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# The Impact of COVID-19-Pandemic on Psychological Health and Educational Status of the Dental Students from the Instructor and Student's Viewpoints

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## ABSTRACT

The Noval Coronavirus left a considerable negative impact on education worldwide in 2019. Therefore, different measures were implemented by governments to eliminate or minimize the risk of disease spreading. These measures included travel restrictions, mandatory quarantines for travelers, social distancing, bans on public gatherings, schools and universities closures, business closures, self-isolation, asking people to work remotely from home, curfews, and lockdown. Many universities and colleges worldwide suspended classroom teaching due to the outbreak of coronavirus pandemic, and switched to online teaching. Iraq was one of those countries that followed the lockdown rules and resorted to online education. The present cross-sectional study aimed to investigate the dentistry teaching staff as well as psychological health and educational status of students who experienced the lockdown last year in Iraqi colleges. The study participants were divided into two groups:the first group included a total of 1250 participants from 28 different colleges of dentistry (public and private), who answered the questionnaire with a response rate of 71.76%; the second group included a total of 776 students (474 females and 302 males) with a gender ratio of 1.6:1. The results showed that COVID-19 pandemic lockdown affected the academic performance of most participants (82.2%) with varying degrees. Overall, the mean evaluation score for online education was 31.3±6.9, while that for the practical subjects was 68.6%±6.9. Although online education providedthe students with an opportunity for self-study, it faced a serious challenge when offering the students the practical subjectsinmedical science. Since majority of the courses in medical science includedpractical subjects, the studentsexperienced real difficulties receiving online education. As the result, academic staff and students found it difficult to fulfill the medical science requirements adopting online education system alone.

**Keywords;** COVID-19 pandemic, Medical student quality, Questionnaire, Iraq education.

## INTRODUCTION

In December 2019, a group of unexplained cases of infection called "Coronavirus" occurredin the Chinese city of Wuhan. By March 2020, Coronavirus which is an acute respiratory syndrome was classified as Corona disease and announced as a humanitarian disaster by the World Health Organization (Ciotti et al, 2019; Galbadage et al,2020). During the outbreak of novel coronavirus in the world, the governments of countriesimplemented various precautionary measures, including total closures of public places, prevention of gatherings,and lockdowns of schools and universities (Inoue and Todo, 2020). By early April 2020, over a third of the global population living in different countries (e.g., Iraq, Middle Eastern countries, China) was subjected to some form of movement restriction or COVID-19 lockdown (Imtyaz et al, 2020; Koh, 2020).

Medical education in Iraq was one of the best educational systems in the region, especially during the golden period in the 1980s (Shabaaa et al, 2020). The medical education in Iraq developed gradually since the establishment of the first medical school in 1927s, and it reached to the peak of its successin the region in late 1970s.However, this educational system suffered from regression and decreased in both academic curriculums and teaching techniques at undergraduate and postgraduate levels due to wars, sectarian conflicts, and financial sanctions, which had a lasting effect on medical education and training quality.Today, medical education and training in Iraq is facing multiple challenges resulting from a lack of facilities, financial support, and doctors' emigration due to violence and political unrest. The lockdowns of universities during 2019-2020 in the world have led to following newfangled avenues to complete the

educational curriculum, which was initially designed to guarantee the success of student (Alshammari et al, 2020). Figured out various ways for education that regardless of the possibility of completing the teaching during that pandemic and the possibility of delivery of complete information to academic students (Grubic, 2020). Some countries lack the required infrastructure to successfully executeonline learning or electronic learning (e-learning); however,theydeliver distant education using educational platforms and, therefore, struggle to facilitatethe learning (Ja'afar et al, 2020). One of the disadvantages of e-learning is its failureto deliver practical subjects.Moreover, successful e-learning largely depends on the self-motivation of learners to study,especially when the subject of study is medical science (Johnson, 2011; Srivastava 2019). Among other subjects of study that require practice are medicine, dentistry, pharmaceutics, nursing, radiography, veterinary medicine, medical clinical studies, etc. (Damiano et al, 2020;Ataş et al, 2020). The attendance of medical group's students in the laboratory is necessary sincethey have toput what they have learned from theoretical class into practice (Damiano et al, 2020; Ataş et al, 2020; Moro et al, 2020). In addition, developing countries such as Iraq lack the appropriate infrastructure to offer high quality and speed of the internet, which is a prerequisite for implementation of e-learning (Neamah, 2020).

