



## ORIGINAL ARTICLE

# Physiotherapy students' perceptions of ageing – Playing narratives as a pedagogical innovation



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## ABSTRACT

**Introduction and objectives:** There is a considerable lack of structure in training health professionals in geriatrics. The narratives can promote a collaborative reflection on different topics and might be used as a pedagogic strategy for undergraduate health students. This study aimed to explore the adoption of new perspectives on ageing after the implementation of dynamic narratives in the first graduate year for physiotherapy students.

**Materials and methods:** An exploratory qualitative study was performed. Participants were included if they were:  $\geq 18$  years old, physiotherapy students and agreed to participate. Physiotherapy students ( $n = 44$ ) were recruited from the School of Health Sciences, Polytechnic Institute of Leiria. Two gaming sessions were performed to help students, as narrators, express their visions and ways to deal with the geriatrics field. Students' perspectives about ageing at baseline (T1) and after the narratives experience (T2) were collected by answering the following question: What is your perception regarding ageing? Two evaluators were involved in qualitative data analysis by performing: (i) an individual analysis of themes/subthemes and a discussion meeting to evaluate discrepancies and to reach a consensus.

**Results:** Negative perceptions about ageing were referred 39 times at T1 (most of them related to restriction; deterioration subthemes). There were no negative perceptions registered at T2. Positive perceptions increased at T2, from  $n = 39$  to  $n = 52$ , and three new subthemes emerged (beginning of something, fighting ageism, challenge).

**Conclusion:** This study demonstrated the potential of narrative-based experiences as a desirable pedagogic methodology (board games-oriented) for geriatric education in undergraduate health students.

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## Percepciones de los estudiantes de fisioterapia sobre el envejecimiento - Narrativas lúdicas como innovación pedagógica

## RESUMEN

**Introducción y objetivos:** Existe una considerable falta de estructura en la formación de los profesionales de la salud relacionados con el campo de la geriatría. Las narrativas son capaces de promover una reflexión colaborativa sobre diferentes temas, y podrían ser utilizadas como una estrategia pedagógica para los estudiantes de salud de pregrado. Este estudio tuvo como objetivo explorar la adopción de nuevas perspectivas sobre el envejecimiento después de la implementación de narrativas dinámicas en el primer año de posgrado para estudiantes de fisioterapia.

**Materiales y métodos:** Se realizó un estudio cualitativo exploratorio. Los participantes fueron incluidos si tenían: más de 18 años de edad; estudiantes de fisioterapia que aceptaron participar voluntariamente. Los estudiantes de fisioterapia ( $n = 44$ ) fueron reclutados del Instituto Politécnico de Leiria. Se realizaron 2 sesiones de juego para ayudar a los estudiantes, como narradores, a expresar sus visiones y formas de lidiar con el campo de la geriatría. Las perspectivas de los estudiantes sobre el envejecimiento al inicio

## Palabras clave:

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(T1) y después de la experiencia narrativa (T2) se recopilaron respondiendo a la siguiente pregunta: ¿Cuál es su percepción con respecto al envejecimiento? Dos evaluadores participaron en el análisis cualitativo de los datos, realizando: un análisis individual de los temas/subtemas; una reunión de debate para evaluar las discrepancias y llegar a un consenso.

**Resultados:** Las percepciones negativas sobre el envejecimiento fueron referidas 39 veces en T1. No se registraron percepciones negativas en T2. Las percepciones positivas aumentaron después en T2, de  $n = 39$  a  $n = 52$  y surgieron 3 nuevos subtemas (comienzo de algo; lucha contra la discriminación por edad; desafío).

**Conclusión:** Este estudio demostró el potencial de las experiencias basadas en la narrativa como una metodología pedagógica deseable (orientada a los juegos de mesa) para la educación geriátrica en estudiantes de salud de pregrado.

