

# Motion picture resources and bioethics teaching in the human movement sciences

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## Abstract

This descriptive-exploratory study conducted with graduates from the Graduate Program in Human Movement Sciences at the Santa Catarina State University sought to understand the meanings of using movies in bioethics teaching and to identify motion pictures with bioethical themes related to exercise and health in the human movement sciences. Data were collected using semi-structured interviews and investigated by content analysis. A priori categories were based on the objectives. The participants' answers generated the a posteriori subcategories, organized as follows: contributions to bioethics learning for the Graduate Program in Human Movement Sciences and professional life; and perceptions about using motion pictures as a pedagogical resource, including suggestions of movies and themes specific to the course. Movie resources with related themes make learning more meaningful and pleasurable, bringing the students' professional realities closer to the bioethical content, facilitating such learning.

**Keywords:** Bioethics. Health. Motion pictures.

## Resumo

### Recursos fílmicos e ensino da bioética nas ciências do movimento humano

Por meio de estudo descritivo-exploratório realizado com egressos do Programa de Pós-graduação em Ciências do Movimento Humano da Universidade do Estado de Santa Catarina, buscou-se compreender os significados dos filmes no ensino da bioética e identificar obras cinematográficas de temas bioéticos relacionados à atividade física e à saúde nas ciências do movimento humano. Utilizaram-se entrevistas semiestruturadas, cujos dados foram analisados pela análise de conteúdo. As categorias *a priori* partiram dos objetivos e as respostas dos participantes geraram as subcategorias *a posteriori*, organizadas em: contribuições sobre o aprendizado de bioética para o Programa de Pós-graduação em Ciências do Movimento Humano e para a vida profissional; e percepção sobre o uso de recursos fílmicos como recurso pedagógico, incluindo sugestões de filmes e temáticas próprias ao curso. Os recursos fílmicos com temáticas próprias tornam o aprendizado mais significativo e prazeroso, possibilitando aproximações das realidades dos alunos aos conteúdos bioéticos, facilitando tal aprendizado.

**Palavras-chave:** Bioética. Saúde. Filmes cinematográficos.

## Resumen

### Recursos del cine y enseñanza de la bioética en las ciencias del movimiento humano

Este estudio descriptivo y exploratorio, realizado con egresados del Programa de Posgrado en Ciencias del Movimiento Humano de la Universidad do Estado de Santa Catarina, pretende conocer las ventajas de utilizar películas en la enseñanza de la bioética e identificar obras cinematográficas relacionadas con actividad física y salud en las ciencias del movimiento humano. Se utilizaron entrevistas semiestruturadas, y se aplicó el análisis de contenido a los datos. Las categorías *a priori* partieron de los objetivos, y las respuestas de los participantes generaron subcategorías *a posteriori*: Aportes del aprendizaje de la bioética para el Programa de Posgrado en Ciencias del Movimiento Humano y la vida profesional; y el uso del cine como recurso pedagógico, con sugerencias de películas y temas específicos. Los recursos del cine promueven un aprendizaje más significativo y placentero al posibilitar una aproximación de los estudiantes a los contenidos bioéticos de la profesión, facilitando el aprendizaje.

**Palabras clave:** Bioética. Salud. Películas cinematográficas.

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The human movement sciences (HMS) consist of sciences that study the functional body in movement—biomechanics, biochemistry, and physiology—and its relation with itself, within a given society and culture—anthropology, sociology, and psychology. The functional perspective focuses on body dimensions and shapes, whereas the relational view considers that the body relates to itself, to other bodies, to culture, and society—a body that has desires, ambitions, afflictions, and emotions. Both the functional and relational perspectives, each one restricted to its discipline, are small in face of the complexity of the different expression movements of the human body<sup>1</sup>.

According to Gaya<sup>1</sup>, HMS professionals, who investigate bodies in movements related to sports, dances, games, and martial arts/combat sports, among others, intend to analyze, interpret, and teach the bodily manifestations of the body in movement as well as to understand the different types of intentional bodily movements in light of meanings and values, conditions and possibilities, norms and reasons for education and training.

