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Anatomy e-Learning Experience in Saudi Arabia During the COVID-19 Pandemic - A Narrative Review

Experiencia de Aprendizaje Electrónico de Anatomía en Arabia Saudita Durante la Pandemia de COVID-19 - Una Revisión Narrativa

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SAIKARTHIK, J. Anatomy e-Learning experience in Saudi Arabia during the COVID-19 pandemic- A narrative review. *Int. J. Morphol., 41(4):*1158-1165, 2023.

SUMMARY: Anatomy is a three-dimensional subject which needs face-to-face interaction and faced major challenges during the pandemic warranted changes in medical education. A narrative review was conducted to assess the attitude and perception of students and teaching faculty of healthcare professional courses towards Anatomy online teaching in the Kingdom of Saudi Arabia (KSA). A five stage framework narrative reviews outlined by Arksey & O'Malley (2005) was adopted for the current study. Inclusion criteria was studies conducted in Saudi Arabian healthcare professional colleges regarding online Anatomy teaching during the pandemic from March 2020 to April 2023. PRISMA-ScR search strategy was employed for identifying relevant studies which were managed using Endnote reference manager version 20. Nine articles were included in the review out of which two were mixed method studies, two were qualitative and five were quantitative studies. Students and teachers were mostly found to be satisfactory of the Anatomy e-learning experience. Major setbacks found were student and teaching faculty's negative attitude towards online practical teaching and concerns regarding academic dishonesty in students during online examination. Role of digital proficiency of teachers and students in the success of e-learning was emphasized by the review. This narrative review has mapped out the strengths and gaps in remote Anatomy teaching in Saudi Arabia during COVID-19 pandemic. There is a generally successful transition to e-learning in KSA from conventional teaching in Anatomy during the pandemic notwithstanding a few challenges that need to be addressed to improve the teaching and learning experience of Anatomy. Keywords: Anatomy, Online, E-learning, Saudi Arabia.

KEY WORDS: Anatomía; Online; E-learning;Arabia Saudita.

INTRODUCTION

Human anatomy is one of the basic pillars of medical education and it is one of the oldest branches of medicine (McLachlan & Patten, 2006). Learning anatomy through dissection in a face-to-face setting is considered as the best way to learn Anatomy in medical education. It has been the "gold standard" method of teaching Anatomy since the 17th century as it helps the learners to understand the three-dimensional relationship between various body structures and reinforces concepts that were taught in lectures (Aziz *et al*., 2002; McLachlan *et al*., 2004; McLachlan & Patten, 2006; Ghosh, 2017). Though there are many alternative teaching methods in Anatomy, students have always favored face-to-face teaching method as the convenient method to learn Anatomy regardless of the curriculum deployed (Rizzolo, 2002; Azer & Eizenberg, 2007; Rajeh *et al*., 2017). There have been tremendous changes in Anatomy teaching in recent years. Notably the amount of time spend in a curriculum for Anatomy has drastically decreased over the years (Bergman *et al*., 2011).

COVID-19 pandemic during the early part of 2020 affected all levels of education, with medical education taking the major brunt. Due to the airborne nature of the spread of the SARS-CoV-2 virus and its higher R0, (World Health Organization, 2020) all educational institutions were forced to do away with face-to-face educational process. This resulted in abrupt cessation of face-to-face classes and shifting towards other alternatives, mainly through internet-based teaching. Though the use of technology such as podcast, videos of dissection and demonstration, 3D interactive software's, Virtual reality (VR) simulations in Anatomy education has been on the rise, they have all been

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used to complement mainstream teaching and not as the one way of teaching. Globally, however, with COVID-19 pandemic, both Anatomy teachers and students faced huge challenges due to this paradigm shift to internet-based learning medium (online), especially during the initial period (Pather *et al*., 2020; Srinivasan, 2020; Cheng *et al*., 2021; Singal *et al*., 2021; Alsharif *et al*., 2022).