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## Introduction

Healthy ageing involves, beyond aspects related to managing biological and psychological changes, the managing of attitudes and mentalities in the face of this life stage. The better the interactions between the age groups, the more efficient this management will be.<sup>1</sup>

Thus, on a large scale, quality in ageing depends on optimizing societal interactions about this reality, including behaviours and attitudes towards the elderly. It is agreed that in contemporary societies where there are no prejudices and stereotypes of ageing, there are positive and progressive changes in strategic planning on ageing in the community,<sup>2,3</sup> which might have a specific impact on the way health services are delivered to aged people, e.g., there are no differences in the way people are receiving treatments according to age.<sup>2</sup> In this context, the perceptions about ageing are related to a stage of comprehensive perspectives, actions, and thoughts, e.g., personal beliefs about dependency and getting old.<sup>3</sup>

Particularly for students and health professionals, the perspectives on ageing are significant determinants of the quality of provider–patient interactions.<sup>4</sup> Literature has shown a considerable lack of structure, specialization, and good care management in training health and geriatrics professionals.<sup>5</sup> Previous studies in this field have been collecting healthcare experiences in the geriatric field, including the analysis of perceived difficulties, standards for communication patterns and clinical decision-making based on compassionate care. These three main areas were highlighted as relevant dilemmas for health professionals in this field, demonstrating that it is urgent to have particular strategies and time in higher education for training coherent personal perspectives of future health professionals.<sup>6</sup> Medical faculties have been receiving special attention in implementing specific programmes for training their students in geriatric care provision. In accordance, they have been implementing problem-solving exercises and have been designing special empathy sessions.<sup>7</sup>

Furthermore, it is consensual that standard methodologies are needed to normalize geriatric training in health professions. Previous authors highlighted students' engagement with didactic experiences related to the geriatrics field<sup>5,8</sup> as a high-standard recommendation in this context. However, didactic experiences are specially provided in clinical settings are not recommended in the first years of health curriculums. Right in the early graduating years, Bruschi state the importance of curricular reinforcement with opportunities to reflect on this topic in classroom settings,<sup>10</sup> including narrative-based exercises for improving empathy and for training compassion and human connection in healthcare provision.<sup>9</sup>

The narrative-based exercises can promote a collaborative reflection on different topics, using their own expression codes (symbols, images, etc.) and providing some arbitrary rules in participant interactions.<sup>10</sup> This freedom of interaction generated through the narratives encourages respect, discussion, and individualized

expression of perceptions and attitudes. It can effectively result in a positive change in the participant's experiences and thoughts.<sup>11</sup> There is a lack of guiding tools for developing narratives-based exercises.<sup>12</sup> Therefore, exploring systematic narrative methodologies for higher education in health courses is needed.

Players can use adaptations in modern board games to create stories using collaborative narratives. The narrative coherence might be created by establishing initial discussion themes.<sup>13</sup> At the same time, game mechanics introduce a dynamic experience through the narrative, providing many choices to complete the stories.<sup>14</sup> The implementation of game-based narrative protocols in higher education for health students and its impact in different areas of expertise (e.g., geriatric field)<sup>13</sup> should be further explored.

Thus, considering the pedagogical potential of dynamic narratives implementation, as well as the importance of high-quality training in the early curriculum of health students about geriatric care, the present study aims to explore the adoption of new perspectives on ageing after the implementation of game-based dynamic narratives in the first graduate year for physiotherapy students.

Concerning health professions, it is recognized the growing importance of health services such as physiotherapy for geriatric rehabilitation for their significance in promoting functional independence and, consequently, successful ageing.<sup>15</sup>

## Material and methods

The COREQ (Consolidated Criteria for Reporting Qualitative Research) checklist was followed to report qualitative data.<sup>16</sup>

An exploratory qualitative study was performed with a purposive sample of 44 physiotherapy students in their 1st year of bachelor, recruited from the Polytechnic Institute of Leiria. Participants were included if they were:  $\geq 18$  years old, physiotherapy students in the 1st year of their bachelor's and agreed to participate. Participants were excluded if they refused to participate, had non-availability at the preliminary activities calendar presented, and were enrolled in other similar activities included in the physiotherapy course curriculum. The researchers did work at the educational institution. However, there was no previous relationship with the participants. Participants did not receive any compensation or gain for participating in the study.

