

Vulnerability and bioethics: discussions about the movie *Concussion*

Luciana Teixeira Waltrick¹, Francine Stein¹, Alcyane Marinho¹

1. Universidade do Estado de Santa Catarina, Florianópolis/SC, Brasil.

Abstract

This article aims to identify the perception of physical education students on vulnerabilities, intolerance and power relations in sports based on the motion picture *Concussion*. This is a descriptive, exploratory study with a qualitative approach. Ten undergraduate and graduate students from Universidade do Estado de Santa Catarina answered an online questionnaire about the movie. Data was examined by content analysis. With a sports-related thematic, the selected movie proved effective for teaching bioethical topics such as types of vulnerability, power relations and ethical conflicts, which may arise from professional practice in the field of physical education. The teaching-learning method motivated students to reflect on the controversial topics and situations presented in the movie.

Keywords: Bioethics. Sports. Health vulnerability. Education, higher. Motion pictures.

Resumo

Vulnerabilidade e bioética: discussões sobre o filme *Um homem entre gigantes*

Este artigo tem como objetivo identificar percepções de estudantes de educação física sobre vulnerabilidades, intolerância e relações de poder no esporte a partir do filme *Um homem entre gigantes*. Trata-se de estudo descritivo-exploratório, com abordagem qualitativa. Dez estudantes de graduação e pós-graduação da Universidade do Estado de Santa Catarina responderam ao questionário on-line sobre o filme. Os dados coletados foram examinados por meio da técnica de análise de conteúdo. A obra escolhida, com temática relacionada ao esporte, mostrou-se eficiente para o ensino de temas da bioética, como tipos de vulnerabilidade, relações de poder e conflitos éticos que podem surgir na atuação dos profissionais da área de educação física. O método de ensino-aprendizagem motivou os alunos a refletir sobre temas polêmicos e situações apresentadas no filme.

Palavras-chave: Bioética. Esportes. Vulnerabilidade em saúde. Educação superior. Filmes cinematográficos.

Resumen

Vulnerabilidad y bioética: discusiones sobre la película *La verdad duele*

Este artículo tiene como objetivo identificar las percepciones de estudiantes de educación física sobre las vulnerabilidades, la intolerancia y las relaciones de poder en el deporte a partir de la película *La verdad duele*. Se trata de un estudio descriptivo-exploratorio, con enfoque cualitativo. Diez estudiantes de pregrado y posgrado de la Universidade do Estado de Santa Catarina respondieron el cuestionario en línea sobre la película. Los datos recopilados se examinaron mediante la técnica de análisis de contenido. La película elegida, con una temática relacionada con el deporte, demostró ser eficaz para la enseñanza de temas de bioética como tipos de vulnerabilidad, relaciones de poder y conflictos éticos que pueden surgir en el desempeño de los profesionales de la educación física. El método de enseñanza-aprendizaje motivó a los estudiantes a reflexionar sobre temas y situaciones controvertidas que se presentan en la película.

Palabras clave: Bioética. Deportes. Vulnerabilidad en salud. Educación superior. Películas cinematográficas.

The authors declare no conflict of interest.

Approval CEP-Udesc 3.068.733

Bioethics is a multidisciplinary field dedicated to reflecting on ethical and moral conflicts in the globalized and technological contemporary world. It establishes relationships between concepts from different areas through a critical and autonomous analysis¹. The effective dialogue between these different areas shows the importance of interdisciplinarity, which enriches student training, helping their decision-making processes in the face of conflicts. Bioethics was once considerably restricted to the medical field², but currently this interdisciplinary perspective allows creating common spaces for reflection among professionals, enabling plural dialogues¹.

As recent studies point out, bioethics requires a teaching model that provides students with knowledge and develops their critical capacity, enabling them to discuss, answer, think about and question their own opinions, positioning themselves regarding the profession's inherent conflicts^{3,4}. When followed by debate, the structured analysis of a motion picture can facilitate this process, especially by questioning reality and providing a basis for reflection and arguments. Cinema, in this sense, becomes an important educational tool, as it offers opportunities to think about the complexity of being human and its implications for professional practice⁵.

