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ORIGINAL ARTICLE

Impact of corporal experience on physiotherapy undergraduate students at the Universidade Santa Cecília, Brazil

Impacto de vivências corporais em estudantes de fisioterapia da Universidade Santa Cecília

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Abstract

Introduction: This study aimed to identify the experience aspects of physiotherapy undergraduate students at the Universidade Santa Cecília who attended “Corporal Experiences and Motor Coordination” classes in 2020. **Methods:** A total of 38 first year students were evaluated in a retrospective qualitative descriptive study. We used the students’ testimonials collected at two different moments of the classes as research data. We also asked the students if they were involved with any kind of physical practices such as high-level sports, somatic education training, or daily exercises, and for how long; or if they had practiced and how long ago they had quit. We used the Bardin Content Analysis method for data analysis. **Conclusion:** At the end of the study, it was possible to infer the positive impact of these experiences on these students’ lives and bodies.

Keywords: body; perception; students; physiotherapy.

Resumo

Introdução: Este estudo teve como objetivo identificar os principais aspectos da experiência dos estudantes da Faculdade de Fisioterapia da Universidade Santa Cecília, que frequentaram a disciplina “Vivência Corporal e Coordenação Motora” no segundo semestre do ano letivo de 2020. **Métodos:** Foram analisados os depoimentos de 38 estudantes, num estudo descritivo qualitativo retroativo. Esses testemunhos, constituindo a avaliação bimestral, foram colhidos em dois momentos diferentes do processo de práticas de vivências corporais semanais. Foi perguntado aos estudantes se são praticantes de exercício físico, se praticam esporte de alto rendimento, se fazem uso de técnicas de educação somática, e há quanto tempo exercem essas atividades; ou, se já praticaram alguma dessas modalidades, há quanto tempo estão inativos. Para a análise de dados foi utilizado o método de análise de conteúdo de Bardin. **Conclusão:** Ao final da pesquisa, foi possível inferir o impacto positivo dessas vivências na vida e no corpo desses alunos.

Palavras-chave: corpo; percepção; estudantes; fisioterapia.

Introduction

The primacy of reason and knowledge in line with relations of causes and effects regarding knowledge production and construction, misleads the individual to perceive exploratory bodily practices, sensitization, body awareness, body expression and gestural construction as inferior forms for the learning process [1]. Reassuring the importance of the body as a starting point for learning is in line with what is known today about psychomotor development.

Corporeity goes beyond an intimate understanding of the physical functions of the body. Above all, it is a concept which incorporates the physical body, the lived experiences, and the social context of the being. Although physiotherapy and other health educators know of the need to adopt the corporeality discussion to overcome the barriers of the biomechanical discourse, a lack of mastering how to approach this subject is still a reality [2].

Body awareness, defined herein as the subjective experience of the body and specific parts of it, is the interface between perception of the physiological body (afferent nerves) and cognitive and affective processes in the nervous system. Thus, there is a great need for vigilance and concentration in the processes that involve their training [3]. There is strong evidence that body awareness is important for both physical stability and for achieving well-being [4].

Physiotherapy teaching focuses on its historical legacy. The profession sees theory as the most legitimate knowledge form, demonstrated by the weight it places on evidence from controlled tests and systematic reviews [5]. In this panorama, body awareness emerges as a scientific research topic around the vast number of health topics [6].

It is important that physiotherapy professionals and students experience practices for raising awareness and learning about body awareness, understanding its dynamics. In doing so, they will be able to pass on the knowledge and processes of this practice to patients, so that they can not only increase their therapeutic gains, but also avoid work injuries and perform work gestures more efficiently and with less energy expenditure.

It is known that the pedagogical process in the context of 'knowing, doing and being' allows students to develop multiple skills necessary for the complexity of the practice [4]. Therefore, it is expected that students (as future physiotherapy professionals) have a body awareness level which is not only capable of assisting in transposing theoretical knowledge into practice, but also in helping to develop autonomy towards clinical reasoning. Considering these issues, the present study aimed to identify the main aspects of the experience of students who attended the subject "Body Experience and Motor Coordination" at the Faculty of Physiotherapy of the Santa Cecília University (UNISANTA) in Santos, São Paulo, Brazil.

Methods

Study design and ethical aspects

This research is characterized as a retroactive descriptive study with a qualitative approach, using the Content Analysis method by Laurence Bardin [7]. The data examination was carried out after approval by the Ethics and Research Committee with Human Beings (CEP) UNISANTA, with CAAE no. 39964920.1.0000.5513 and Opinion no. 4.446.915, having followed all the recommendations of Resolution no. 466/12 of the National Health Council.

Study population

A total of 38 students from the 1st year of the Physiotherapy course at the Santa Cecília University participated in this study. The inclusion criteria for the study were: being linked to the Physiotherapy course at the Universidade Santa Cecília at the time;

having participated in at least 75% of the workload of the subject “Body Experience and Motor Coordination” in the second half of 2020; being over 18 years old; have signed the Free and Informed Consent Form (ICF).

In addition to the inclusion criteria, factors such as professional sporting experience, yoga practice, Pilates or somatic techniques were considered; dancers and students with visual impairments were also controlled, as it is believed that these people can have a more sophisticated relationship with their own bodies in terms of awareness and sensitivity.

Procedures

A total of 38 of the 78 students who took the subject “Body Experience and Motor Coordination” in 2020 agreed to provide their bimonthly assessments as the data source for this retroactive study. All 38 students filled out a form for the characterization of the sample and signed a term of responsibility, which granted this study access to their assessments.

