The Role of Art in Teaching Virtual Anatomy During the COVID-19 Pandemic

Shaigan Bhatti MS IV, Ash Thennapin MS IV, Rose Maxwell PhD, Marilyn Kindig DO
Department of Obstetrics and Gynecology, Boonshoft School of Medicine, Wright State University

Purpose

The purpose of this study is to determine whether drawing anatomical structures and teaching it virtually to others improves student confidence in remembering anatomy in the obstetrics and gynecology core clerkship.

Background

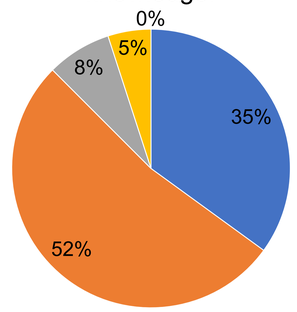
- Dissection is largely limited to the didactic years, which are traditionally the first two years of medical school education. Difficulties arise when students attempt to integrate the anatomy learned from dissections to anatomy in clinical settings during clerkship years.[1]
- Anatomy is taught much differently in clerkship years than it is in didactic years. In this digital age, many programs use online modules or PowerPoints in a computer-assisted learning (CAL) framework.[2]
- Numerous studies have shown that active recall is a superior method of learning and memory retention.[3] Active recall is a way of learning that practices information retrieval.[3]
- One method of learning anatomy that integrates active recall and small groups is through art. Specifically, if one draws an anatomic region of the human body within a small group and presents it to the larger group, the learner would be exercising retrieval thus promotion retention of the material.
- The specific act of physically writing things down on paper promotes memory retention.[4]
- Two of the most anatomically-oriented clerkships in the medical school curriculum are General Surgery and Obstetrics and Gynecology (OB/GYN).
- Previously, anatomy was being taught by self-study of anatomical pictures, and taking 5 quizzes on the content. This was an ineffective way of learning OB/GYN anatomy as students had poor test scores and confidence in remembering the anatomical structures.
- This study evaluates student perspectives and student confidence in their learning of anatomy through a change in curriculum of the anatomy portion of the OB/GYN core clerkship at Wright State University Boonshoft School of Medicine.

Methods

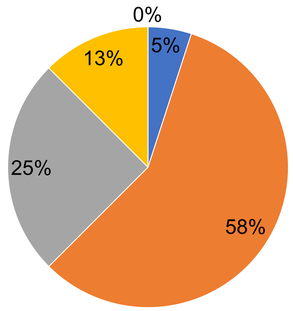
- All data was collected from third year medical students at Wright State University Boonshoft School of Medicine, who were going through their OB/GYN core clerkship.
- The setting was on the virtual platform Cisco Webex Meetings.
- Students were given a brief lecture on improved visualization and attention to detail.
- Students were then split into groups of two and were randomly assigned one of eight areas of OB/GYN anatomy:
    1. Layers of the abdominal wall (anterior view) and pelvic bones (inferior view),
    2. Neurovasculature from the aorta to the pelvic organs (anterior view with organs removed),
    3. External genitalia (inferior view),
    4. Pelvic diaphragm with neurovasculature to pelvic muscles (inferior view),
    5. Ligaments and nerve supply to uterus, cervix, vagina, and ovaries (anterior view),
    6. Pelvic organs including the bladder, rectum, and spine (sagittal view),
    7. Pelvic organs (anterior view),
    8. menstrual cycle diagram including follicular and luteal phases, ovulation, and hormones involved.
- Students were given 20 minutes to draw their assigned OB/GYN anatomy on paper with markers and colored pencils.
- At the end of the 20-minute exercise, students took turns explaining their drawing to the rest of the groups.
- At the end of class, a survey instrument was distributed via SurveyMonkey to all participating subjects.
- Each question in the survey instrument was formatted in a five-point Likert scale: 5=Strongly Agree, 4=Agree, 3=Neutral, 2=Disagree, 1=Strongly Disagree.

Results

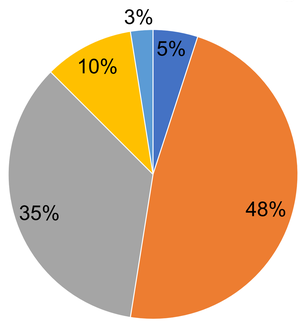
This version of the anatomy module helped me actively apply my knowledge.