All vital installations,including universities, schools, mosques, crowded markets, and malls went into the lockdowns in Iraq due to the poor infrastructure. Therefore, Iraqi government had to adopt e-learning system for universities in order to execute education (Hussein et al, 2020). Thisstudy aimed to investigate the influence of Covid-19 pandemic on learning process as well asevaluate the quality of teaching in the colleges of density and compare it with quality of that in previous years in Iraq.

## MATERIAL AND METHOD

### Study Design

A total of 27 different public and private universities in Iraq were selected (17 public and 11 private universities). A study questionnaire was distributed among university instructors workingfor different faculties of dentistry.

### Regions of the Questionnaire Survey

The selected public universities included Al-Mustansiriya , Al Nahrain Baghdad, Iraqi , Al Muthana , Babylon , Diyala, Kirkuk, Kufa, ThiQar, Tikrit, Al-Qadisiyah, Basrah, Anbar, Mosul, and Wasit. Private universities, on the other hand,were The Islamic, Ahlulbait , Al Hadbaa, Al Rafidain, Al Turath, Al Yarmouk, Baghdad College of Pharmacy, Sheikh Tusi, University of Alkafeel, Al Hussein, and Al-Esraa as showed in demographic characteristics (table 1).

### Procedures and Protocols

Two protocols were followed in the present study. As for the first protocol,the link of an online questionnaire was sent to the students and instructors in universities and faculties of dentistry. The questionnaire contained two groups of 10 closed type questions (questions about the student's comprehension of the material) about the effect of COVID-19-related procedures on educational and academic activities of studentsfrom the faculty of dentistry during the universities' closure period of 2019-2020 and 2020-2021. The first group was sent to instructors, and the second group was sent to students of universities and faculties of dentistry.

The link was sharedby WhatsApp, Facebook, and Gmail, these links sent contain google forms for answers by target personal. The participants were requested to send their answers using official university emails containinga university education extension such as xxx@iunajaf.edu.iq, xxx@alkafeel.edu.iq, xxx@uokufa.edu.iqxxx@uokirkuk.edu.iqand xxx@uoanbar.edu.iq et al,) so that the answers and correctness of the provided information could be documented.

As for the second protocol, paper formswere distributed among participants in order to dictate questionnaire forms. It is worth noting that the participants in the secondgroup were the principals of universities, deans of faculties, and heads of scientific departments.

## Data Analysis

### Regions of the Questionnaire Survey

In general, the data from first group included 1250 questionnaire forms which were published either online or in attendance while only 897 instructors at (71.76%.) of the medical group in different degrees; Associate Lecturer, Lecturer, Associate Professor, and Professor. A small amount of the obtained data (1250) was includedin the study since theinstructors were not willing to be heldaccountable in the future andthe education was heavily influenced by politics in Iraq (Johansen and Joslyn, 2008; Diwakar, 2015; Al-Shamsi 2017).

### Scoring

The impact of COVID-19 on general and psychological health as well as educational status was scored based ona 4-point Likert scale from 0 to 3 as follows: Nothing=0, Weak=1, Medium=2, and Strong=3. Therefore, a mean score of ≥1 indicated a significant impact of variable severity. The item scoring for E-learning (items 1-8) was done based on a 4-point Likert scale from 1 to 4 as follows: Strongly disagree=1, Disagree=2, Agree=3, and Strongly agree=4. Therefore, a mean score of >2 indicated a significant agreement on the process of E-learning at variable magnitudes. The scoring of the items related to the E-evaluation test (items 9) and E-learning satisfaction (item-10)

was performed adopting dichotomous scoring method (0: Negative response while 1: Positive response).

## Statistical Analysis

Statistical analysis of the data from first group was carried out using the IBM SPSS Statistics 26, and confidence interval of 95% with $P<0.05$ was considered statistically significant (Stehlik et al, 2017; Wagner et al, 2019). The collected data were analyzed and presented into SPSS, and the results were checked for the statistical reliability (Roberts and Bilderback, 1980) which was (0.941). The correlation analysis was performed to assess the relationships among the questions of result outcome from data, the second group statistical, results were expressed as numbers, percentages, medians and mean±SD. The data were analyzed using the difference between percentages tests, independent two-sample t-test,

and factor analysis. A $P$-value of ≤0.05 was considered a significant cutoff. The data were analyzed using SPSS version 24 (IBM compatible, USA).