Considering the complexity of physical body movements and its psychic manifestations in the environment, context in which HMS professionals work, it is important that, during their training, they had been taught bioethics, to learn to address bioethical conflicts that may emerge from scientific discoveries and the use of new technologies. Durand<sup>2</sup> corroborates this perspective by discussing the importance of bioethics in resolving unique clinical cases, evaluating research, developing guidelines, implementing public policies when ethical issues arise as a result of technological development in the field of health and human life, including quality of life.

The importance of bioethics teaching in the field of health has been discussed by several authors<sup>3-6</sup>, which includes the use of motion picture resources<sup>6,7</sup>. The structured analysis of a movie, followed by discussion, can be a facilitating pedagogical resource to achieve the educational objectives of bioethics<sup>8-10</sup>.

According to Moratalla<sup>11</sup>, cinema is a privileged space for bioethical reflection; however, for learning to take place, adequate bases and methods are necessary. The final objective of the

cinematic narrative is to learn to deliberate, which, for the author, is not an easy task and requires practice. Storytelling, to him, is an instrument for demonstrating and exposing human life issues: through the narrative, one learns to relate the imaginary cases that constitute so many thought experiences to the ethical aspects of human behavior.

Still according to Moratalla<sup>11</sup>, by narrating imaginary cases, cinema enables immediate identification processes, as viewers are attracted by the plot, aesthetics, and identification with the characters. Moved by many audiovisual images more related to narratives expressed as images than as written texts, cinema has become an instrument of moral deliberation<sup>11</sup>. Narrative ethics analyzes the complexity of human life through narrative, and storytelling contributes to further the complexity of life regarding being born, dying, becoming ill, or living<sup>12</sup>.

Tarrés<sup>13</sup> approaches cinema as a pedagogical tool, as the use of motion picture resources facilitates the visualization of personal circumstances and contexts, such as values, beliefs, feelings, and desires, leading viewers to identify with the characters. Similarly, Isern<sup>14</sup> argues that movies can be used to illustrate attitudes and values, as well as professional practices, and that the movie's plot allows to psychosocially and spiritually contextualize health problems, unlike the concrete case study by the traditional model of case explanation. Tarrés<sup>13</sup> also emphasizes that movies can be used to address issues concerning both the course curriculum and bioethics.

Although research associating HMS and bioethics are scarce, some studies reporting bioethical conflicts are worth highlighting, such as doping<sup>15</sup>, genetic manipulation in athletes<sup>16</sup>, clinical care of professional athletes<sup>17</sup>, early sports initiation<sup>18</sup>, and vulnerability in high performance sport<sup>10,19</sup>. Considering the relevance of bioethics teaching within HMS and the scarcity of studies associating these two fields, this article seeks to identify the meanings produced by using movies in bioethics teaching for graduates of a Graduate Program in Human Movement Sciences.

## Method

This is a descriptive-exploratory study, with qualitative data analysis<sup>20</sup>. Eight students

who took the Bioethics subject and graduated from the Graduate Program in Human Movement Sciences at the Center for Health and Sports Sciences, Santa Catarina State University (PPGCMH-Cefid-Udesc), approved between 2017 and 2019, participated in the research.

These students were chosen by convenience, considering the research objectives and the specificities of the population to be investigated. Chart 1 summarizes the participants' characteristics. To preserve their identity, each participant chose a fictitious names to be addressed as in the study.

**Chart 1.** Identification of study participants

Fictitious name	Age (years)	Undergraduate Degree	Graduation year	Occupation
Wonder Woman	23	Teaching Degree in Physical Education	2020	Student
Frodo Baggins	33	Teaching Degree and Bachelor's Degree in Physical Education	2020	Teacher
Catwoman	24	Bachelor's Degree in Physical Education	2020	Student
Alice	32	Bachelor's Degree in Physical Therapy	2022	Student
Black Widow	42	Bachelor's Degree in Law	2019	Attorney
Scarlett O'Hara	42	Bachelor's Degree in Law and Tourism	2021	Attorney
Katara	25	Teaching Degree in Physical Education	2021	Teacher
Elsa	36	Teaching Degree in Pedagogy	2022	Teacher

All research participants signed an informed consent form and the consent form for photography, videos, and recordings.

The Bioethics elective subject at PPGCMH, chosen as the research context, has four credits and proposes the following specific objectives: discussing bioethical principles; disseminating humanizing values among students; promoting the ethical development of students; encouraging critical reflections in students regarding human behavior in health care and life care; problematizing controversial issues concerning bioethics at a national and international level; knowing the main regulations related to bioethics; identifying basic aspects of bioethics in research<sup>21</sup>.