Eligible participants received detailed information about the study objectives and procedures by email. At the same time, the research team organized visits to the different graduated years of the physiotherapy course to demonstrate the project and to collect the first list of interested students. Of the sixty-six students initially interested, 18 declined to participate (due to difficulties in scheduling this additional activity  $n = 7$ ; or because they did not consider it a significant learning experience for the clinical practice  $n = 11$ ). There were no dropouts during the study. All procedures performed in this study followed the ethical standards of the

**Table 1**

Characteristics of the two gaming sessions using Ikonikus and fake artist adapted to the ageing study case.

| Games                                         | Original game rules and mechanics used                                                                       | Original components used | Adaptations to be played in Zoom                                                                          | Adaptations to objectives                                                                                                                                                      | Thematic about ageing to switch on the narratives      |
|-----------------------------------------------|--------------------------------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| Ikonikus (game session 1)                     | Card interpretation and by players to support their commentaries. Choosing the best comment based on a card. | Cards                    | Using a webcam to film the cards displayed on a white background where they were associated with numbers. | The narrator expressed something about the issue given by the facilitators. Other players used the cards to comment on the narrator's words.                                   | Happiness<br>Falling in love<br>Physical wellness      |
| Fake artist goes to New York (game session 2) | Narratives/storytelling about the drawings. Voting in the fake artist.                                       | None                     | Using collaborative drawing tools from Zoom. Using the chat to provide players with the words.            | Players draw all at the same time for 5 min. Then players wrote in the Zoom chat the name they wanted to vote for the deceiver after the narratives based on each player draw. | Fun in 60's; friends in 60's<br>care of myself time to |

Institution Ethical Committee and the 1964 Helsinki Declaration and its later amendments or comparable ethical standards (ethical approval by IPLEIRIA Ethical Committee CE/ipleiria/43/2020).

Due to the ongoing pandemic, analogue games were adapted to be played online by Zoom. Serious games are created or adapted to be fun and engaging for players while guaranteeing to achieve serious objectives.<sup>17,18</sup> Two games were adapted to become serious games, profiting from their engagement potential as entertainment games while also adapting to reach each session's objectives.<sup>19–21</sup> The games were played by students that followed the guidance of the game session facilitators, which also helped the students to do the debriefing stage to address the planned objectives for each session.<sup>22</sup>

In our case study, the theme was ageing and how the selected games helped students, as narrators, to express their visions and ways of dealing as future health professionals. The role of the facilitators was of significant importance because it helped to frame the game dynamics into the objectives. Using modern board games as therapeutic tools is proving to be effective.<sup>23</sup> We intended to test them also as support training tools for health practitioners.

The game sessions occurred along with two gaming sessions (Table 1), each with a different game in two consecutive weeks. The first session was done with Ikonikus cards, and the second one was inspired by the fake artist who goes to New York. Each of the games was adapted to be played online through Zoom and to achieve serious game goals of ageing issues, as expressed in Table 1. These games have powerful visual properties and versatile mechanics that stimulate cascade communication, which provide dynamism to the narratives and an incredible cocreated perspective within a group.<sup>24</sup> Both games were adapted to explore narratives about students' ageing perceptions hoping for their impact on compassionate taking care, as represented in Scheme 1.

In session 1, Ikonikus cards were used so a narrator could express their opinion about an issue presented by the facilitators. Then all the other players, after seeing the displayed numbered cards, should pick one of the eight cards. Each card could only be picked by a player, creating tension and urgency to choose because there were not enough cards for all the students playing. Only those who picked a card and could comment based on it could be in play to score. After listening to all comments, the narrator picked the best one, justifying their option. The selected player by the narrator scored a point. This continued during three rounds of self-narratives, following three main domains: (i) Happiness – happiness is possible when we get older; (ii) Falling in love – falling in love in the '60s; (iii) Physical wellness – today's news is about a national 70 years old champion in a sports competition.

In session 2, fake artist goes to New York mechanics of drawing and dynamics of narratives/storytelling were used to addressing predefined issues and words selected by the game facilitators.

During these games, all players participated, drawing with a different colour in the Zoom white canvas tool. The facilitator only shared the words with some participants, creating asymmetric information. Even the player without the information should draw and try to deceive other players. After 5 min, the facilitator presented the word to all the players and asked each one to explain their drawing. Players storytelling their drawings, trying to adapt to the word without knowing it, and needing to be attentive to understand which ones were bluffing. After the storytelling stage, the players voted in the chat about each who did not know the information. If the deceiving players did not get the majority of the votes, they scored a point; if the majority guessed which one that done so scored a point. This continues during several rounds, which begin with the following keywords: (i) Sociability – fun in the '60s or friends in 60'; (ii) Health – care of myself; (iii) Life learning – time to. . .