## Results

### Sample Characteristics

The mean assessment score for the practical subjects was (68.6%±6.9), while that for online education was (31.3±6.9). The results of data analysis showed that COVID-19 pandemic lockdown affected the academic performance of most participants (82.2%) with varying degrees (Tables 1, 2 and 3).

A total number of 776 students with a female to male ratio of 1.6:1 (474 females and 302 males) were included in the second group. A varying number of students was observed regarding the educational stages (Table 4).

**Table 1:** Academic Evaluation of the Effect of Covid-19 Pandemic on Validity College of dentistry of Students

| Parameters | High effect | Median effect | Low effect | No effect |
|---|---|---|---|---|
| Effect of the pandemic on the scientific cooperation among students. | 45.7% | 34.9% | 17.1% | 2.3% |
| Effect of the pandemic on students' motivation to receive the lessons. | 45.0% | 34.9% | 17.1% | 3.1% |
| Effect of the pandemic on cares of students for learning the practical skill scientific behavior medical clinic and laboratories. | 42.6% | 31.8% | 23.3% | 2.3% |
| Effect of turning off the practical lessons during a pandemic. | 82.2% | 12.4% | 3.1% | 2.3% |

Values are the percentages of 867 university instructors

**Table 2:** Academic Evaluation of Medical Group Student Groups Comparison With Other Pasts Normal Years

| Parameters | Higher-level | Matched level | Lower level |
|---|---|---|---|
| Investigation of the real grades obtained by the students during electronic exams compared with the original student's scientific level. | 3.1% | 0.8% | 96.2% |
| The quality of student during the pandemic compared with that of the student during normal past years. | 2.3% | 6.2% | 91.5% |
| The legitimacy and quality of the first three top students during the pandemic and e-learning compared with those of past normal years. | 4.7% | 16.3% | 79.1% |
| Difference between interaction of students attending traditional lectures and that of students attending online lectures. | 59.7% | 6.2% | 34.1% |

Values are the percentages of 867 university instructors

**Table 3:** Evaluation of the Validity Range of Medical Group Students During Pandemic Years

| Parameters | Real at 100% | May be | Unreal at 100% |
|---|---|---|---|
| The realistic sequence of first three top students during the pandemic and e-learning | 3.9% | 20.2% | 76% |
| Realistic success rate of students who received e-learning during the pandemic. | 14.0% | 57.4% | 28.7% |

Values are the percentages of 867 university instructors

Table 4

## View and Analysis of the Results

### Result of the First Group

The results shown in Table1 include four parameters that were discussed in the academic evaluation of the effect of covid-19 on medical students' group. The first parameters evaluated "the effected of covid-19 on the scientific cooperation among students",and determined that the scientific collaboration between the student in the laboratories and medical clinics was significantly decreased. According to our results, moreover, 45.7% of the investigated instructors believed that covid-19 pandemic had a strong effect on cooperation of students at the college of dentistry;while 34.9% of the instructors considered the effectas a moderate one, and 2.3% of them believed that the disease had no effect on the cooperation among students. The second evaluation was conducted to assess the effect of covid-19 on the students' motivation to learn course materialspresented by the instructors. The instructors believed that pandemic had significantly negative effect on students regarding learningcourse materials presented by the them(45.0%) with median effect of 34.9%;however, 3.1% percentage of instructors argued that the disease had no effect on the course material learning of students(Table 1). The third evaluationwas carried out to assess the impact of the pandemic on the care students took for learning the practical skills as well asfor showing scientific behavior in the practical medical clinic and laboratories of the colleges. According the results,**42.6%** of the instructors believed that pandemics had a great negative effect on the care students took for learning practical skills. As shown inTable1, 31.8% percentage of the instructors believed that pandemic had a median, while **2.3%**percentage of them believed that it was not affected by pandemic. The fourth evaluation was performed to assess their awareness about the negative impact of the practical classes' cancellation in the medical clinics and laboratory due to the pandemic during last year's period. As can be seen inTable 1, 82.2% of medical group instructors suggested that the decision to cancel the practical classes in the medical clinics and laboratories had a strong negative effect on the educational careers, while 12.4%of the instructorsbelieved that the cancellation hadmodest effect on educational careersand 2.3%of them argued thatthe decision had no effect on the given careers.