Human beings are always considered vulnerable, although they may not be in a state of vulnerability⁶. Vulnerability is a latent condition that may eventually manifest itself, a possibility that materializes itself depending on the circumstances. Bioethics is concerned with all of these circumstances⁶. The bioethical concept of vulneration refers to the concrete context of vulnerability, determined by one's belonging to a social class, ethnicity or gender. "Vulnerability," on other hand, is a condition of any human being, since all humans could be harmed⁷.

There are three types of vulnerability: existential, social and moral. Situations of existential vulnerability are marked by suffering, illness and death, and affect everyone regardless of social conditions. Social vulnerability is associated with unequal political and economic structures and concerns injustices whose overcoming does not depend only on individual goodwill. Finally, moral vulnerability arises from culture (religion, customs, art) and from perceived values, making it more

difficult to distinguish. People who are considered morally vulnerable for being different suffer from discrimination, indifference and even hatred, and overcoming this state does not depend solely on the affected subjects, but rather on far-reaching cultural transformations⁸.

This article deals specifically with vulnerability in sports and, to that end, we have chosen the motion picture *Concussion*⁹ as an object of discussion, aiming to debate bioethical conflicts present in sports such as: power relations, athlete vulnerability and the role of the physical education professional. Thus, our goal is to employ the movie as a means of identifying physical education students' perceptions regarding vulnerability, intolerance and power relations.

Method

This is a qualitative, descriptive-exploratory study¹⁰, with ten undergraduate and graduate students from the Center for Health and Sports Sciences at Universidade do Estado de Santa Catarina, who were chosen by convenience sampling. The center was selected as a research field due to the proximity between its activities and the motion picture's theme.

The students voluntarily accepted to participate in the research and signed an informed consent form, besides an authorization for the use of photos, videos and recordings. All were previously informed about the nature of the research. Participant identity was preserved with fictitious names, chosen by the students themselves. Data regarding the sample, with respective code names, are presented in Chart 1. Chart 2 describes data collection steps.

Before the projection of *Concussion*⁹, participants watched a short documentary¹¹ and read a scientific article¹² as well as a news report¹³ related to the movie's theme. Students received the material via e-mail one week before the movie's exhibition. After the session, the researchers conducted a debate that lasted one hour and a half and was guided by a script with systematic questions: 1) Does the movie present power relationships? Which ones? How do they manifest themselves? 2) Is racism or intolerance present in the movie? If so, during which times and

in what way? 3) What are the athletes' risk factors and occupational diseases? How can such illnesses be treated and prevented?

Chart 1. Identification of study participants

Fictitious name	Course	Age (years)
Marta	Physical Education – Licentiate degree	23
Luíza	Physical Education – Licentiate degree	20
Juliana	Master in Human Movement Sciences	23
Nina	Master in Human Movement Sciences	24
Maria Izabel	Master in Human Movement Sciences	30
Flor	Master in Human Movement Sciences	35
Joana	Physical Education – Bachelor's degree	24
Kaio	Physical Education – Licentiate degree	22
Rosa	Physical Education – Licentiate degree	21
Clarice	Physical Education – Bachelor's degree	21

Chart 2. Data collection steps

Step	Description
1st	Students were sent texts belonging to the study's theoretical framework and supporting material regarding the motion picture's theme.
2nd	Exhibition of the film <i>Concussion</i> ⁹ in the auditorium of the Center for Health and Sport Sciences.
3rd	A debate lasting one hour and a half, guided by a list of questions.
4th	Distribution of online questionnaire containing seven questions.

After the debate, participants were asked to answer an online questionnaire with seven topics (Chart 3). The link to the instrument was sent by e-mail, and participants were given a 24-hour deadline to complete it, so as to obtain the students' reflections and perceptions while they were still fresh.

The data collected were stored in a Microsoft Excel spreadsheet and analyzed by the researchers using the content analysis technique, which comprised three stages: pre-analysis; exploration; and treatment/interpretation of results¹⁴. Pre-analysis aims to organize the material and formulate hypotheses. Exploration seeks to detect meanings

and ideas that either appear repeatedly or, for some reason, remain absent. In this phase, data units are words, phrases or topics repeated throughout the text^{14,15}. Finally, in the last stage, results are analyzed by inference and interpretation. This phase is key, as it enables categorization, which relates and organizes the information provided by observation sources. Still at this stage, results must be compared with the literature and submitted to the researcher's analysis^{14,15}.