Data were collected by semi-structured interviews<sup>22</sup> consisting of data on the participants' characterization and nine open-ended questions. Such questions contemplated the following generative themes: perception about using motion pictures as a pedagogical resource; contributions to bioethics learning for the PPGCMH and professional life; and suggestions for movies and themes specific to the course. Data were recorded in audio and on a field diary<sup>23</sup>.

After obtaining a list with names and contacts of all graduates who took the Bioethics subject, provided by the PPGCMH secretary, we invited

them via email and/or telephone to participate in the research. Upon agreement, in-person meetings were scheduled with each of the graduates, at a place, day, and time of their convenience. In these meetings, we explained the research and clarified objectives, method, and other issues.

Interviews were conducted individually, in a reserved place, and lasted up to 20 minutes. The audio recorded was subsequently transcribed in full—the total time of the transcriptions was 5 hours and 16 minutes. Interview data were organized using the NVivo software, version 10.0. Based on this organization, we established categories of analysis following Bardin's guidelines<sup>24</sup>, who delimit such a technique by understanding that it employs systematic and objective procedures for describing the content of messages and indicators that allow obtaining patterns, allowing to infer knowledge regarding their conditions of production and reception.

## Results and discussion

The research categories based on the study objectives were listed *a priori*, whereas the subcategories, which were based on the participants' responses, were established *a posteriori*, as shown in Chart 2.

**Chart 2.** Categories and subcategories of interview analysis

Categories	Subcategories
Perception about using motion pictures as a pedagogical resource	Innovative format
	Easy understanding of bioethical content
Contributions to bioethics learning for the PPGCMH and professional life	Expansion of the graduates' perspective
	Cinematic narratives as transformative potential
	Perceiving oneself as a researcher and teacher
	Suggestions of movies addressing bioethical topics

**Use of motion picture resources as a pedagogical strategy**

The research participants noticed numerous facilitating aspects by using motion picture resources for teaching bioethics in the context of HMS, as Katara summarized:

*“The movie is a facilitator for the professor to teach and for the student to understand” (Katara).*

This corroborates Figueiredo<sup>4</sup>, who states that professors are a facilitator and mediator of the teaching-learning process, and both professor and student become partners in knowledge building.

Linhares and Ávila<sup>25</sup> present the use of movies in pedagogical practice as a resource for more meaningful learning, with an active interpretation process of different perspectives and an environment for mediation. When active learning is used as a teaching strategy, students actively participate and commit themselves to their learning<sup>26</sup>.

This educational conception, which encourages critical-reflective teaching-learning processes, includes a moment in which students evaluate the contribution of each subject and seeks to gather information for decision-making based on the best possible ethical view, without overvaluing their own perspective, considered fundamental in the bioethical reflection<sup>2</sup>. Participants also mentioned the innovative format of the class, which captures the students' attention and awakens their curiosity toward the subject. The use of motion picture resources as a pedagogical tool presents the content in a practical and clear manner, but also in a playful and artistic way, enabling

a more pleasurable learning of dense topics. In turn, discussions after watching the film favor a more dynamic class.

Elsa points out that the use of movies is valid because many people are better visual learners, stating that the movie's beauty and aesthetics can create a lighter and more relaxing environment, bringing students together and providing a favorable space for discussions after screening. The Arts are educational resources capable of promoting humanism by the culture of emotion and image, fostering attitudes and values in professionals according to their own scale of values, education, and maturity<sup>27</sup>.

An audiovisual narrative portrays the complexity of human behavior and its implications<sup>27</sup>. Dantas, Martins, and Militão<sup>8</sup> state that a structured movie analysis followed by discussion provides the problematization of reality and allows anchoring arguments for reflection and discussion on bioethical conflicts. Moreover, according to the authors, audiovisual narratives lead students to discuss the conceptual bases of bioethics more pleasantly.

The investigated graduates understand that the pedagogical resource of the movie, followed by discussion, facilitates understanding the bioethical content to be addressed in class. Wonder Woman believes that during movie discussions it is easier to convey information by quoting a scene previously seen for contextualizing purposes. This ease was observed by Fonseca<sup>9</sup> when stating that, when watching a movie, the essential elements for discussion are equally presented to all viewers, preventing details from favoring some point of view or other. In turn, to pedagogically justify the activity, it is



paramount that a discussion takes place after the movie screening.