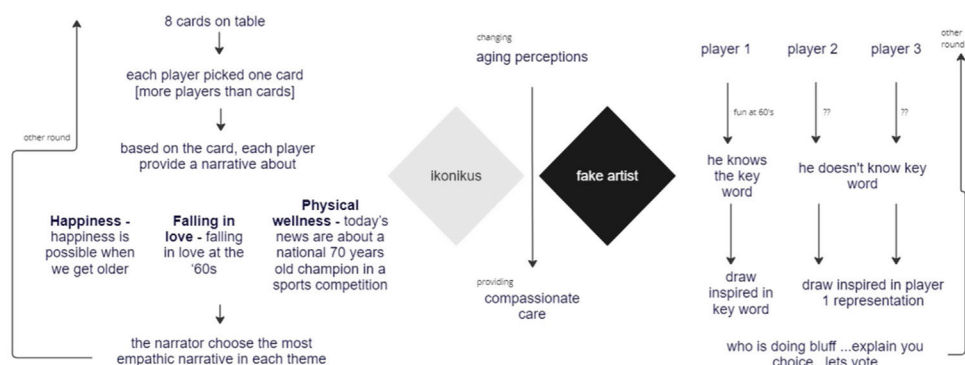
A semi-structured individual qualitative ten minute-questionnaire was created for the purpose, including an open question for assessing the students' perspectives about ageing at baseline (T1 – at the beginning of the 1st session, week 1) and the same open question was repeated after the experience in games' sessions (T2 – at the end of the 2nd session, week 2). Participants answered the following question: What is your perception regarding ageing? Sociodemographic characteristics (e.g., gender, age) were also collected at T1. The study design does not consider a follow-up because this is an exploratory study focused on characterizing the potential of a new game-based narrative method for serious purposes in higher education.

Forty-four students ( $19.64 \pm 3.14$  yrs old; 7 male) consented to participate in this study. Only the participants and the researcher were present during sample recruitment and the questionnaire filling. Participants could contribute to the response in ways they felt comfortable.

#### Data analysis

Two authors (MR and RF) independently performed data analysis. Interviews were transcribed verbatim and analyzed using thematic analysis. This occurred in three phases, namely, data reduction; data display; and conclusion drawing/verification.<sup>25</sup> All three phases occurred in T1 and T2. In the first phase, which was data reduction, significant sections of the student's answers were coded into themes. All answers were meticulously read to obtain a complete picture.

Moreover, interpretative notes were made. Subsequently, emerging subthemes were grouped into major themes. Answers could not be included in more than one category. The data display permitted drawing conclusions. In order to organize and facilitate data analysis, the map's themes and quotations were created. In



**Scheme 1.** Framework explaining adaptations to Ikonikus and fake artist games to explore students' narratives about ageing perceptions.

**Table 2**

Themes, subthemes, and the number of appearances of each subtheme across the sample of physiotherapy students' ( $n = 44$ ) on time 1.

| Major themes                     | Subtheme                     | Illustrative quotation                                                                                                                                                                             | N  |
|----------------------------------|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Positive perceptions             | Natural process              | "...an ongoing and gradual process with natural changes that begins at the adulthood."                                                                                                             | 17 |
|                                  | New perspectives/maturity    | "it can be seen as something pleasant... we achieve maturity... a way to see the world... we had a comfortable life, and we can enjoy it."                                                         | 9  |
|                                  | Happy process                | "...a lot of the good things that happen in life, they happen when we are older."                                                                                                                  | 3  |
| Negative perceptions             | Restriction/inability        | "...over time it imposes on us some limitations... preventing us to live our day-to-day the way we expect..."                                                                                      | 12 |
|                                  | Deteriorating process        | "...several body functions start to decrease gradually." T008                                                                                                                                      | 11 |
|                                  | Painful and suffered process | "it can be something scary when we think about related complications (such as diseases, pain...)"                                                                                                  | 7  |
|                                  | Lonely process               | "...every time I hear the word ageing... I relate it to loneliness..."                                                                                                                             | 6  |
|                                  | Fears                        | "...everybody... is afraid of ageing... it is sort of the beginning of the end of the life... when we show another person he/she has 'certain ageing symptom', he/she may feel upset or offended." | 3  |
|                                  |                              |                                                                                                                                                                                                    |    |
| Actions/attitudes towards ageing | Strategies to assist         | "...ageing with health and quality is more and more valued and, for that, there are professionals from the most diverse areas."                                                                    | 9  |
|                                  | Someone to help              | "...it is not easy and sometimes it is needed to ask for help... maybe instead of waiting... perhaps we could try to offer it to people (help)..."                                                 | 6  |
|                                  | Global issue/policies        | "...I also relate it... to the lack of support from the state, which doesn't care that Ms Maria receives just 100€ monthly... an amount that doesn't even pay for food..."                         | 3  |

conclusion, drawing/verification researchers reviewed the meaning and significance of the data analyzed. Emergent conclusions were confirmed as a means of testing the validity of the findings.<sup>25</sup> Both themes and subthemes were examined, reviewed, and iterated to guarantee that they reflected the data collected. The research team organized and conducted regular online meetings to examine and discuss topics regarding data analysis to ensure reflexivity. No substantial differences were found between the two researchers.