In Saudi Arabia, all educational process moved to online from the early part of March 2020. The government of the Kingdom of Saudi Arabia enforced quick and safe precautionary measures for the safety of the students and faculty. These included setting up e-learning platforms such as blackboard for teaching as well as a range of assessment modifications owing to the demands and needs (AlAtram *et al*., 2020; Mehdar, 2020). In a recent study, the 'student question asking behavior', considered as a measure of student engagement was found to be higher in online teaching when compare to in person learning environment (Caton *et al*., 2020). Moreover, student engagement includes multiple determinants such as the type of technology use, digital competency and teaching style of instructor, and local culture (Aladsani, 2022). Saudi Arabia being a culturally rich country incorporates a fine symbiosis of culture and education. There is strict segregation of genders in educational settings in Saudi Arabia. There is separate campus for females and males and male teachers are not allowed to see the female students who cover their faces in the presence of non-relative men. With the hasty changes in educational settings during the pandemic, the cultural ramifications on changes in teaching methods become significant. With these in mind, as Anatomy teaching traditionally demands face to face interaction, it becomes pertinent to study the general attitudes and perception of students and faculty regarding online Anatomy teaching and learning in the Kingdom of Saudi Arabia. As no such comprehensive review has been conducted in Saudi Arabia, the present review was conducted to provide a detailed insight of the level of acceptance of online teaching among the students and staff across various parts of the Kingdom, the challenges faced as well as to provide future directions towards e-learning which is a part of Kingdom's vision 2030.

METHODOLOGY

The five-stage framework for narrative reviews outlined by Arksey & O'Malley (2005) was adopted for the current study. The review is conducted in the following stages viz. stage 1: identifying the research question, stage 2: identifying the relevant studies, stage 3: selection of studies, stage 4: charting the obtained data and stage 5: collating, summarizing, and reporting the results.

Stage 1: Identification the research question. The primary research questions that directed the narrative review were: 1. What are the strategies that were deployed in Anatomy teaching during the pandemic? 2. How is online Anatomy teaching perceived by the students and teaching faculty of health professional courses? 3. What are the challenges that were faced and overcome by the sudden transition to Anatomy e-learning during the pandemic?

Stage 2: Identification relevant studies. Studies conducted in Saudi Arabia healthcare professional colleges regarding online Anatomy teaching during the pandemic from March 2020 to April 2023 were the studies required for this review. PRISMA-ScR search strategy was employed for identifying relevant studies. Pubmed, Cochrane, Scopus, Web of Science, Google scholar, and ResearchGate electronic databases was searched using keywords such as "Basic medical sciences", "Anatomy", "education", "Saudi Arabia", "KSA", "Medical education", "COVID-19", "SARS-CoV-2".

For example, combination of keywords such as "Anatomy online education in Saudi Arabia" were searched in Pubmed database. The last date for data search was conducted on 14.04.2023. This search resulted with 26 articles with the following search query.

"(("anatomy and histology"[MeSH Subheading] OR ("anatomy"[All Fields] AND "histology"[All Fields]) OR "anatomy and histology"[All Fields] OR "anatomy"[All Fields] OR "anatomy"[MeSH Terms] OR "anatomies"[All Fields]) AND ("educability"[All Fields] OR "educable"[All Fields] OR "educates"[All Fields] OR "education"[MeSH Subheading] OR "education"[All Fields] OR "educational status"[MeSH Terms] OR ("educational"[All Fields] AND "status"[All Fields]) OR "educational status"[All Fields] OR "education"[MeSH Terms] OR "education s"[All Fields] OR "educational"[All Fields] OR "educative"[All Fields] OR "educator"[All Fields] OR "educator s"[All Fields] OR "educators"[All Fields] OR "teaching"[MeSH Terms] OR "teaching"[All Fields] OR "educate"[All Fields] OR "educated"[All Fields] OR "educating"[All Fields] OR "educations"[All Fields]) AND ("saudi arabia"[MeSH Terms] OR ("saudi"[All Fields] AND "arabia"[All Fields]) OR "saudi arabia"[All Fields])) AND (2020:2023[pdat])"

However, with scrutiny of individual articles, only 15 articles actually matched with the criteria of the present narrative review. A comprehensive search of all the above-mentioned databases resulted in a total of 18 articles matching the search criteria which were managed by Endnote reference manager version 20 (Fig. 1).