As it can be seen from Table2, fourquestions were asked toseek the opinions of universityinstructors about the difference between medical students ofprevious normal academic years and those who were studying during the pandemic. According to our results,the instructors believed that the levels of students studying during the pandemic were significantly lower than the levels of students fromprevious normal academic years. Interestingly, 79.1% of the instructors argued that the legitimacy and quality of the first three top students during the pandemic and e-learning were lower than those of their counterparts attendingthe exam sessionsin previous years. However, 16.3% of instructors believed that legitimacy and quality of first three top students were matched with those of students fromprevious academic years. As shown in Table 2, moreover, the fourth part of the questionnaire contained a question asking about the difference between the interaction of students traditionallyattendingthe lectures and the interaction of those attending online lecture (e-learning). According to our results, 59.7% of instructors believed that the interaction of students attending traditionallectures was stronger than the interaction of those attending online lectures; however, 34.1% of instructors argued that the interaction of students during online lectures was stronger than that of studentsattendingtraditionallectures.

Table 3presents the validity of medical group students as future leaders of healthcare system during pandemic years . As shown in the given Table, the genuine sequence of the first three top students was unreal;in other words, 76% of instructors were of the opinion thatthe sequence of the first three top students was unreal at 100%. However, the validity of the percentage about the ability of students passing grade was acceptable and expected from the instructors at 57.4% of participant instructors.

## DISCUSSION

The situation for delivering medical education in Iraq is complicated and affected by many factors, including politics, security situation (Al-Shamsi, 2017), and low levels of university professors (Mohammed et al, 2017). Furthermore, that the predatory publishing in Scopus indexed, which that Iraq represents as a second top of 20 countries publishing the articles in predatory journals, with more than every tenth article appearing in predatory journals (Macháček and Srholec, 2021). This has led to the lack of scientific contribution to the advancement of the community and fulfillments of its academic objectives, and decreased the quality of academic education (Diwakar, 2015). Government's decision to spend less on academic education and infrastructures, lack of institutional support for faculty members of universities,and existence of major obstacles to education and its integrity (Mohammed, 2017) have all reduced the quality of education,especially the quality of higher education at universities offering medical sciences (Kron et al, 2019). During COVID-19 pandemic, Iraqi educators had to resort to online education by adopting e-learning platformsin spite of a lagged internet and the lack of modern electronic education tools (Mousa et al, 2020; Al-Abdali and Alzayadi, 2020). Today, higher education institutions face several demands imposed on them due to the successive scientific and technological developments that they don't have access to (Al-Azawei et al, 2016; Lassoued et al, 2020). The result showed that covid-19 pandemic affected the validity of medical group students completing their

higher education.The responses given to questions included inquestionnaire form were analyzed and it was found that the cancellation of practical classes decreased the educational levels of students during the pandemic period. Students – especially the dental students as future doctors responsible for performing dental surgeries and diagnosing the dental diseases – acquire confidence and required skills by taking practical classes (Mogali et al, 2018; Storarri et al, 2019; Sandhu et al, 2020). Several studies have indicated that online teaching platforms are beneficial due to their worldwide accessibility andtheir capability of providingmedical students with access to webinars which can be also recorded for later use (Sandhu and de Wolf, 2020; AL-Mudhafar et al., 2020). While the results in Table 2 and 3 that proved decreased in the level of student comparison with other pasts years, as well as the panic in the community, are palpable, and many are confused by how to proceed in the wake of COVID-19 which that is no different for medical students and faculty as shown in the recent study (Ferrel and Ryan, 2020) that studied the full impact of the changes COVID-19 on medical education. The present study aimed to highlight education levels by shedding light on the important role of the education decision-makersin improving the level and quality of the students and byadopting universityinstructors' points of view during the closure period of universities 2019-2020. According to ourstudy results, universityinstructors believed that the legitimacy and quality of the first three top students during the pandemic and e-learning were lower than those of studentsattending exams in previous academic years as well as unreal at 100% of realistic the sequence of the first top three students during the pandemic and e-learning. It was also found thatIraq educational system had failed to adopt an ideal or acceptable educational policy for running higher education during the COVID-19 pandemic, which reduced the academic level of medical students.

