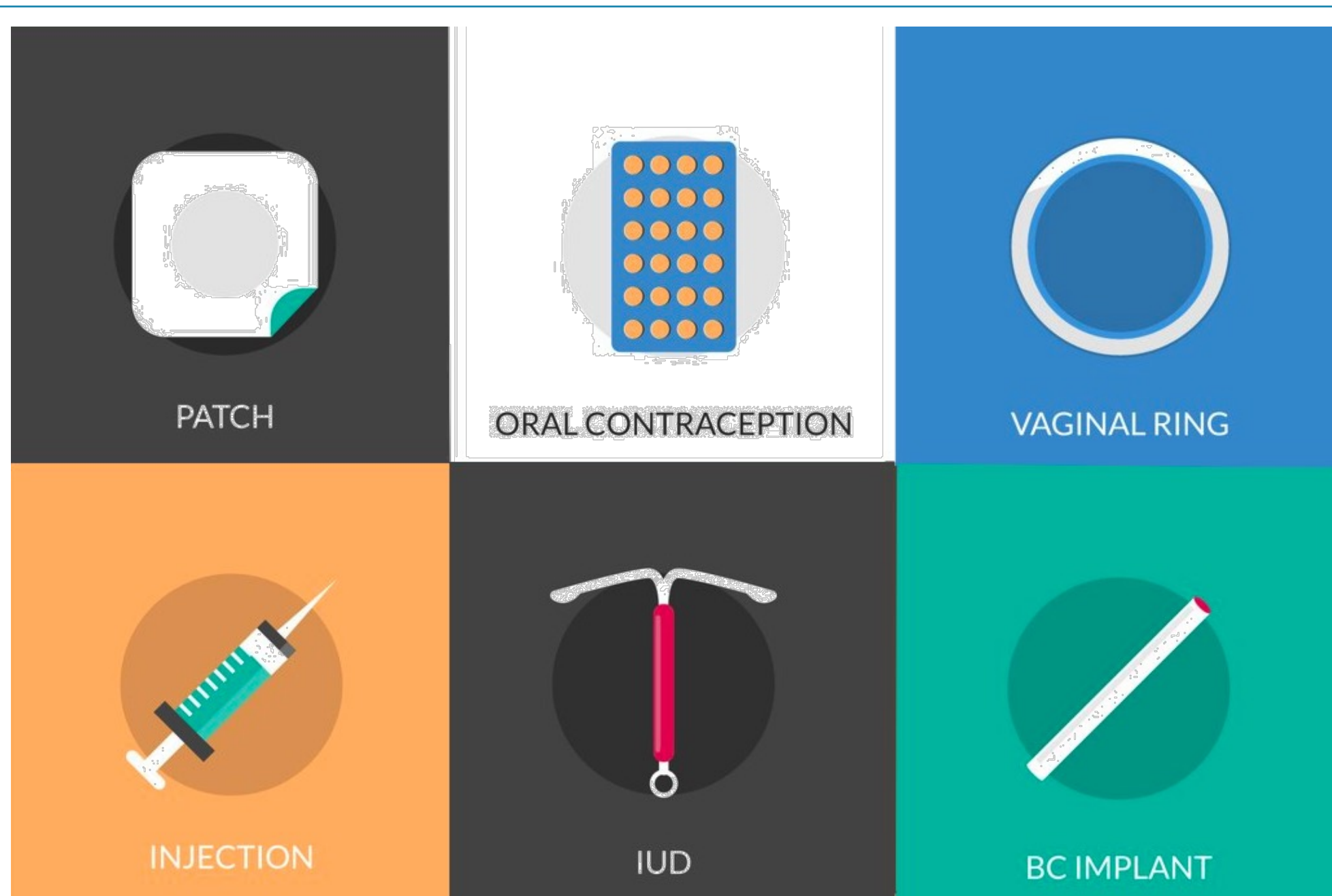


Knowledge of Contraceptive Use in Women with Migraine with Aura in Primary Care

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Introduction

Thirty-five million people annually suffer from migraines in the United States. Migraine with aura is a complication that women experience more than men, 5.3% compared to 1.9%.⁴ Hormonal contraception is the most common form of birth control and is given to a significant proportion of reproductive-age women affected by migraines.³ Even though “Medical Eligibility Criteria for Contraceptive use” has been released by the CDC in 2016, it is unclear if providers are adhering to it. The “Medical Eligibility Criteria for Contraceptive use” is used to assist health care providers on what specific contraceptive method would be most optimal for a woman based on her social and medical history. The aim of this study is to assess the knowledge of birth control in different medical conditions with a focus on women with migraines with aura and their confidence after giving them educational materials. The hypothesis is that the providers confidence will improve after viewing the educational material when answering the post- questionnaire. There will also be a significant difference in the accuracy of their answers in the post-questionnaire.