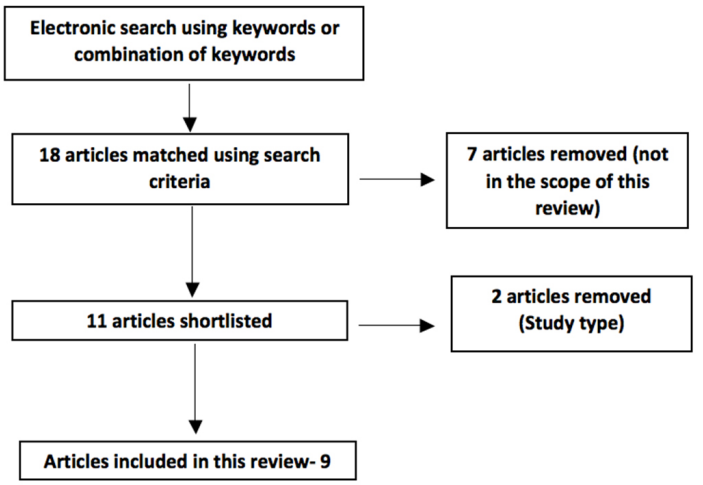

Fig. 1. Search method for this narrative review.

Stage 3: Selection of studies to be included in the review. Only articles published in peer reviewed journals and in case of multinational studies, those which included data from Saudi Arabia were included for this study. The title and the abstracts were read thoroughly after which, those articles which did not confine to the needs of this review were excluded. Preprints, and studies conducted elsewhere other than in KSA were also excluded.

Stage 4: Charting the data. After comprehensive reading of the articles, the data required for the review were entered in MS Word. The extracted data included study design, study population, study duration, study location, sample size, comparison groups, study results and suggestions by the authors. The data were charted meticulously and updated regularly.

Stage 5: Collating, summarizing, and reporting the results. A descriptive summary of analysis of each of the selected article were recorded and the relevant data were tabulated. A narrative approach was employed for reporting the results of the study in addition to using tables.

RESULTS

A total of 18 articles were identified based on the search criteria across databases. Among these 11 articles were comprehensively read as they were in line with the scope of this review. Two among them were perspectives (Memon *et al*., 2021; Soliman *et al*., 2021) and hence was removed. The total studies included for this review is nine. The common study design employed was cross sectional quantitative study (n=5). Mixed method study design and qualitative study design were followed by two studies each (Table I).

Most of the studies were conducted in the Riyadh province, Makkah province and Najran province with one study not mentioning the specific province of study in KSA. There is lack of studies in other provinces of KSA. Six studies were conducted in undergraduate students from health professional courses, two studies were conducted in both students and teaching faculty and a single study was conducted in teaching faculty alone. The studies included various disciplines viz. college of medicine, dentistry, applied medical sciences, nursing, pharmacy, and medical lab sciences. The 9 studies reviewed in this study included a total sample size of 6984 including 6789 students and 195 teachers. (Table I).

Online questionnaires were used in most of the studies. Most studies assessed the attitude and perception of the students of healthcare professional courses and that of the faculty towards anatomy e-learning in terms of online teaching including theory and practical sessions and online assessment.

Results from Mixed method studies: Alsharif *et al*. (2022) conducted a binational mixed method study among the student and faculty community in UAE and Saudi Arabia across 14 medical schools. This study analyzed both teaching and assessment aspects in anatomy during COVID-19 pandemic. Though the students and faculty had positive opinion about online teaching of anatomy in general, they also revealed that online anatomical education led to loss of interaction and engagement as well as inability to comprehend 3D anatomical relationships. With regards to the assessment, the faculty faced challenges in with technicalities involved in online teaching and cheating by the students. The study suggested that faculty and staff development, selection of the appropriate learning management system, adopting anti-cheating measures during online examinations and curriculum redesign as per the needs of the online instruction are some of the prime areas to focus on.