## Conclusion and Recommendation

E-learning has been recently integrated into the worldwide education systems due to the outbreak of covid-19 pandemic butcaused some problems regarding higher education in Iraq. Since electronic education is a novel approach to teaching course materials in Iraq,both instructors and students are faced with numerous problems, such as internet-related technical problems occurring when teaching,internetservice quality, and country's poor internet infrastructures. In sum, it is generally recommended thatthere should not be lockdowns and the education should be continuedproviding that preventive measures are taken and personal protective equipment are supplied. Way props online education with attendance in the laboratory and clinic medical.

A total of 1250 participants included in this study were from 27 different universities (public and private), who answered a questionnaire with response rate of 71.76%. The data analysis showed that COVID-19 pandemic lockdown affected the academic performance of most participants (82.2%) with varying degrees. The mean evaluation score for online education was 31.3%±6.9, while that for the practical classes was 68.6%±6.9. Although online education provided an opportunity for self-study, it posed serious problems forstudents of medical sciences in terms of learning practical subjects. Since most of the subjects in medical sciences requiredpractice, it was difficult to learn them by taking online classes. Therefore, majority of students participated in this study found it difficult to fulfill the medical sciences'requirements by adopting online education system alone. Online education may have been improved by making it more interactive, displaying medical procedures in real situations, giving concise information, and providing 3D virtual tools to simulate the actual condition.

Finally, the result showed the opinion of instructors about the investigation of the real grades obtained by the student during electronic exams comparison with the original student's scientific level which proved that begin satisfied to instructor that reliability of grades obtained by the student during electronic exams which almost unanimous of instructors at (96.2%).

## References

Al-Abdali, A. I. E., & Alzayadi, A. D. N. (2020). The Electronic Approaches: The Era of Emergence E-Learning in the Educational System in Iraq. *International Journal of English Literature and Social Sciences*, 5(5).

Al-Azawei, A., Parslow, P., & Lundqvist, K. (2016). Barriers and opportunities of e-learning implementation in Iraq: A case of public universities. *The International Review of Research in Open and Distributed Learning*, 17(5).

Al-Hasan, B. A., Hameed, M. A., Bustani, G. S., & Al-Dhalimy, A. M. B. (2022). The First Time, Studying the Behavior of Foreign Cats and Comparing Them with Local Cats in Iraq. *Revista Electronica de Veterinaria*, 69-76.

Alshammari, E. (2020). Implementing eOSCE during COVID-19 lockdown. *Journal of Advanced Pharmacy Education & Research| Jan-Mar*, 10(1), 175.

Al-Shamsi, M. (2017). Medical education in Iraq: issues and challenges. *International journal of medical education*, 8, 88.

Ataş, O., & Yildirim, T. T. (2020). Evaluation of knowledge, attitudes, and clinical education of dental students about COVID-19 pandemic. *PeerJ*, 8, e9575.

Bustani, G. S., & Baiee, F. H. (2021). Semen extenders: An evaluative overview of preservative mechanisms of semen and semen extenders. *Veterinary World*, 14(5), 1220.

Ciotti, M., Angeletti, S., Minieri, M., Giovannetti, M., Benvenuto, D., Pascarella, S., ... & Ciccozzi, M. (2019). COVID-19 outbreak: an overview. *Chemotherapy*, 64(5-6), 215-223.

Damiano, R. F., de Oliveira, I. N., Ezequiel, O. D. S., Lucchetti, A. L., & Lucchetti, G. (2020). The root of the problem: identifying major sources of stress in Brazilian medical students and developing

the Medical Student Stress Factor Scale. *Brazilian Journal of Psychiatry*, (AHEAD).

Diwakar, V. (2015). The effect of armed conflict on education: evidence from Iraq. The Journal of Development Studies, 51(12), 1702-1718.

Ferrel, M. N., & Ryan, J. J. (2020). The impact of COVID-19 on medical education. Cureus, 12(3).

Galbadage, T., Peterson, B. M., & Gunasekera, R. S. (2020). Does COVID-19 spread through droplets alone?. *Frontiers in public health*, 8, 163.

Grubic, N., Badovinac, S., & Johri, A. M. (2020). Student mental health in the midst of the COVID-19 pandemic: A call for further research and immediate solutions. *International Journal of Social Psychiatry*, 66(5), 517-518.