Chart 3. Online questionnaire topics used in data collection

Topics
1. What is the social context of the movie?
2. Identify the types of power relationships present in the movie.
3. Which movie characters can be considered vulnerable? Why?
4. Is intolerance present in the film?
5. By whom and how does this intolerance manifest itself?
6. Reflect on the athletes' occupational illnesses and/or risks of certain illnesses due to excessive sports practice.
7. Discuss the role of the physical education professional in contexts similar to the movie's.

Results and discussion

Every human being is potentially vulnerable to suffering, illness and death, but due to specific circumstances, such as discrimination and exclusion, this vulnerability may assume concrete expression as a "vulneration." As explained by Schramm⁷, vulnerability is a mere possibility; "vulneration," on the other hand, is a concrete situation involving social class, ethnicity, gender or specific health conditions. In sports, vulnerability is characterized by power relationships, in the sense that someone has to be vulnerable to something or someone¹².

The bioethical challenge is to identify how each person is affected by vulnerability. Life in contemporary society requires people to prove their usefulness or adherence to the predominant model by certain personal attributes, and this situation leads to power relationships⁸. The term "vulnerability" is rarely used in sports, but a careful

analysis finds several factors and scenarios in which conditions of vulnerability present themselves: overtraining, injuries, doping, career abandonment and transition, moral and/or sexual harassment, corruption, racism, gender discrimination, emotional abuse, cult of body image and overexposure on social media¹².

Rebustini and Machado¹² propose a hierarchical model of vulnerability in sports that encompasses five classes. Coaches and athletes have little influence over the first, “institutions and policies,” and one of its associated categories is corruption. The second class, “communication and marketing,” comprises four categories directly related to high-performance sports – media, new media, social networks and sponsorship. These categories enable sports companies to tap into their respective markets. The third class, “sports development,” includes sports abandonment, often motivated by overtraining-related injuries.

The fourth class, “psychosocial factors,” encompasses the daily life of the sports universe, considering gender, religion, body image, racism, violence, emotional factors, and moral and ethical aspects. Regarding this topic, the authors point out that *in sports, bodies are primary vehicles not only for sportive performance, but also for the image (...) that stamps (...) several products*¹⁶. Finally, the fifth class, “sports performance,” includes results, overtraining, doping, injuries, and expatriation. The authors also argue that *the investment in the athlete is aimed at a single final objective: results*¹⁷.

Harassment is considered a cross-sectional category, as it permeates the entire sports scene. Aggression may be sexual or moral, being perpetrated by fans, journalists, agents and entrepreneurs. The athlete’s family may be a victim or perpetrator of harassment, and one of the vulnerability points of athlete’s lies precisely in the fact that they are often regarded as the solution to family problems¹².

Concerning the social context presented in *Concussion*⁹, six participants identified a vulnerability related to immigration and racism, as Maria Izabel states:

The film discusses different forms of intolerance, such as racism and xenophobia (the American doctor in relation to the African doctor); racial

intolerance (they despise the doctor for being black); intolerance to foreigners (the doctor was mistreated and they wanted him to go); religious intolerance (the researcher disconsidered the doctor’s beliefs).

Regarding power relationships, Juliana and Flor emphasize:

“There is a clear hierarchy. The National Football League [NFL] is at the top and exerts control over research, news and even over the FBI. Everyone is, in a way, coerced by the league’s power” (Juliana).

“The main power relationship concerns the NFL and the doctor, who feels powerless after discovering a disease capable of killing the league’s players” (Flor).

Eight participants identified the following power relationships: between the laboratory’s coroners; between medical researchers; and between medical examiner Omalu (the protagonist) and the NFL’s doctors. Rosa identified a power relationship in the sentence *“it’s only true if they say it’s true,”* during a conversation between the medical examiner, the city team’s former doctor, and the NFL doctor.

In the film, a concrete vulnerability can be identified, for instance, in the fact that Omalu, although belonging to a privileged socioeconomic class, encounters significant difficulties in the work environment due to his ethnicity. After discovering the pathology, the doctor continues in a state of “vulnerability” because his stance regarding the issue is contrary to the interests of “institutions and policies,” over which coaches and athletes have little influence¹².