Jumaa *et al*. (2022), conducted a study on 399 undergraduate medical students. The study compared the attitudes and perspective of students about conventional method of face-to-face teaching with online teaching. This study concluded that students preferred conventional teaching methods in anatomy when compared to online teaching across lectures, seminars, and practical sessions. The study also involved focus groups with 6 major themes deduced from the quantitative study. Computer skills and technical infrastructure, well defined administrative procedures, learning resources suiting online teaching and staff communication were among the top emerging themes.

Table I. List of studies shortlisted.

Sno	Study type	Year	Nature of Sample	Sample size	University/ Region	Reference
1	Mixed method study	2022	Undergraduate Students and faculty	N- 418 students from KSA N- 13 faculty across both countries	Not mentioned	(Alsharif *et al.,* 2022)
2	Cross sectional quantitative study	2020	Undergraduate Students	N- 70	Najran university/ Najran province	(Mehdar, 2020)
3	Perspective	2021	Preprofessional training program	-	King Saud bin Abdulaziz University for HealthSciences/ Riyadh Province	(Memon *et al.*, 2021)
4	Cross sectional quantitative study	2022	Undergraduate medical, Nursing; Doctor of pharmacy; Medical lab sciences	Medical- 306. Nursing- 53. Doctor of pharmacy—25; Medical lab sciences- 11	Fakeeh college for medical sciences/ Makkah province	(Al_Neklawy & Ismail, 2022)
5	Cross sectional quantitative study	2021	Undergraduate medical, dental and applied medical science students	Medical- 2605; Dental- 420 (only male students); Applied medical - 1830	Taif University; Umm Al Qura University; King Abdulaziz University; Jeddah University; Rabigh University/ All universities in Makkah province	(Alblihed *et al.,* 2021)
6	Cross sectional quantitative study	2021	Undergraduate medical students and faculty members	Students- 362 Faculty- 156	Imam Mohammed Bin Saud Islamic University/ Riyadh province	(Al-Mazidi, 2021)
7	Cross sectional quantitative study	2021	Undergraduate medical students and faculty members	Students- 230 Faculty- 20	Al- Imam University/ Riyadh	(Hanafy *et al.,* 2021)
8	Qualitative exploratory study (no anatomy)	2020	Undergraduate medical students	N- 60	Unaizah College of Medicine and Medical Sciences/ Qassim province	(Khalil *et al*., 2020)
9	Qualitative study- Narrative approach	2021	Faculty	N- 6	College name not mentioned. Eastern province; Western province; Southern and Central province.	(Aladsani, 2022)
10	Mixed method- Comparative study	2022	Undergraduate medical Students	N- 399	AL Imam University School of Medicine/ Riyadh province	(Jumaa *et al*., 2022)
11	Perspective	2021	College of medicine	-	King Saud University/ Riyadh province	(Soliman *et al.*, 2021)

Results from qualitative studies: 6 university female instructors narrated their stories about their experience of online teaching during the COVID-19 pandemic from across different places in Saudi Arabia. In general, all instructors felt an initial phase of struggle in getting used to blackboard as they have not used it before. One of the instructors who teaches anatomy pointed out that teaching anatomy requires good body language and sometimes the instructor needs to demonstrate certain body parts on herself and hence did not prefer teaching of anatomy online. Certain instructors also felt online assessment is more prone to cheating and had red flags on it. The study concluded that the students were better prepared for shifting to online education as they already have prior exposure to blackboard during their preparatory year and the faculty were in disadvantageous position. The study also pointed out the need of disaster management plan in the curriculum to deal with such unforeseen situations in the future (Aladsani, 2022).

Another qualitative study was conducted in Unaizah college of medicine (Khalil *et al*., 2020), which explored medical students' perspective regarding sudden transition to online teaching from face-to-face teaching. 60 undergraduate medical students across all years participated in a focus group discussion. From a total of 8 synchronous focused group discussions, 4 main themes with or without subthemes emerged. Educational impact, time management, challenges encountered and preferences for future were the themes that emerged. Content understanding and content perception challenges, methodological, technical, and behavioral challenges were the subthemes that emerged. Most preclinical students favored online teaching especially for lectures. In general, students felt unsatisfactory withrespect to practical concepts and working.