## Results

Four major themes were identified<sup>1</sup>: positive perceptions<sup>2</sup>; negative perceptions<sup>3</sup>; actions/attitudes towards ageing<sup>4</sup>; New skills in Professional Geriatric Curriculum. Below, each theme and corresponding subthemes are described. Table 2 presents the major themes, subthemes, illustrative quotations and the number of appearances of each subtheme at T1.

### Positive perceptions

#### Natural process ( $n = 17$ )

Physiotherapy students reported that ageing could be seen as something natural and inevitable or even as a natural life stage: the last one. The students saw ageing as a life stage similar to adulthood that occurs over time and gradually. Some students reported that ageing occurs typically the moment we are born and not as something that happens only in the later years of life. As something

natural that cannot be avoided, a student reported that it must be accepted as it is something we will all face.

#### New perspectives/maturity ( $n = 9$ )

Nine participants reported ageing as something pleasant since we achieve maturity and experience, which entails another way to see the world. This can be seen considering that, according to some students, the elderly is wiser and with more knowledge. However, according to participants, the elderly is always ready for new learnings as well as the consolidation and validation of all life's learnings. Students reported that ageing is related to new perspectives of life and allows experiencing new things.

#### Happy process ( $n = 3$ )

Three students presented the view of ageing as a happy process with no regrets. They refer that it is during older age that good things happen in life.

#### Negative perceptions

#### Restriction/inability ( $n = 12$ )

According to twelve students, ageing is related to restriction and inability, as it is usually a word with a negative connotation associated to getting old and to incapacity. It is a time when people start having difficulties performing tasks. However, according to these participants, the inability and limitations occur not only at a physical level (with an increase of the physical disability) but also at a psychological level (with mental health difficulties). These

**Table 3**

Themes, subthemes, and the number of appearances of each subtheme across the sample of physiotherapy students' (n = 44) on time 2.

| Major themes                                    | Subtheme                  | Illustrative quotation                                                                                                                             | N  |
|-------------------------------------------------|---------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Positive perceptions                            | Beginning of something    | "Aging is the beginning of a new stage."                                                                                                           | 10 |
|                                                 | Natural process           | "...a natural process, with some setbacks and some overshoots..."                                                                                  | 9  |
|                                                 | Happy process             | "We want to be happy, to feel fulfilled, to be together..."                                                                                        | 9  |
|                                                 | Fighting ageism           | "Average life expectancy and quality of life are increasing, which means that I, most likely when I am old, will have a higher quality of life..." | 9  |
|                                                 | Challenge                 | "ageing... can mean a new opportunity to challenge ourselves"                                                                                      | 8  |
|                                                 | New perspectives/maturity | "...ageing implies knowledge during the life span"                                                                                                 | 7  |
| Actions/attitudes towards ageing                | Copying strategies        | "... with will power, help and differentiated stimulation we will be able to reach new horizons."                                                  | 4  |
| New skills in Professional Geriatric Curriculum |                           | "...I realized that I had a stigma about ageing and I didn't even know..."                                                                         | 3  |

difficulties prevent people to live their day-to-day life the way it is expected with the normal performance of typical activities. It is also a time where people lose both their autonomy and independence.

#### *Deteriorating process (n = 11)*

Eleven students saw ageing as a destructive or deteriorating process where the body starts to fail progressively which can be related to loss of autonomy, pain, and suffering. This is due to several changes as decreased capacities on a physical and psychological level. Students seeing ageing as a deteriorating process also referred that it is a scary process related to the presence of new obstacles. Specifically, students referred to the loss of movements and functions over the years.

#### *Painful and suffered process (n = 7)*

Seven students referred to pain during older age, suggesting that ageing entails a lot of suffering due to feelings of loneliness and guilt and due to the scary process of having complications such as the presence of new diseases. Students referred to pain as being something physical but also as psychological pain.