Cinematic narratives humanize situations, adding emotions and feelings, completing the technical-scientific information. This methodological resource allows identifying the moral problems at stake, determining what is fundamental as well as delving into the world of values and understanding the complexity involved<sup>11</sup>.

Catwoman ponders that bioethics issues are complex and dense, and watching a movie facilitates understanding the conflict, portraying realities and allowing to deepen the subject. Cinema as a pedagogical tool can be used to address the course curriculum or bioethical issues and care relations<sup>13</sup>.

Movies can be used to illustrate attitudes and values as well as professional practices. Moreover, the movie's plot allows to psychosocially and spiritually contextualize health issues, unlike the concrete case study according to the traditional model of case explanation<sup>14</sup>, which is confirmed in the statement below:

*"Depending on the theme discussed by the movie, I believe that it is even easier to understand the objective of the class, and the discussions held after watching it, mediated by the professor, provide a better acquisition of the content proposed by the professor for that class"* (Wonder Woman).

One of the greatest benefits of using cinema in training physicians, pharmacists, biologists, and psychologists, among other professions, is that it enables them to live multiple experiences by watching fictitious cases, being able to establish a two-way street between reality and fiction<sup>14</sup>.

According to Scarlett O'Hara, movies help students to understand the context surrounding the conflicting situation, as it is often a reality unknown to them. She mentioned as an example two films used in the discipline: *To the bone*<sup>28</sup>, which addresses aspects involving anorexia nervosa; and *Icarus*<sup>29</sup>, which contextualizes doping in sports. The participant explained these are two contexts that she had no knowledge of and the movies helped her to understand them.

Cinematic narratives, like all stories, are a mediation, a means of expanding possibilities,

both in reflective and rational thinking, besides serving as a transmission and display media to promote identification, empathy, judgment, or reflection<sup>12</sup>. This becomes clear when Alice describes that, when watching a movie, it becomes easy to see other aspects involved, the different perspectives regarding the same topic. Such fact demonstrates that the motion picture resource as a pedagogical technique is a way of expanding perspectives and possibilities toward what is different.

Moura<sup>30</sup> attributes two aspects to the cinematic narrative: the silence of the senses (situations and cultural practices that inform the characters' representation) and discursive polysemy (diversity of actors, values, interactions, and cultural representations). One such example is the characters' profile—including age, nationality, gender, social status, racial characteristics and those concerning protagonists and secondary characters—, which delimit the hierarchy of relationships between them; and costuming, which refers not only to the character's clothes, but assumes a cultural representation, among others, through the characters' way of acting and speaking as well as the adopted attitudes, their family, workplace, and social group relations.

Alice recognizes these aspects enabled by the use of motion picture resources. For her, the movie allows students to perceive and reflect on different perspectives on a given topic, which would be improbable if such topic was addressed in a traditional discussion. According to her, the movie provides precisely that: a look at the whole. Similarly, Scarlett O'Hara sees the film as a facilitator by showing multiple views of the same subject and that, in bioethics, one must reflect on all points of view. For her, films and bioethics are closely intertwined.

According to Mercadé<sup>31</sup>, cinematic language can describe experiences more precisely when words are insufficient. According to the author, the reflection on this narrative is individual, as it depends on one's experiences and perspectives. In other words, what one knows and believes in influences how one sees things. Thus, after watching a movie, viewers can incorporate the sensation into their life as their own experience.

Based on these considerations about the relevance of motion picture resources for bioethics teaching-learning, Moratalla<sup>11</sup> highlights the importance of using an appropriate method for this teaching, whose ultimate goal is to learn to deliberate. Thus, the students also reflected on the difficulties of using motion picture resources in bioethics teaching. They mentioned the need for location and availability of resources appropriate for the class, concern with the number of students in the classroom, and difficulty in understanding the proposed pedagogical method (lack of maturity), as well as the professor being prepared to use the method correctly.