Results from quantitative studies: Mehdar (2020) studied the attitude of 70 medical and paramedical students regarding digital learning of Anatomy during the COVID-19 pandemic. Most of the participants exhibited positive attitude towards different aspects of Anatomy online teaching viz. students' proficiency in using e-learning tools, students' efficiency in interaction with the digital platform, colleagues and teachers, satisfaction with the e-learning methods, and its efficiency and their comprehension of the course material. Some of the disadvantages faced by the students in the e-learning set-up were also highlighted by the study. One fifth of the study participants expressed discomfort in studying Anatomy online. 12 % were not in agreement to study Anatomy online in the future. 20 % felt the online assessment of Anatomy course to be inappropriate and unfair. One third of the participants feel that digital demonstration does not substitute practical laboratory demonstration. 29 % of the participants found it difficult to understanding online Anatomy teaching. Though the study was quite enlightening, its serious limitation was its minimal sample size.

Al-Neklawy & Ismail (2022) studied the efficiency of team based learning (TBL) in online Anatomy teaching in medical and paramedical undergraduate students. The study was conducted in the students of Fakeeh college for medical sciences in the Makkah province including 157 from 2nd year MBBS , 149 from 3rd year MBBS, 54 from nursing program, 25 from 2nd year DPharm, and 11 from 2nd year medical laboratory sciences program. The study assessed the ability to recall, level of engagement and satisfaction of the students towards online TBL sessions. Though there was no comparitive analysis done with traditional learning, the study participants irrespective of their enrolled program expressed satisfaction and deemed the TBL sessions to be successful.

Ablihed *et al*. (2021) studied the perception and experience of 4850 undergraduate students of medical (n=2606), dental (n=420) and applied medical courses (n=1830) regarding online teaching during the COVID-19 pandemic. The study had found higher levels of satisfaction disclosed by the study population with 13.4 % of the student population with low satisfaction towards online education. Maximum satisfaction towards e-learning was expressed by allied medical science students followed by dental students and the medical students brought up the rear end with the least level of satisfaction. Female students were found to be more satisfied with the online education compared to their male counterparts. Students from all the three studied courses irrespective of their gender favored blended learning when compared to traditional face to face learning after the end of the pandemic.

Al-Mazidi (2021) conducted a study on 362 medical students and 156 faculty members from medical colleges in Saudi Arabia. The student sample include 194 preclinical year students and 168 clinical year students. Zoom was the most used e-learning platform by the medical students and faculty. The overall online learning was found to be a positive experience by 71.7 % of students and 65 % of the instructors. 86.1 % of medical students and 94.6 % of the faculty mentioned that they were able to interact with the instructor and the student respectively during the online sessions. The understanding of the study material during online sessions were found to be mostly acceptable when compared to face-to-face lectures for PBL and theoretical lectures by students and faculty members. However, both students and faculty members found the understanding of study material to be poor for practical sessions when compared to face-to-face teaching. When it comes to online evaluation methods, 64 % of the students and 59 % of the instructors expressed that the grades did not represent actual student performance. 61.7 % of the students found online evaluation experience as a positive one. However, the study also found that 72.5 % of students and 82.1 % of the teaching faculty preferred that there was no e-learning during the pandemic.

A comparative analytical study was conducted by Hanafy *et al*. (2021) in 230 undergraduate medical students and 20 teaching faculty to assess the attitude towards online and conventional teaching and examination. Students mostly favored conventional teaching and examination when compared to e-learning. Male students preferred conventional teaching and online examination when compared to female students. The staff on the other hand preferred conventional teaching and examination than online teaching and examination. Both students and

teaching faculty favored online examination that was followed by immediate feedback. The study does acknowledge higher levels of cheating and fraud during online examinations.

DISCUSSION

The purpose of this narrative review is to understand the transition and trail of Anatomy teaching in Saudi Arabia during the pandemic which would help the educationists to adapt and devise curricula that would well suit the ever-changing future of medical education. In a short duration of time without notice, the students and the academicians were compelled to adopt a new way of teaching Anatomy for which had only a limited prior exposure. However, the study results show that educationists raised to the occasion and implemented renovative solutions and tackled the challenges posed by the lockdown measures with finesse.