#### *Lonely process (n = 6)*

Ageing was also related to loneliness and as a difficult process to manage which, according to participants, must be scary. Loneliness was also linked to abandonment and the fact that older people are left out of society.

#### *Fears (n = 3)*

Three students reflected on the fear related to ageing, which is present in people.

#### *Actions/attitudes towards ageing*

This theme covered the actions/attitudes students have towards ageing, i.e., when they answered regarding their perceptions about ageing, several students, in addition to giving their perspective, revealed some important intentions/solutions to deal with ageing.

#### *Strategies to assist (n = 9)*

Nine students referred to the importance of having strategies that may help assist the elderly. Taking care of people who are getting older is, according to those students, vital in order to provide a better quality of life. Several professionals from different areas are required.

#### *Someone to help (n = 6)*

Six students reflected regarding the importance of having someone to help during the ageing process. The help is needed, according to students, because of the importance of being monitored, the need for movement and to recover from a disability or disease. The help from another person will also be related to

feelings of abandonment and loneliness. Once more, students reflected that this help may also be psychological.

#### *Global issue/policies (n = 3)*

Three students referred to the importance of taking ageing as a global issue, and the importance of having policies that may help the elderly. Students reflected the lack of support from the state.

Table 3 presents the major themes, subthemes, illustrative quotations and the number of appearances of each subtheme during time 2. Below we present the results found on T2.

#### *Positive perceptions*

##### *Beginning of something (n = 10)*

Ten students reflected on ageing as the beginning of a new stage. They referred that old age should not be seen as a final stage of our life. It can be considered a new beginning or the start of a new stage, that should be taken advantage of. Thus, students do not refer to ageing as the end of a cycle, but also as the beginning of another.

##### *Natural process (n = 9)*

Nine students refer to ageing as a gradual process that occurs not only in adulthood but also from the moment we were created genetically. They mentioned that it should not be seen as a radically different stage from the one lived until then and that the fact that ageing is seen as something natural makes it easier for everyone to accept old age more lightly.

##### *Happy process (n = 9)*

Another subtheme that emerged regarded is ageing as a happy process. The students reflected on seeing ageing as something happy and positive, viewed with optimism, love and dignity.

##### *Challenge (n = 8)*

For eight students, ageing is seen as a time in our life when we can rediscover and reinvent ourselves, almost as a new life and as a new opportunity to challenge ourselves. It is a time that should be seen as a chance to learn new things and an opportunity to expand horizons. It may also be a time to challenge ourselves to learn new skills.

##### *New perspectives/maturity (n = 7)*

Finally, for seven students, ageing should be lived as fully as possible and must be seen as the continuation of a learning and achievement project that is achieved daily. It is seen as a very personal process due to life experiences and the conditions lived at that moment.

##### *Copying strategies (n = 4)*

Students reflected regarding several coping strategies to deal with ageing such as managing time, taking care of self-esteem,

improve willpower, mutual assistance and differentiated stimulation to reach new horizons as well as make plans.

#### *New skills in Professional Geriatric Curriculum (n = 3)*

Finally, three students reflected on the ideas they had previously to the narrative intervention regarding ageing. One student referred "...I enriched my culture as an individual and as a future physiotherapist. ... [it] helped us to be better at what we do. ...". A second student said "...I realized that I had a stigma about ageing, and I didn't even knew." Finally, the last student stated, "As future health professionals, we have the role of helping to improve this aspect."

## Discussion

Thirty-nine negative perspectives were initially (T1) identified in physiotherapy students. However, no evident negative perspectives were reported after the implementation of dynamic narratives. Two major subthemes were identified in the negative perceptions, namely "...over time, it imposes on us some limitations" (restriction/inability); "...several body functions start to decrease gradually" (deterioration). Specifically, some negative perspectives about restriction/inability were expressed using the plural first-person point of view ("on us"). This might demonstrate the narrator's feelings of ageing anxiety feelings, which is an important ageism factor in undergraduate health students. Boswell<sup>26</sup> explained that specific training opportunities used for decreasing ageing anxiety in future health professionals are totally desirable and might predict the quality of health care provision in old people. A previous study conducted by Watkins<sup>27</sup> concluded that stereotypical attitudes of physiotherapy students adversely affect physiotherapy care in older people. Accordingly, the present study demonstrated specific stereotypical attitudes, such as a considerable number of participants' perspectives (N = 11) about ageing as a period for the development of inevitable functional restrictions.