According to article 11 of the *Universal Declaration on Bioethics and Human Rights*¹⁸, discriminating or stigmatizing someone, for whatever reason, violates the person’s fundamental dignity, rights and freedoms. Stigma and discrimination contradict the recognition of otherness and deny tolerance, understood as the respect for difference. Goffman¹⁹ understands stigma as a derogatory attribute, which sees differences as deviations and discredits those who present them. Godoi and Garrafa²⁰, on the other hand, highlight that discrimination is part of stigma, in the sense that stigma is always accompanied by discrimination.

Still according to Godoi and Garrafa²⁰, even if discrimination is an individual experience that occurs in relationships between people, our social structures create conditions for economically dominant groups to impose their worldview, values and norms to the detriment of minority or socially disadvantaged groups. The movie presents some of the abuses committed against disadvantaged people, whether socioeconomic, political or ethnic. From this perspective, it is clear that the team's athletes, coach and doctor are in a state of "vulnerability"¹².

Kottow²¹ presents two types of vulnerability: intrinsic vulnerabilities, which are typical of human existence; and circumstantial vulnerabilities, caused by poverty, lack of access to education and health, preventable diseases and discrimination. According to the author, vulnerable individuals must be protected because they need assistance to face the root cause of their fragility and have their needs met. This predisposes them to suffer harm²¹. All students identified the intrinsic vulnerability of the human being as a topic of the movie, as can be observed in some comments:

"All the characters in the movie can be considered vulnerable. If we understand vulnerability as a common characteristic, it becomes clear that each person is vulnerable in relation to a specific situation" (Joana).

"The athletes can be considered vulnerable because they do not know what they have been exposed to; the disease can kill them" (Flor).

Given the concussions caused during the practice of the sport and the excessive use of medications – situations that put athletes in a "vulnerability" state –, the motion picture exemplifies the hierarchical model of vulnerability developed by Rebutini and Machado¹² for sports results. Over the years, the excessive search to increase performance and achieve better results can lead athletes to abandon the sport due to occupational diseases¹².

Industrial, scientific and technological advances have created more sophisticated pharmacological agents and training models for the development of physical fitness, muscle strength and athletic skills²². However, substances and methods capable of artificially increasing sports performance

are harmful to athletes' health and contrary to sportsmanship²². Corroborating this idea, when reflecting on occupational risks and diseases caused by excessive sports practice, Marta, one of participants, highlights that *"many diseases remain hidden behind the politics, finances and marketing involved in sports."*

According to Silva²³, in a world in which both body and capital are overly valued, several abuses occur in the search for profitability and power. In this context, athletes become vulnerable from an early age – as they begin practicing the sport while still in school – due to impositions from external agents, lacking the full enjoyment of their autonomy. Furthermore, these athletes' professional life is rather short, due to the premature wear and tear imposed on their bodies. Professional maturity is reached during youth, when they can make the most of their body's potential to achieve the best results²³.

One of the participants, Luíza, points out that many athletes *"cannot re-enter the job market after retiring or abandoning their careers due to injuries, stress or loss of interest, since they started their careers precociously."* Clarice, on the other hand, points out that *"high-level sports considerably exceed health parameters. Pain, injuries, bruises, psychological trauma are part of athletes' daily lives."* Juliana sums up the problem as follows:

"Sports are believed to be synonymous with health; however, high-performance sports can be extremely detrimental to athletes' quality of life. This level of impairment may cause injuries and pain to be normalized. Thus, a dangerous process begins, in which athletes commit fully to the sport but neglect their own health. Therefore, excessive practice may cause diseases that stem from aggressive training and exaggerated goals, with athletes giving up their health, often without awareness of the consequences."

Technological advances in sports medicine and the creation of invasive and non-invasive performance-improvement techniques have generated conflicts and started ethical debates about their limits and implications for athletes' health²³. Physical education professionals can and should contribute to these discussions,

either by producing knowledge on the subject or through their own professional practice. To this end, however, they need to consider the biopsychosocial aspects of human movement²⁴.

Discussing the role of the physical education professional in contexts similar to the movie's, Nina denounces that *"many physical education professionals are colluding and accept these conditions in favor of fame, prominence, success and profit. In this sense, it is important to have professionals with more sensitive and humanized training, as they might act differently, exchanging preventive and healthcare information that might enable future improvements in the players' physical and psychological condition."*

Kaio complements these ideas by stating that *"a professional who values ethics and morals is extremely vulnerable in this context, as the only option that remains is to stand against this system, which, as the movie shows, is not easy at all."* These commentaries emphasize the importance of ethical reflection about professional conduct.