Hussein, M. H., Ow, S. H., Ibrahim, I., & Mahmoud, M. A. (2021). Measuring instructors continued intention to reuse Google Classroom in Iraq: a mixed-method study during COVID-19. *Interactive Technology and Smart Education*, 18(3), 380-402.

Imtyaz, A., Haleem, A., & Javaid, M. (2020). Analysing governmental response to the COVID-19 pandemic. *Journal of Oral Biology and Craniofacial Research*, 10(4), 504-513.

Inoue, H., & Todo, Y. (2020). The propagation of economic impacts through supply chains: The case of a mega-city lockdown to prevent the spread of COVID-19. *PloS one*, 15(9), e0239251.

Ja'afar, I. H., Hussein, N. M., & Hussein, A. L. (2020). Utilizing Mls To Teach Iraqi Efl University Students Short Stories. *PalArch's Journal of Archaeology of Egypt/Egyptology*, 17(7), 11342-11356.

Johansen, M. S., & Joslyn, M. R. (2008). Political persuasion during times of crisis: the effects of education and news media on citizens' factual information about Iraq. *Journalism & Mass Communication Quarterly*, 85(3), 591-608.

Johnson, R. D. (2011). Gender differences in e-learning: Communication, social presence, and learning outcomes. *Journal of Organizational and End User Computing* (JOEUC), 23(1), 79-94.

Koh, D. (2020). COVID-19 lockdowns throughout the world. *Occupational Medicine*, 70(5), 322-322.

Kron, M., Roenius, M., Alqortasi, M. A. M., Alhaidari, T., Hussein, M., Hameed, E. K., & Salih, I. K. (2019). Academic Medicine and Science Diplomacy: Medical Education in Iraq. *Academic Medicine*, 94(12), 1884-1890.

Lassoued, Z., Alhendawi, M., & Bashitialshaaer, R. (2020). An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic. *Education Sciences*, 10(9), 232.

Macháček, V., & Srholec, M. (2021). Predatory publishing in Scopus: evidence on cross-country differences. *Scientometrics*, 1-25.

Mogali, S. R., Yeong, W. Y., Tan, H. K. J., Tan, G. J. S., Abrahams, P. H., Zary, N., ... & Ferenczi, M. A. (2018). Evaluation by medical students of the educational value of multi-material and multi-colored three-dimensional printed models of the upper limb for anatomical education. *Anatomical sciences education*, 11(1), 54-64.

Mohammed, N. J. (2017). Scientific Research in Iraq Field study in six Iraqi universities. *Journal of the University of Anbar for Humanities*, 2(3) 327-382.

Moro, C., Stromberga, Z., & Birt, J. (2020). Technology considerations in health professions and clinical education. Clinical Education for the health professions: *Theory and practice*, 1-22.

Mousa, A. H., Mousa, S. H., Mousa, S. H., & Obaid, H. A. (2020). Advance acceptance status model for E-learning based on university academics and students. In IOP Conference Series: *Materials Science and Engineering* 671)1(, 012031). IOP Publishing

Neamah, A. F. (2020). Internet Network Capability Under High Demand in Coronavirus Time: Iraq Case Study. *Journal of Talent Development and Excellence*, 12(2s), 1194-1202.

Roberts, D. M., & Bilderback, E. W. (1980). Reliability and validity of a statistics attitude survey. *Educational and psychological measurement*, 40(1), 235-238.

Sandhu, P., & de Wolf, M. (2020). The impact of COVID-19 on the undergraduate medical curriculum. *Medical Education Online*, 25(1), 1764740.

Shabaaa, M. J. A., Abd Abasb, A. Y., & Lefta, A. (2020). The Development of Educational Services in the Al Qadisiya Subdistrict in Najaf,"Al Ashraf"Governorate, Iraq. *Development*, 13(5).

Srivastava, P. (2019). Advantages & disadvantages of e-education & e-learning. *Journal of Retail Marketing & Distribution Management*, 2(3), 22-27.

Stehlik-Barry, K., & Babinec, A. J. (2017). Data analysis with IBM SPSS statistics. *Packt Publishing Ltd*.

Storarri, A. C. M., de Castro, G. D., Castiglioni, L., & Cury, P. M. (2019). Confidence in palliative care issues by medical students and internal medicine residents. *BMJ supportive & palliative care*, 9(1), e1-e1.

Wagner III, W. E. (2019). Using IBM® SPSS® statistics for research methods and social science statistics. Sage Publications.