These reports are in line with the study by Rego and Palácios<sup>6</sup>, who discuss bioethics teaching and its evaluation in undergraduate and graduate health programs. According to the authors, the use of motion picture resources in the teaching-learning process in bioethics is accepted by these students, but professors must identify the pedagogical objectives and expectations regarding the course or class, so that the method or the technique to be used are chosen to achieve the intended purpose. The authors state that the theoretical contents, methods, and techniques must be in line with the students' education level and with the proposed objectives.

Katara warns that educators must assess their intended audience and decide which teaching methodology to use, explaining that it is necessary to eliminate the new generation's difficulty of concentration, understand how to best teach them, given their little experience in reading long texts and extensive use of screens such as smartphones. Thus, using films with this audience can be an interesting strategy. Active learning methodologies is a teaching possibility for people who are used to considering emotion as a gateway; when the educator uses emotions in the teaching process, they can promote in the student the desire and motivation to learn<sup>27</sup>.

Cinema allows very immediate identification processes, as viewers are attracted by the plot, aesthetics, and identification with the characters<sup>12</sup>. Thus, bioethics teaching at PPGCMH, associated with the use of motion picture resources as a pedagogical strategy, proves to be relevant and pertinent for the investigated study population.

### Contributions to bioethical learning

The study participants identified the innovative format of the proposal, which constitutes a facilitating element for teaching bioethical content but requires attention to achieve the pedagogical objectives established and legitimize contributions to bioethics learning in different contexts.

Watching a movie can become a space for reflection, as stated by Fernandes<sup>32</sup>. The author champions the formative value of audiovisual narratives because it makes viewers reflect, remember their own experiences, and create meanings for their experience. This can be observed when Elsa reports that the Bioethics discipline at PPGCMH made her reflect on several personal beliefs, rethinking the familial and social concepts she reproduced uncritically. Thanks to the discipline, Elsa states that she was able to reflect on and have respect for others' perspective, considerations that corroborate the potential of cinematic narratives.

The students' statements point out the reflective potential, influencing life and generating processes of cinema appropriation—visual narrative. This corroborates Moura<sup>30</sup>, according to whom the ways in which viewers absorb, analyze, and appropriate the contents can lead to changes, as the narrative contents act directly upon one's values<sup>30</sup>. Cinematic narratives, like all stories, are a mediation, a means of expanding possibilities, both in reflective and rational thinking, besides serving as a transmission and display media to promote identification, empathy, judgment, or reflection<sup>12</sup>.

Wonder Woman reported that, after taking the Bioethics discipline, she avoids passing judgment without first knowing all the facts, as she realized that one situation may have different positions, thus broadening her perspective. Likewise, Scarlett O'Hara said that she started avoiding prejudgments, seeking to understand the other's reality.

Elsa also emphasized the importance of considering all points of view and suggested that the subject be mandatory in the PPGCMH. Alice explained that she held many preconceived opinions and, after completing the discipline, she started engaging in a more

reflective perspective, highlighting that her rather objective perspective, due to working with quantitative research, was broadened throughout the course.

Durand<sup>2</sup> points to bioethics as a necessary reflection in research ethics, addressing moral reflection applied to research and experimentation activities involving human beings and parts of the human body. In line with the author's ideas, the movie *Miss Evers' Boys*<sup>33</sup> was used in the Bioethics discipline to discuss ethics and vulnerability of research participants. The movie caused an impact and opened new perspectives and reflections for the students, as can be verified in Alice's statement:

*"From the movie discussions, I understood how important and necessary it is to know about research ethics, but I did not understand how much it mattered and how careful we should be. The fact that a simple question asked during research can make a person feel cornered, coerced, undermined. Before, I only had the researcher's perspective regarding the informed consent, and now I understand them"* (Alice).

Katara also understood the importance of being a researcher and carrying out extensive research after having taken the discipline, understanding what bioethics is and its purpose. Similarly, Black Widow broadened her knowledge during graduate school, recognizing as a researcher, she lacked access to the ethical details of the research itself. When watching the movie *Miss Evers' Boys*<sup>33</sup>, this fact, followed by the discussion in class, changed her perspective, especially regarding the surveyed people.

Alice reported a similar position: before watching the film *Miss Evers' Boys*<sup>33</sup> she perceived ethical documents as merely bureaucratic, but later came to understand the importance of protecting research participants. Catwoman also recognized that bioethics helped her broaden her perspective and, at the same time, to deepen it, becoming more careful and reflecting before acting. She states that, when writing her master's thesis and reflecting on the literature, she began to identify bioethical conflicts, remembering the movies she had watched in the Bioethics discipline.