In this sense, it is the role of bioethics to try to prevent scientific and technological advances to stigmatize people and reinforce the power of dominant social groups. The reason for the reflections carried out by this field of knowledge lies precisely in the fact that the vulnerable are subject to the strong, those who may cause damage by neglect or malice¹⁸.

As Benatar²⁵ states, bioethics can reformulate the balance of power in the doctor-patient relationship, and this is enough for further stimulus to be provided to this field of knowledge in the 21st century. In Brazil, research linking bioethics to other health sciences is still necessary². In the area

of physical education, as pointed out by Santin²⁶ and in the study by Rebustini and Machado¹², this approach is particularly important, given the vulnerability of athletes and other stakeholders. Thus, the study of bioethics in higher education should be stimulated beyond the medical field, so that more agents can mediate the conflicts that arise from the advancement of technology and so that the new balance of power brought to the doctor-patient relationship is extended to other types of relationships.

Final considerations

The discussion of bioethical issues based on movies is relevant in the academic context, as it enables debates around the common dilemmas that appear in health professionals' daily lives, producing knowledge in the area and stimulating dialogue between people with different views. Movies can provoke feelings and may change people's views by connecting them with their own reflections.

In this study, the movie *Concussion*⁹ proved to be an effective resource to encourage reflection on bioethical topics among physical education students. The film presents power relations, vulnerabilities and different forms of professional conduct related to the sport. The structured analysis of the work and the collective debate, carried out with the support of other materials, made the approach to these themes more stimulating. The participants reflected on their own behaviors and became more aware of the importance of a more in-depth view of bioethical conflicts in sports.

References

1. Schwartzman UP, Martins VCS, Ferreira LS, Garrafa V. Interdisciplinaridade: referencial indispensável ao processo de ensino-aprendizagem da bioética. Rev. bioét. (Impr.) [Internet]. 2017 [acesso 1º jul 2020];25(3):536-43. DOI: 10.1590/1983-80422017253210
2. Figueiredo AM, Garrafa V, Portillo JAC. Ensino da bioética na área das ciências da saúde no Brasil: estudo de revisão sistemática. Interthesis [Internet]. 2008 [acesso 1º jul 2020];5(2):47-72. DOI: 10.5007/1807-1384.2008v5n2p47
3. Maluf F. Formação em bioética: uma análise de cursos de pós-graduação lato sensu no Brasil [tese] [Internet]. Brasília: Universidade de Brasília; 2015 [acesso 1º jul 2020]. Disponível: <https://bit.ly/3t8hBsw>

