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ANATOMY PRACTICE DURING COVID-19 PANDEMIC

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ABSTRACT

Background: Anatomy learning required practice to understand and comprehend. An anatomical practice used aids such as cadavers. Cadaver was a corpse preserved for anatomy learning. Practice using cadavers was a way of studying the human body with very real details and experiences and must be done offline. The Coronavirus Disease 2019 (COVID-19) pandemic had limited lives, learning, and practice due to the risk of transmission. The interest in understanding some material offline must be facilitated with a supportive environment by medical institutions. **Objective:** This study will provide recommendation for implementing safe anatomy practice during the COVID-19 pandemic. **Methods:** This article used literature reviews of anatomical practice and health protocols from books, journals, and guides from home and abroad. **Results:** offline anatomy practice using cadaver should be implemented to help students understand the human body more specifically and in more detail. **Conclusion:** Health protocol should and can be implemented in offline anatomy practice during the COVID-19 pandemic. Anatomy practice can be performed during a pandemic using strict health protocols.
Keywords: *Anatomy, practice, COVID-19, health protocol*

INTRODUCTION

In December 2019 several patients in a Wuhan, China hospital showed acute respiratory syndrome and respiratory failure. A similar disease was later found in Asian countries, Europe, and spread throughout the world. The cause was identified as Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) with a disease called Coronavirus Disease 2019 (COVID-19). The diagnosis of COVID-19 is carried out by Polymerase Chain Reaction (PCR) examination to detect the presence of the genetic component of SARS-CoV-2 in the body[1,2].

By February 2022 there were 386,548,962 confirmed cases of COVID-19; 5,705,754 deaths worldwide; with a mortality rate of 1.5% [3]. Confirmed cases of COVID-19 in Indonesia were 4,516,480; patients died as many as 144,554 people, with a mortality rate of 3.2%[4].

Transmission of the virus is through direct contact and droplets of people infected with COVID-19 that stuck to the surface of objects and in the air. Distancing, wearing masks, and maintaining hand hygiene are things that must always be done together to prevent transmission[1,2,5].

The world of medical education adapted to this pandemic by providing the best service using online methods. Lectures, practices, and clinical skills were taught through video or video applications[6]. The safest education during a pandemic is online education[6,7]. In certain case where it is not possible to do online education, offline education can be done by fulfilling good health protocols[7].

Anatomy includes structures that can be seen macroscopically and microscopically. The word anatomy used by itself, generally towards gross anatomy (macroscopic) is anatomy that can be seen directly without using a microscope. Anatomy learning usually uses cadavers to determine the structures of the human body in preserved remains[8].

In anatomy practice activities, students will identify certain organs that have been obtained from lectures and discussions, directly, either through the help of atlases, posters, charts, manikin, cadavers, or cadaver organs[9]. Basic medical science practice including anatomy practice using cadavers cannot be replaced by online videos. Practicum using cadavers is very rich in experience, opportunity, and detail in anatomy learning[10].

Conducting anatomy practice using cadavers during the COVID-19 pandemic provides its own challenges for lecturers, students, and the world of medicine. The purpose of this literature review is to provide recommendations for good offline anatomy practice mechanisms so that the practice objectives are achieved in a supportive environment.

METHOD/ CASE PRESENTATION.

This article used literature reviews anatomical practice and COVID-19 health protocols from books, journals, and guides from home and abroad.

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RESULTS

Anatomy Practice Protocol during the COVID-19 Pandemic :

General Protocol

1. Everyone who comes to campus must be negative for a PCR swab test
2. Everyone must keep their distance
3. Everyone is required to wear a mask
4. Everyone is obliged to maintain hand hygiene
5. Everyone is obliged to apply good coughing and sneezing etiquette

Practice Room

1. The entire inner and outer room is sprayed using disinfectants before use
2. The room is again sprayed using disinfectants after use
3. 30 minutes after spraying disinfectant the room can be re-entered for the next group
4. The more groups in one day, the more frequent spraying will be carried out
5. Outdoor
   a. There is a standing thermometer to check the temperature
   b. There is a standing hand sanitizer to clean hands
   c. There are posters and standing banners of the COVID-19 health protocol
6. Inner room
   a. Arranged for a maximum of 15 people in one room
   b. There are water taps, soap, tissues, and trash cans for hand hygiene