Various Forms of Prescribed Contraception

Methods and Materials

Pre and post-questionnaires assessed the knowledge of the primary care practitioner regarding birth control and miscellaneous medical conditions, that the woman may have. The questionnaires and educational materials were given to medical providers who practice in primary care settings. The conditions included in the questionnaire were Systemic Lupus Erythematosus, smoking at ages 35 and above, migraine with aura, and migraine without aura. In between questionnaires educational material regarding birth control options, definitions of migraine vs migraine with aura, and other disorders that should use non-estrogen birth control were provided via a PowerPoint Presentation. Providers were also given a URL for them to access “Medical Eligibility Criteria for Contraceptive use” from the CDC. The last question of the questionnaire assessed the confidence in their answer choices. After this, a paired t-test was utilized to compare the differences between the pre and post-questionnaire.

Migraine vs Migraine with Aura

- Migraine:** unilateral, pulsating pain with nausea, photophobia or phonophobia. Due to irritation of the CN V, meninges, or blood vessels
- Aura:** usually visual, but can also be sensory, motor or verbal disturbances/loss of speech.
 - Visual: zigzag lines, sickle or C shapes, pattern resembling a medieval fort, partial vision loss
 - Sensory: tingling or feeling of numbness

Contraception Types

Combined Estrogen and Progesterone	Progesterone only
Oral Contraceptive Pill	Progesterone Pill
The Patch	Implant: Nexplanon
The Ring	Hormonal IUD
	Shot: Depo- Provera

Migraine and Contraception

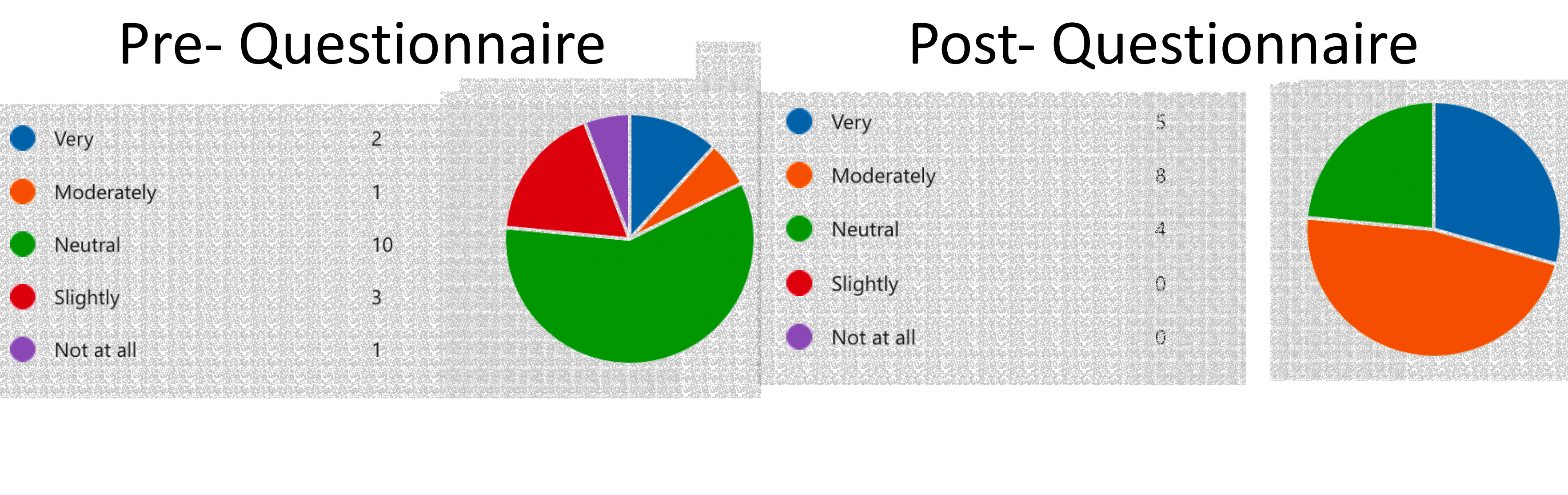
- Migraine with aura is associated with an increased risk of ischemic stroke.
- The CDC and American College of Obstetricians and Gynecologists recommend avoiding the use of estrogen-containing contraceptives in patients who have migraine with aura but also that their definition of aura is limited.
- Studies have found these major points:
 - The presence of migraine with aura and the use of combined oral contraceptives (COCs) are associated with an increased risk of ischemic stroke and stroke mortality.
 - Women with aura who have had migraines without aura also have an increased risk of ischemic stroke compared to women without aura.
 - Women with aura who have had migraines without aura also have an increased risk of ischemic stroke compared to women without aura.
 - Women with aura who have had migraines without aura also have an increased risk of ischemic stroke compared to women without aura.