This narrative review has summarized the strengths and relative gaps in Anatomy e-learning in Saudi Arabia during the COVID-19 pandemic. The major strength in Anatomy e-learning in Saudi Arabia was the attitude and perception of the health professional students towards online Anatomy teaching which was considerably found to be positive. The health professional students were mostly found to be satisfactory of the e-learning experience.

This narrative review found that there are contrasting results in terms of online learning experience by the students and the faculty in health professional courses in Saudi Arabia with a majority leaning towards a positive e-learning experience. Studies conducted in other countries show a contrasting pattern with results favoring e-learning(Cuschieri & Calleja Agius, 2020; Mukhtar *et al*., 2020; Puljak *et al*., 2020) and results expressing disdain towards it (Abbasi *et al*., 2020). A study conducted in a multinational setting had found that the attitude and satisfaction towards e-learning was higher in developed countries when compared to developing countries (Abbasi *et al*., 2020). This could be attributed to limited resources and inadequate prior experience and proficiency in using online teaching tools by the students and teaching faculty. However, this was not the case in the current study as the attitude of the students towards Anatomy online teaching was profusely leaning towards a positive e-learning experience. Saudi Arabia is a country with a tenacious digital infrastructure. This in addition to the robust measures by the educational institutes of Saudi Arabia and innovative and dedicated work by the academic faculty in Saudi Arabian health professional institutes have steered the trajectory of the Anatomy e-learning towards a progressive side (Hassan, 2022).

One of the major gaps found by the review was the repetitive pattern of students and faculty expressing a negative attitude towards online practical sessions. A similar bearing was found in studies conducted globally (Abbasi *et al*., 2020; Cuschieri & Calleja Agius, 2020; Pather *et al*., 2020; Srinivasan, 2020). Compared to other medical subjects, Anatomy poses a unique challenge owing to its three-dimensional nature. Hands-on training and visualization are crucial for understanding anatomical concepts especially the relationship between structures. With remote learning, despite the use of various digital and virtual simulations, it is understandable that the online Anatomy practical teaching would not meet the bar of standards that the subject demands.

Regarding online evaluation, though the trend was an overall satisfaction and positive experience, there were some noteworthy limitations including higher levels of cheating by the students and lower representation of actual performance by the grades obtained (Al-Mazidi, 2021; Safaa M. Hanafy *et al*., 2021; Memon *et al*., 2021). Similar results were found by studies conducted during and before the pandemic (Kumar *et al*., 2013; Hanafy *et al*., 2021). Academic dishonesty in students have always been a challenge especially in cases where there is limited supervision like in case on online examinations (Kumar *et al*., 2013). Counseling to students and better anti-cheating measures during online examinations are crucial to reap the benefits of e-learning without these unwanted glitches.

Another recurring theme found in this review was the role of digital proficiency by the instructor and student population in the success of e-learning (Khalil *et al*., 2020; Mehdar, 2020; Hanafy *et al*., 2021). A better digital proficiency warrants a better e-learning experience. Workshops and seminars for students and faculty development programs for teaching faculty in various online teaching and assessment tools must be included in the curricula to produce digitally well-equipped faculty and students.

Saudi culture guided by the Islamic law has a profound impact on the e-learning experience during the pandemic. Female students and teachers predominantly cover their faces with niqab as encouraged by the Saudi culture. This could pose a hindrance as the students' engagement and attention are assessed by the teachers from their facial expressions and body language. Additionally, findings from the study by Aladsani (2022) showed that female instructors were hesitant to show their faces in

online classes anxious about being trolled in social media by their students. The influence of Saudi culture on e-learning is a crucial factor to be considered while ascertaining the success of online teaching. Future changes in the curricula must include this factor for optimal results and benefits.