Student

1. Students should attend 15 minutes before the time of the practice
2. Students wear practice suits and identification
3. Students bring their ~~own~~ books, stationery, practice guidebooks, and anatomy atlases
4. Other luggage is placed in the storage cabinet
5. Students while in the campus environment are required to maintain a distance of 2 meters from people nearby except during practice
6. Students while on campus are required to wear masks properly except when eating or drinking provisions brought by themselves
7. Students while in the campus environment are required to apply hand hygiene and ethics of sneezing and coughing properly
8. Students after completing the practice should go home immediately and are prohibited from gathering on campus or outside campus.

DISCUSSION

Anatomy Practice

Medical learning during the pandemic changed from offline to online for the safety of educators and students. Medical education institutions are expected to have new teaching innovations, including in practices and clinical skills[6]. Electronic anatomy atlases, videos, computer programs, and radiology images are used as learning aids in anatomy practice[11].

Anatomy practice using cadavers and cadaver organs is a special lesson for medical students. The absence of a practice using a cadaver makes it difficult for students to understand and complete the desired assignment or learning objectives[12]. Students in Iraq state that they still need a cadaver as the main practice tool in addition to practice material that can be obtained online[13].

Research in China shows that students lose their experience practice using highly real cadavers and that even the use of advanced three-dimensional technology cannot replace offline anatomical practice using cadavers[14].

COVID-19 Health Protocols

COVID-19 health protocols are used in general throughout the world. Health protocols serve as a way to prevent transmission. Transmission prevention can be done via[1,5]:

1. Maintain physical distance, at least 2 meters
2. Wearing a mask, surgical mask, or three-layer cloth mask
3. Maintain hand hygiene, preferably using flowing water and soap

These three things should always be done simultaneously, every time.

Social distancing, wearing masks, and maintaining hand hygiene are seemingly easy things, but they

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must be done correctly, require supervision, and become the main behavior of the community to prevent transmission and fight the pandemic[15]. Good public perception of COVID-19 and transmission prevention have an important role to play in the successful handling of the pandemic[16].

Educational adaptations during the pandemic that are carried out according to health protocols in schools or universities include[6,17,18]:

1. Adjustment of the time of giving material both duration and frequency,
2. Regulation of air circulation, distance, and indoor capacity
3. Learning system, online, hybrid, and offline
4. Disinfection of the campus environment
5. Statement of student willingness to follow certain types of learning systems
6. COVID-19 Testing

The institutions should provide temperature measuring devices; clean flowing water, soap, tissues, and trash cans that are easily accessible to everyone who comes. All people who come to the institution must wear a mask, a surgical mask, or a three-layer cloth mask is recommended. Distancing must still be carried out with a two Meters distance between people[17,18].

The most difficult thing is that all those who come to campus must be free of COVID-19 with proof of negative PCR swab test results. Lecturers, education staff, students or families who will come to the place of education must be free from COVID-19[7].

The diagnosis of COVID-19 can be established by a PCR swab test. The use of PCR to detect the genetic material of SARS-CoV-2 in the body is a very sensitive examination and is recommended for the diagnosis of COVID-19 among other tests[19,20]. Faster and cheaper examinations such as antigen swab tests are not recommended for diagnosis because in addition to screening and must be reconfirmed with PCR examination, and the performance of antigen examinations is very low[20,21].

Examination using antigens can give false positive results where the positive result of the antigen after being confirmed using PCR, gets a negative result. The false positive rate of antigen examination in a report is quite high at 58%[22], while in other studies it is stated that the sensitivity of antigen examination is one-hundredth one-thousandth of a time lower than PCR examination[23].

The author recommends a PCR test before entering campus to ascertain a person's COVID-19 status. This can help improve detection, therapy, and tracing for the region. Activities with people who do not take a PCR test are at risk of transmission to COVID-19 sufferers without symptoms or mild symptoms.

CONCLUSION

Anatomy practice using cadavers offline can be done during a pandemic using strict health protocols. The recommended examination before entering the campus is a PCR swab test.

ETHICAL APPROVAL

There is no ethical approval for this research.

CONFLICTS OF INTEREST

The author declares no conflict of interest in this research.

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