Avoiding Combined Contraception in other Conditions

- Smoker and are over the age of 35 years old
- Diabetic nephropathy
- Hypertension – Systolic >160 or diastolic >100 mmHg
- Vascular disease
- Currently have breast cancer
- <21 days postpartum and breastfeeding
- Severe Cirrhosis
- Prostatecancer DUTPE
- History of Bariatric surgery
- History of Stroke
- Use of unknown/positive anti-phospholipid antibodies

Results

Seventeen family medicine providers answered the survey; only providers from the Morristown Medical Center were able to answer it. Data was analyzed using a paired t-test. It was hypothesized that there would be significant difference in confidence and answer choice accuracy between the two groups. Confidence in the providers' answers was measured on a scale of one to five, starting from not at all to very. The p-value was 0.0019 for confidence. Providers' knowledge was assessed pre and post-implementation of the educational material from the PowerPoint presentation. Each correct answer was given a value of one and the incorrect answer was given a zero; they were then given a cumulative score with the highest attainable score being a five. The p-value was 0.054 for accuracy. The p-value for the significance of this study was 0.05. There was a significant increase in the confidence of the providers when answering the questions after reviewing the PowerPoint presentation.



Pre and Post Questionnaires

- Which of the following contraceptive methods would you prescribe for the patients below: (choose all that apply)
- 47 year old current smoker, history of 20 pack years
 - Hormonal IUD
 - Non-hormonal IUD
 - Patch
 - Nuva Ring
 - Depo- Provera
 - Progesterone OCP
 - Combined OCP
 - Nexplanon
 - 32 year old who has a unilateral headache and sees flashing zig-zag lines in her vision
 - Hormonal IUD
 - Non-hormonal IUD
 - Patch
 - Nuva Ring
 - Depo- Provera
 - Progesterone OCP
 - Combined OCP
 - Nexplanon
 - 27 year old history of smoking and obesity
 - Hormonal IUD
 - Non-hormonal IUD
 - Patch
 - Nuva Ring
 - Depo- Provera
 - Progesterone OCP
 - Combined OCP
 - Nexplanon
 - 36 year old who has a unilateral headache, feels nauseous and is sensitive to the bright lights in the room
 - Hormonal IUD
 - Non-hormonal IUD
 - Patch
 - Nuva Ring
 - Depo- Provera
 - Progesterone OCP
 - Combined OCP
 - Nexplanon
 - 38 year old with Systemic Lupus Erythematosus with unknown anti- phospholipid antibody result
 - Hormonal IUD
 - Non-hormonal IUD
 - Patch
 - Nuva Ring
 - Depo- Provera
 - Progesterone OCP
 - Combined OCP
 - Nexplanon
 - How confident were you about the answers above?
 - Very
 - Moderately
 - Neutral
 - Slightly
 - Not at all

Discussion

This study showed that providers have become more confident after being provided information on a PowerPoint for this topic. It did not show an improvement in their knowledge in the subject. Previous studies that tested physician knowledge had demographic information as well as specialty information. Those studies have found that OB/Gyn as well as female providers had more knowledge on contraception use.² In this study there was no demographic information collected; the specialty that was questioned was Family Medicine Practitioners. There was another study that only focused on intrauterine contraception in family medicine physicians and also noted knowledge gaps.⁷ This can be contributing to not providing eligible woman with this option.

There are several limitations to the study. Sample size was limited as well as the department that it was only distributed to. In future studies, it can be further expanded to Internal Medicine, Pediatrics and OB/Gyn department's as well as to neighboring hospitals that have similar departments. People also have different learning styles- a PowerPoint was used, and providers had to read it on their own. For further studies, the PowerPoint can be presented and the pre and post questionnaire can be given at that time. The PowerPoint can also be given to people as a reference to use when they are doing the post questionnaire.

With these study results it is notable that there is a knowledge gap in providers when discussing contraceptive methods for women, especially with those who have disorders that prevents them from being prescribed estrogen containing birth control.

Conclusion

There was a significant difference in the confidence the providers had after the educational material was presented to them. There was no significant difference in the accuracy of their answers to the questions. There are several weaknesses in the study such as sample size and the way the educational material was presented. The lack of consistent and accurate knowledge about contraception among providers has the potential to affect providers' ability to provide quality contraceptive care for their patients. In prescribing the proper medications for women who have migraines with aura, there is an important aspect of the interrelationship of structure and function.

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