4. Andrade AFL, Pessalacia JDR, Daniel JC, Euflauzino I. Processo ensino-aprendizagem em bioética: um debate interdisciplinar. *Rev Bras Educ Méd* [Internet]. 2016 [acesso 1º jul 2020];40(1):102-8. DOI: 10.1590/1981-52712015v40n1e01732015
5. Dantas AA, Martins CH, Militão MSR. O cinema como instrumento didático para a abordagem de problemas bioéticos: uma reflexão sobre a eutanásia. *Rev Bras Educ Méd* [Internet]. 2011 [acesso 1º jul 2020];35(1):69-76. DOI: 10.1590/S0100-55022011000100010
6. Hossne WS. Dos referenciais da bioética: a vulnerabilidade. *Bioethikos* [Internet]. 2009 [acesso 1º jul 2020];3(1):41-51. Disponível: <https://bit.ly/36j4Kd9>
7. Schramm FR. A saúde é um direito ou um dever? Autocrítica da saúde pública. *Rev Bras Bioét* [Internet]. 2006 [acesso 1º jul 2020];2(2):187-200. Disponível: <https://bit.ly/36j4UkL>
8. Sanches MA, Mannes M, Cunha TR. Vulnerabilidade moral: leitura das exclusões no contexto da bioética. *Rev. bioét. (Impr.)* [Internet]. 2018 [acesso 1º jul 2020];26(1):39-46. DOI: 10.1590/1983-80422018261224
9. Landesman P, diretor. Um homem entre gigantes [*Concussion*] [longa-metragem]. Culver City: Sony Pictures; 2015. 123min., som, cor.
10. Minayo MCS. Análise qualitativa: teoria, passos e fidedignidade. *Ciênc Saúde Coletiva* [Internet]. 2012 [acesso 1º jul 2020];17(3):621-6. DOI: 10.1590/S1413-81232012000300007
11. Brown B. O poder da vulnerabilidade [podcast]. TED [Internet]. 2010 [acesso 3 maio 2019]. Disponível: <https://bit.ly/38P9Wqj>
12. Rebutini F, Machado AA. Modelo hierárquico de vulnerabilidade no esporte. *Pensar Prát* [Internet]. 2016 [acesso 1º jul 2020];19(4):939-52. DOI: 10.5216/rpp.v19i4.41209
13. Sandoval PX. 99% dos ex-jogadores da NFL têm lesões cerebrais, revela estudo. *El País* [Internet]. Esportes; 25 jul 2017 [acesso 3 maio 2019]. Disponível: <https://bit.ly/3cljgxc>
14. Bardin L. Análise de conteúdo. Lisboa: Edições 70; 2009.
15. Benites LC, Nascimento JV, Milistetd M, Farias GO. Análise de conteúdo na investigação pedagógica em educação física: estudo sobre estágio curricular supervisionado. *Movimento* [Internet]. 2016 [acesso 1º jul 2020];22(1):35-50. DOI: 10.22456/1982-8918.53390
16. Rebutini F, Machado AA. Op. cit. p. 945.
17. Rebutini F, Machado AA. Op. cit. p. 946.
18. Organização das Nações Unidas para a Educação, a Ciência e a Cultura. Declaração universal sobre bioética e direitos humanos [Internet]. Paris: Unesco; 2006 [acesso 1º dez 2020]. Disponível: <https://bit.ly/36nCixN>
19. Goffman E. Estigma: notas sobre a manipulação da identidade deteriorada. Rio de Janeiro: Zahar; 1980.
20. Godoi AMM, Garrafa V. Leitura bioética do princípio de não discriminação e não estigmatização. *Saúde Soc* [Internet]. 2014 [acesso 4 dez 2020];23(1):157-66. DOI: 10.1590/S0104-12902014000100012
21. Kottow MH. Comentários sobre bioética, vulnerabilidade e proteção. In: Garrafa V, Pessini L, organizadores. *Bioética: poder e injustiça*. 2ª ed. São Paulo: Loyola; 2004. p. 73-8.
22. Leal LA. Análise do doping genético nos esportes e seu aspecto bioético. *Rev Interdisciplin Ciênc Saúde* [Internet]. 2017 [acesso 1º jul 2020];4(2):71-80. Disponível: <https://bit.ly/3pHRvKs>
23. Silva TT. Questões éticas na prática da medicina do esporte na contemporaneidade. *Rev. bioét. (Impr.)* [Internet]. 2019 [acesso 1º jul 2020];27(1):62-6. DOI: 10.1590/1983-80422019271287
24. Santos ALP, Simões AC. Educação física e qualidade de vida: reflexões e perspectivas. *Saúde Soc* [Internet]. 2012 [acesso 1º jul 2020];21(1):181-92. DOI: 10.1590/S0104-12902012000100018
25. Benatar SR. Bioética: poder e injustiça. In: Garrafa V, Pessini L, organizadores. *Bioética: poder e injustiça*. 2ª ed. São Paulo: Loyola; 2004. p. 25-33.
26. Santin S. Educação física e desportos: uma abordagem filosófica da corporeidade. *Rev Kines* [Internet]. 1984 [acesso 1º jul 2020];(n esp):143-56. DOI: 10.5902/2316546410359

Luciana Teixeira Waltrick – Master – lu.twaltrick@gmail.com

 0000-0002-1425-0946

Francine Stein – Master – francinestein@unidavi.edu.br

 0000-0001-6501-0259

Alcyane Marinho – PhD – alcyane.marinho@hotmail.com

 0000-0002-2313-4031

Correspondence

Luciana Teixeira Waltrick – Universidade do Estado de Santa Catarina. Rua Doutor Abel Capella, 368, apt. 15, Coqueiros CEP 88080-250. Florianópolis/SC, Brasil.

Participation of the authors

Luciana Teixeira Waltrick defined the theme, collected and, together with Francine Stein, analyzed the data. Alcyane Marinho delimited the topic and made a critical review of the content during all phases of the research. All authors wrote the article.

Received: 12.1.2019

Revised: 12.3.2020

Approved: 12.12.2020