By addressing the bioethical topics proposed in the discipline, students experienced critical-reflective moments and made direct contributions during the development of academic work in the graduate course, as illustrated by Frodo Baggins's statement:

*"The discipline was a turning point for me. From that moment on, I wanted to enter the world of graduate studies and master's degree. I felt really involved in this world and I realized the importance of researchers respecting and understanding their research object, the people involved, the colleagues. This discipline enriched me a lot. It is my turning point, my first step into graduate school. This should be an introductory discipline and people should take it as a special student or when starting graduate school due to its scope. It involves both the research and the humanitarian side, which I think is very important. The researcher needs to be human; they have to be technical, but, above all, they have to be human and respect others in order to be respected"* (Frodo Baggins).

Bioethics is used to resolve atypical clinical cases, evaluate research evaluation, elaborate guidelines and public policies to be implemented when ethical issues arise as a result of technological development in the field of health and human life, including quality of life<sup>2</sup>. As such, the PPGCMH aims to educate qualified and autonomous professionals to work in teaching and scientific and technological development within HMS, so that they become ethical researchers capable of theoretical reflection and critical systematization to multiply scientific knowledge<sup>21</sup>.

By using these resources, the bioethics teaching at PPGCMH brings contributions to the students' professional and personal lives. In turn, as multiplying agents, graduates are capable of disseminating different knowledge. They were also able to associate and list movies about bioethical issues related to HMS, which they suggest create new learning opportunities.

Their reflections on the suggestions of films and themes specific to the PPGCMH course, described below, are in line with Durand's<sup>2</sup> argument that the ethics of health policies involves an interdisciplinary reflection on issues

of public interest in health, such as prevention strategies, health promotion and protection, and access to these policies.

Bioethics, concerned with preventive measures against illness and threats that can affect the quality of life of a population (especially those who are vulnerable) by promoting social justice, is called bioethics of protection<sup>34,35</sup>, requiring an interdisciplinary dialogue with public health. From this perspective, Scarlet O'Hara remembered the movie *Erin Brockovich*<sup>36</sup>, which discusses bioethics, environment, health, and access to rights when citizens become ill due to environmental issues caused by industry advancements.

Florindo<sup>37</sup> and Nahas<sup>38</sup> address the importance of physical activity for preventing chronic degenerative diseases, osteoporosis, some types of cancer, obesity, and depression. Nahas<sup>38</sup> states that, due to the rising cost, both socially and in terms of productivity associated with chronic diseases, companies began to promote actions to motivate healthy lifestyles among their employees, family members, and the community in general. For the author, evidence suggests that physical activity, especially as a leisure option, can have beneficial effects on physical and mental health.

Viegas<sup>39</sup> discusses the relationship between bioethics and obesity, mentioning that the difficulty in locomotion or occupying spaces should be treated similarly as one treats a pregnant woman or an old person. Despite having chronic diseases related to habits, such as smokers or diabetics, obese people tend to suffer greater moral judgment because of their habits, which are directly related to their physical appearance. The lead researcher also recommends the films *Fat people*<sup>40</sup> and *WALL-E*<sup>41</sup>.

HMS professionals treat people in society, keeping in mind that everyone deals with technological advances, whether in their professional activities or daily lives. Thus, their actions should be based on ethical and responsible reflections.

When bioethics addresses decision and action through ethical reflection, together with the distinct knowledge of each individual case, such as the decision of the patient and those involved or the researcher's reflection on the treatment to be used with humans, Durand<sup>2</sup> calls it a microethics. Reports of this necessary bioethics are mentioned in the literature concerning topics

specific to HMS: the healthcare provider-patient relations<sup>17,42,43</sup> and the professional-patient/student/athlete relations<sup>15,16,18,44</sup>.

Consequently, the researcher or professor, as well as the professional who clinically works with the human being in intentional movement or in the recovery of this body, needs the support of bioethics regarding decision and action through reflection faced with the different knowledge of each bioethical problem presented.

Alice recalled that the movie *Me Before You*<sup>45</sup> addresses the provider-patient relation regarding physical therapy care and quality of life, also touching on the issue of euthanasia. Frodo Baggins also cited the bioethical conflict concerning euthanasia, suggesting the movie *Million Dollar Baby*<sup>46</sup> to discuss this issue, as it is based on the true story of an athlete and her coach.