After the implementation of dynamic narratives (T2), two new subthemes emerged: the beginning of something ("is the beginning of a new stage"; n = 10) and challenge ("... a new opportunity to challenge ourselves"; n = 8). These students reflected on getting older as a new life phase. This change detected in the students' perspectives after the implementation of the narratives can have positive implications for the future motivation to work with the geriatric population. In fact, authors like Kane<sup>28</sup> argued that the low motivation of health professionals to work with the elderly is strongly related to personal perspectives and fears about this period. These results show an evolution towards the adoption of more positive attitudes that can be reflected in future professionals more motivated for specialized work in geriatrics.

In addition, after the experience with narratives, students talked about fighting ageism thoughts, discussing for example the quality of life of old people in future generations. This is an important achievement, since the manifestations of ageism are frequent and undesirable in health professions,<sup>29</sup> partially explained by the conventional curriculum design, which is characterized by a paradigm based on pathological ageing rather than healthy ageing.<sup>30</sup>

Appreciating the evolution from T1 to T2, several changes were found regarding the other subthemes. For instance, seeing ageing as a natural process (n = 9 vs n = 17) or as a new perspectives/maturity was reported by fewer participants (n = 9 vs n = 7) after the narratives-based experience. Contrary to this trend, other changes were found in ageing as seen as a happy process (n = 3 vs n = 9) and as a challenge (n = 1 vs n = 8) that was reported by more participants after the narratives-based experience. This evolution in subthemes seems to reflect an important shift in students' discourse as defended by Liang and Luo.<sup>31</sup> These authors suggested the

transition of the Successful Aging Theory (SAT), which is focused on the individual, especially the maintenance of an active and busy body to the adoption of the Harmonious Aging Stresses Theory (HAST), characterized by the complementary coexistence of body and mind, harmonious feelings, and relationships, including the identification of opportunities and challenges in old age.

The narratives supported by the use of drawing tools (fake artist goes to New York) or cards interpretation (Ikonikus) demonstrated to be efficient strategies for stimulating the expressiveness and the reflexive perspectives on ageing for undergraduate health students, including: the adoption of challenging perspectives about ageing and a radical change in negative views.

The use of drawing tools to assess the attitudes and individual perspectives of young adults about ageing has been previously used, without a game framework that promotes interaction between the players and without moderation, demonstrating its applicability as an expressive tool for assessing attitudes.<sup>32</sup> On the other hand, in a previous study carried out with medical students, the authors Brand and colleagues<sup>33</sup> used strategies of visual interpretation and narratives to challenge and promote change in perspectives on ageing. To summarize, the application of modern board games with serious adaptations, including drawing tools and narratives, can be considered advisable for training attitudes about ageing in undergraduate students. These methodologies might be part of innovation strategies in the curriculum of health students, not only in geriatric issues but also in training of misconceptions in other critical areas of intervention, where the percentage of professionals interested to work in, is too low (e.g., mental disease, chronic care, etc.).

The paper presents some methodological limitations, that should be considered in future related research projects. The collection of some issues (e.g., degree of close contact with older people) that could have influenced students' perceptions of ageing, should be included, being determinants for the efficiency of game-based narrative programmes. Sample recruitment had limitations, considering that participants belonged to a single institution. In future studies, diversity in sample recruitment is desirable. Sample recruited has also some asymmetry in gender distribution: only 7 participants from 44 are male. Barret and Rohr<sup>34</sup> reported that female students have more favourable attitudes towards elders, and therefore this is an important criterion to control in future related studies.

## Conclusion

This study demonstrated the potential of narrative-based experiences as a desirable pedagogic methodology (board games-oriented) for geriatric education in the first year of bachelor for health students.

At baseline, undergraduate physiotherapy students presented a considerable number of negative perceptions about ageing, specifically about restriction/inability (n = 12) and deterioration (n = 11) and their verbal expressions reflect ageing anxiety feelings. After the protocol implementation (T2) no evident negative perspectives were reported and the adoption of a new ageing perspective can be noticed, in accordance with more comprehensive ageing theories (HAST).

Future studies in this topic might explore how the long-term implementation of these methodologies might have positive implications for the future motivation to work with the geriatric population.

## Conflict of interest

None declared.

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