Thus, online Anatomy teaching in Saudi Arabia during the pandemic has got strengths and limitations and is on a constructive trail. The lessons learned from pandemic must be incorporated for the betterment of health professional education in the post pandemic world too. Blended learning including face-to-face and online teaching could be a pertinent replacement for traditional teaching in the post COVID-19 era especially given the number of studies that endorse this method both in the kingdom and worldwide (Abbasi *et al*., 2020; Al-Mazidi, 2021; Alblihed *et al*., 2021; Hanafy *et al*., 2021).

Limitations of the study. Though the review adhered to standard approach for narrative review following PRISMA-ScR guidelines and five-stage framework approach, it is not without limitations. The review is limited to Anatomy teaching during the pandemic and cannot be generalized across other subjects of health professional courses. The results of the study were gathered from a limited number of studies that matched the search strategy and hence may not be representative of the results pertaining to e-learning en masse. The review focuses on Anatomy e-learning in Saudi Arabia and extrapolation of the results to other countries must be done with discretion.

Conclusion and future directions. This narrative review has mapped out the strengths and gaps in remote Anatomy teaching in Saudi Arabia during the COVID-19 pandemic. The review shows a predominantly successful transition to e-learning from face-to-face teaching in Anatomy during the pandemic albeit a few challenges that need to be addressed to improve the teaching and learning experience of Anatomy. Firstly, students and teaching faculty generally favor online theory teaching while raising concerns and challenges regarding online practical teaching and online examination. Secondly, Visual orientation being crucial for Anatomy teaching and learning, anatomy teaching faculty must be equipped in using three dimensional and augmented reality software to improve Anatomy learning experience. Thirdly, Healthcare curricula should incorporate blended learning in the post COVID-19 era to accommodate the demands and challenges of the stakeholders mainly the students and teaching faculty. Finally, digitalization of medical education is crucial for achieving Saudi Arabia's Vision 2030. We recommend a separate e-learning unit under the curriculum committee to oversee and implement strategies to equip both staff and students for digital fluency. Though face to face teaching is still widely preferred in medical education, a minor portion of the curriculum should be based on e-learning.

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RESUMEN: La anatomía es un tema tridimensional que necesita una interacción cara a cara y enfrentó grandes desafíos durante la pandemia, que justificó cambios en la educación médica. Se realizó una revisión narrativa para evaluar la actitud y la percepción de los estudiantes y profesores de cursos para profesionales de la salud, hacia la enseñanza en línea de Anatomía en el Reino de Arabia Saudita. Para el estudio actual, se adoptó una revisión narrativa del marco de cinco etapas delineada por Arksey & O'Malley (2005). Los criterios de inclusión fueron estudios realizados en colegios profesionales del área de la salud de Arabia Saudita, con respecto a la enseñanza de anatomía en línea durante la pandemia desde marzo de 2020 hasta abril de 2023. Se empleó la estrategia de búsqueda PRISMA-ScR para identificar estudios relevantes que se administraron utilizando el administrador de referencia Endnote versión 20. Se incluyeron nueve artículos en la revisión, de los cuales dos eran estudios de métodos mixtos, dos eran estudios cualitativos y cinco eran estudios cuantitativos. Se encontró que los estudiantes y profesores, en su mayoría estaban satisfechos con la experiencia de aprendizaje electrónico de Anatomía. Los principales contratiempos encontrados fueron la actitud negativa de los estudiantes y profesores hacia la enseñanza práctica en línea y las preocupaciones sobre la deshonestidad académica de los estudiantes durante los exámenes en línea. La revisión enfatizó el papel de la competencia digital de profesores y estudiantes en el éxito del aprendizaje electrónico. Esta revisión narrativa ha mapeado las fortalezas y brechas en la enseñanza remota de anatomía en Arabia Saudita, durante la pandemia de COVID-19. En general, hay una transición exitosa al aprendizaje electrónico en Arabia Saudita desde la enseñanza convencional de Anatomía durante la pandemia, a pesar de algunos desafíos que deben abordarse para mejorar la experiencia de enseñanza y aprendizaje de Anatomía.

PALABRAS CLAVE: Anatomía; En línea; Aprendizaje electrónico; Arabia Saudita.

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