The participants recalled the film *To the bone*<sup>28</sup>, used in class to discuss the issues of eating disorders and excessive physical activity. Other movies were also mentioned by the students to address bioethical conflicts in HMS, such as vulnerability in sports and doping, respectively, in *Concussion*<sup>47</sup> and *Icarus*<sup>29</sup>.

Besides these recommendations, the films *Perfect Body*<sup>48</sup> and *I, Tonya*<sup>49</sup> are relevant to discuss bioethical conflicts involved in professional-athlete relations. Regarding chronic degenerative diseases and physical therapy care, it is worth mentioning the movie *100 meters*<sup>50</sup>.

As for research-related bioethical issues, the Bioethics discipline used the movie *Miss Evers' Boys*<sup>34</sup> to address this topic, which proved to have a positive impact, as the graduates remembered it during the interviews. Alice also suggested the movie *Deep Blue Sea 2*<sup>51</sup> to address research ethics and genetic improvement.

Frodo Baggins mentioned films that depict issues related to sport, physical activity, and education itself, and argued that this selection can help in scenarios of violence and drug trafficking: *The Boy Who Harnessed the Wind*<sup>52</sup> and *Dangerous Minds*<sup>53</sup>. In addition to these recommendations, the movie *Coach Carter*<sup>54</sup> is also pertinent.

Healthcare providers must develop deliberative habits, skills, and competences to increase the quality of health care<sup>55</sup>. One option for such deliberative competence in the clinic



routine, as well as in the role of researchers or professors in HMS, can be explained by Moratalla<sup>11</sup>, by stating that deliberation takes place through narratives. According to the author, these foster thought and argumentation.

Deliberation is the argumentative method of bioethics and can be applied in clinical bioethics, bioethics in general, and even in ethics. In this context, bioethics is understood as a method to support decision-making that involves prudence and responsibility, also considering emotions, desires, values, and beliefs<sup>11</sup>.

We also highlight articles and works that suggest themes specific to some teaching areas, such as films with educational purposes related to teaching bioethics to undergraduate medical students<sup>8,27,56,57</sup>; films used to address ethical issues experienced by ICU professionals<sup>58</sup>; training activity of healthcare providers in the Unified Health System (SUS)<sup>59</sup>; and television series with bioethical themes specific to psychology<sup>60</sup>.

For HMS professionals to develop their deliberative skills and apply them in bioethical conflicts typical of the area, films discussing bioethical themes should be mapped and documented. According to Alarcón and Aguirre<sup>56</sup>, the range of useful films for medical education is so wide that it is difficult to compile titles and plots associating the selection of diseases they address. Based on this premise, without exhausting the subject, the Appendix of this article presents a chart with suggestions of films, documentaries, and series applicable to HMS.

Fonseca<sup>9</sup>, in the book *Cinema, ética e saúde* [Cinema, ethics and health], offers suggestions for films and documentaries and related themes. The work consists of essays written by several authors on films and articles with recommendation of topics for discussion and suggestions for further reading. Inspired by this work, we believe that the recommendations can contribute to developing the deliberative skills that professionals, researchers, and professors in the field must apply in their daily lives.

## Final considerations

Discussing bioethical issues based on motion picture resources is relevant in the academic

context, as it allows addressing common dilemmas in the daily life of healthcare providers, producing knowledge in the area and stimulating dialogue between people with different perspectives. Movies, in particular, are able to provoke feelings and change people's outlook by connecting them to their own reflections<sup>10</sup>.

Cinematic narratives are able to present bioethical content and contextualize it. According to the graduates of the PPGCMH investigated, the use of movies with themes specific to HMS makes learning more meaningful and enjoyable. Moreover, it provides an opportunity to bring the reality of their professions closer to these bioethical contents, facilitating learning.

HMS students, when taking the Bioethics discipline, become prepared to reflect on their role in society in the face of bioethical problems caused by scientific and technological developments. Hence, they can use the bioethics of protection to reflect on the set of preventive measures against illness and threats that can affect the quality of life of a population, especially those who are vulnerable, promoting social justice.