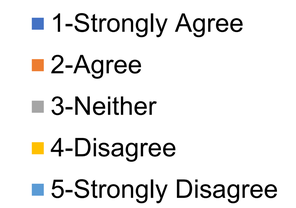


I feel confident that I will conceptually remember female anatomy after this module.

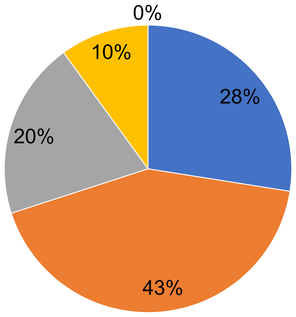


I could identify many of these anatomical structures in surgery.

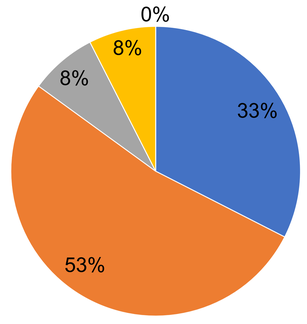




I was provided with the adequate materials to learn the anatomy expected.

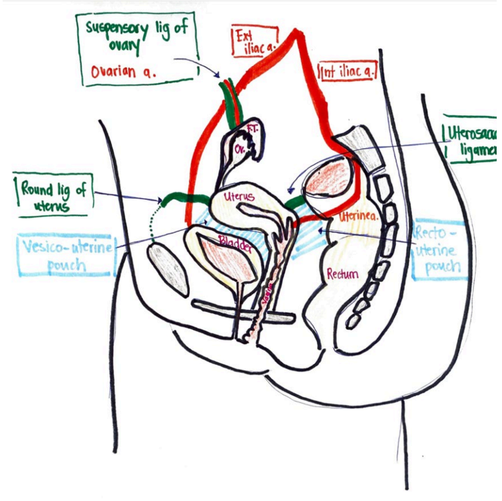


Overall, this module was well-organized and cohesive.

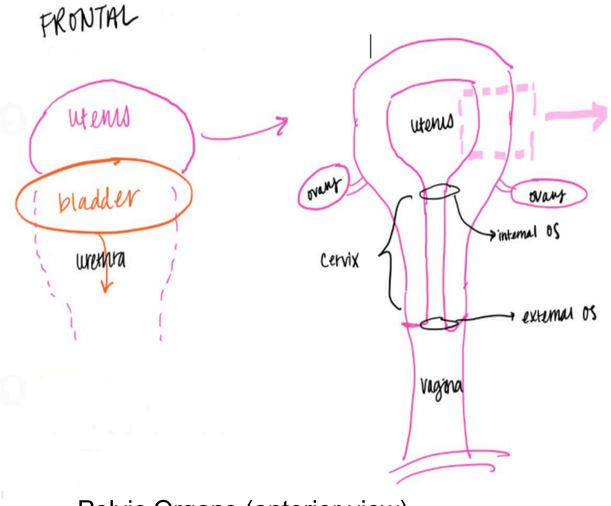


Conclusions

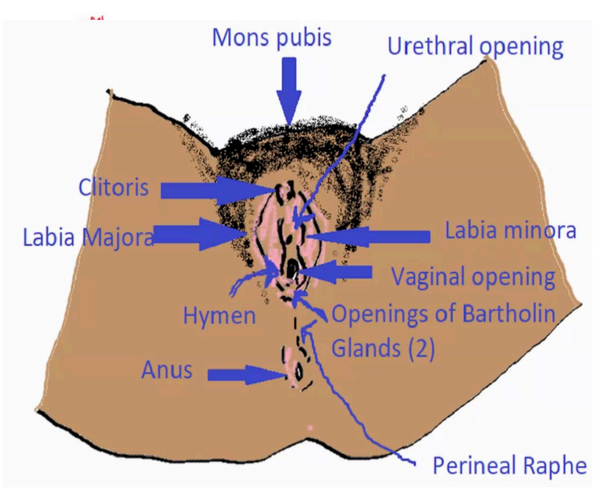
- Most students answered “Agree” to the questions provided on the survey instrument, indicating positive student perceptions and confidence in their learning of anatomy through this module.
- The only question where students answered “strongly disagree” was on assessing their confidence in identifying structures in surgery.
- Further studies could aim to test retention of drawn anatomical structures to analyze effectiveness of the module.



Pelvic Organs (sagittal view)



Pelvic Organs (anterior view)



External Genitalia (inferior view)

References

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