The Bioethics discipline, by using motion picture resources in the context of HMS, facilitates the presentation and contextualization of bioethical conflicts, typical of HMS. This broadens the students' perspective of bioethical conflicts existing in their professional environment, facilitating decision-making after evaluating different perspectives on the problem. It therefore has transformative potential, enabling students to see themselves as researchers and recognize the ethical responsibility that this role requires.

Although the literature on films focused on HMS is scarce, the professor in the field of bioethics can approach bioethical contents that contribute to the teaching-learning process. Examples of such content are the ethical relationship between professional and athlete, doping, excessive sports practice or its early initiation, among others. Important bioethical themes such as euthanasia, vulnerability, and discrimination, can also be part of these discussions.

As a suggestion for future studies, it is pertinent to highlight the importance of considering other investigative possibilities related to motion picture resources.

Different approaches have been discussed in the contemporary literature on cinema and education<sup>61</sup>, from more conservative, understanding cinema as a didactic tool used for classroom teaching, to broader perspectives, which understand cinema as a producer of meanings. Thus, other perspectives—sociological, didactic, related to cultural studies, and to the sensitive and creative aspects of cinema as a whole—may represent fruitful possibilities for investigation when associated with bioethical studies.

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#### Participation of the authors

Luciana Teixeira Waltrick outlined the theme, collected and analyzed the data. Fernando Hellman and Gelcemar Oliveira Farias performed a critical review of the content in the final stage of the research. Alcyane Marinho outlined the theme, helped with data analysis and critically reviewed the content at all stages of the research. All authors contributed to the writing of the article and approved the final version.

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## Appendix

Chart 1 lists films, series, and documentaries with themes related to bioethical education in HMS, based on three recommendation sources: films suggested by research participants (study results); films used in the Bioethics discipline at PPGCMH; and films suggested by the lead researcher.

**Chart 1.** Suggestion for motion picture resources for teaching bioethical topics in human movement sciences

Movie, series or documentary	Year	Direction/creation	Addressed theme	Recommendation
<i>100 meters</i>	2016	Marcel Barrena	Degenerative disease, persistence and adaptation in sport, quality of life, physical therapy treatment	Researcher
<i>Coach Carter</i>	2005	Thomas Carter	Social justice, vulnerability, teaching, andragogy	Researcher
<i>Miss Evers' Boys</i>	1997	Joseph Sargent	Research ethics	Subject
<i>Me before you</i>	2016	Thea Sharrock	Quadriplegia, euthanasia, physical therapy care, quality of life	Alice
<i>Perfect body</i>	1997	Douglas Barr	Sport, training, eating disorders	Researcher
<i>Erin Brockovich</i>	2000	Steven Soderbergh	Bioethics, health, environment	Black Widow
<i>Glory Road</i>	2006	James Gartner	Racial discrimination, vulnerability	Researcher
<i>I, Tonya</i>	2017	Craig Gillespie	Ethics in sport, power relations, abuse	Researcher
<i>Fat people</i>	2009	Daniel Sánchez Arévalo	Bioethics and obesity	Researcher
<i>Icarus</i>	2017	Bryan Fogel	Doping, fraud in competitions, power relations	Subject
<i>Million Dollar Baby</i>	2004	Clint Eastwood	Gender issues, euthanasia, prejudice in sport	Frodo Baggins
<i>Dangerous Minds</i>	1995	John N. Smith	Vulnerability, teaching	Frodo Baggins
<i>Way Beyond Weight</i>	2012	Estela Renner	Quality of infant feeding, effects of advertising	Subject
<i>Deep Blue Sea 2</i>	2018	Darin Scott	Pharmaceutical industry, genetic research	Alice
<i>The Constant Gardener</i>	2005	Fernando Meirelles	Pharmaceutical industry, research ethics	Subject
<i>To the bone</i>	2017	Marti Noxon	Eating disorders, body image distortion, excessive physical exercise	Subject
<i>Rising Phoenix</i>	2020	Ian Bonhôte and Peter Etedgui	People with disabilities, diversity and human potential	Researcher
<i>New Amsterdam Hospital</i>	2018	David Schulner	Ethical themes of the hospital environment	Elsa
<i>Concussion</i>	2015	Peter Landesman	Vulnerability, power relations	Subject
<i>WALL-E</i>	2008	Andrew Stanton	Bioethics, obesity and public policies	Researcher