The course had practical and theoretical classes lasting one hour and 40 minutes per week throughout the second semester. Thus, sensorimotor exploration of the following bodily elements was practically addressed each week: feet, respiratory muscles, pelvis, perineum, pelvic girdle, shoulder girdle and trunk; work was also conducted on muscle chains, gait and motor coordination using materials for sensitization and support, such as broomsticks, cloths, tubes, tennis balls, etc. Part of these classes were taught in person and part remotely due to the COVID-19 pandemic. In the first eight weeks, the 100-minute classes were online and in the last eight weeks, they were in person.

The teacher proposed a provocative question to the students to awaken reflection on their experiences as a form of bimonthly assessment. The question, which was the same in both tests was how the experiences they had had impacted on their bodies by asking “How much do you inhabit your body?”

Research instrument

Students who accepted to participate in the study answered an online form to characterize the sample. This form included questions to obtain participants' data on age, gender, and physical exercise habits.

Reports which were collected from students by the teacher as a 1st and 2nd bi-semester evaluation were used for data collection. The first evaluation took place two

months after the beginning of the classes after the work on sensitization and perception of the body parts (feet, respiratory muscles, pelvis, perineum, pelvic girdle, shoulder girdle and trunk). The second evaluation took place two months after the beginning of the classes after the procedures involving theoretical-practical knowledge of muscle chains (GDS) and motor coordination (Béziers). The “Body Experience and Motor Coordination” subject was taught for the first time in 2020 as part of the Physiotherapy course curriculum at the Universidade Santa Cecília. In developing the content of this discipline, under the guidance of Professor, students went through an awareness and perception process of their own body through principles and practices of somatic education, mostly based on the works of Ivaldo Bertazzo [7,8], Marie Madeleine Béziers [9], and according to the Muscle Chains approach by Godelieve Denys Struyf (GDS) [10].

As they do not contain a single or exact answer, the testimonies flowed in an authentic, personal, and intimate way, revealing individual choices which enabled a deeper understanding of the researched subject.

Data analysis

Bardin’s Content Analysis Method was used to analyze the data [11]. According to it, a first full reading of the testimonies of each student was performed to understand their experiences and obtain the general meaning of their reports. Then, a second more attentive and investigative reading was conducted to find common registration units in the testimonies to all or part of them. These registration units were mostly nouns, for example: pain, care, relief, posture, breathing, attention; and verbs, for example: feel, perceive, recognize, care. The excerpts containing these registration units were separated and then placed into categories according to the analogical regrouping based on the analysis of the descriptions of the students’ reports.

Analog regrouping resulted in relational axes, as proposed by Bardin’s method for finding general categories into which we could fit the snippets of accounts that contained such nouns and verbs, giving rise to the following categories: Relationship with Yourself, Relationship with the Other, Relationship with Physiotherapy, Relationship with Pain, and Relationship with the Body.

Nominal categorical data were presented in relative and absolute frequency.

Results and discussion

As for the quantitative data in relation to the characterization of the sample of 38 participants, 26 identified themselves as female ($fr = 0.68$) and 12 as male ($fr = 0.31$); two said they practiced physical exercise ($fr = 0.05$), while 36 reported not practicing ($fr = 0.95$). It is important to remember that the study took place during quarantine with social isolation due to COVID-19. A total of 35 of the participants answered yes ($fr = 0.92$) regarding having practiced regular physical exercise in the past, while only three said no ($fr = 0.07$). Among the activities performed, they reported combat (jiu-jitsu and karate), dancing (ballet, jazz, street dancing and contemporary dance), weight training, swimming, running, cycling, soccer or a combination of two or more of these practices. One of the participants was blind. We believe that, because the participants are physiotherapy students, the practice of some physical exercise is common in this type of population and they were the ones who proposed to participate in the research because they probably felt more comfortable in saying what they felt about their bodies although, in the period of the pandemic, most said they were not exercising.

For the qualitative results analyzed, Bardin's Descriptive Method [11] was used.

The "Relationship with Yourself" category concerns the perceptions, changes, and discoveries that the students had in their bodies as an instance of themselves, as well as the reflections based on these topics. It is divided into three subcategories: Self-knowledge, Self-Perception, and Quality of Life.

The Self-knowledge subcategory describes the repercussions beyond the physical scope of body awareness. It reflects the activity's contribution to personal processes which result in bodily changes in relation to yourself, such as self-care, and which raise reflections on life and on what you want for yourself; it also rehearses a body/mind junction.

The following excerpts taken from the testimonies illustrate aspects that enable us to observe how the students' experience with bodily experiences and the somatic education techniques practiced in the "Body Experience and Motor Coordination" subject is related to the Self-knowledge subcategory. The reports were preserved in their original forms in Portuguese, and then translated into English.

"The whole self-knowledge process that we went through [with the classes] made us feel that we also have our problems, difficulties and limitations to be improved, thus bringing the reflection that we are all equal."

"The experiences mainly impacted my life and my mind, as I feel that I reflect more on my existence since we started classes."

“The lack of time ends up making us forget our needs and our limits, and this class was able to demonstrate the right moment to stop and reflect on all of this and want a change.”

“I often have some stress, I'm a little discouraged about emotional issues and the bodily experience helps in every way. (...) these are essential things for our health, feeling my emotions, contractions, is one of the best ways to get to know myself better.”

“The experience introduced more perception about my body. By recognizing your body and knowing that it is a construction, you can recognize your capacity for initiative and confidence in yourself, increasing your intellectual capacity (...) recognizing both the body's autonomy and its dependence on the environment, with the culture and society in which it lives, makes it possible to become a being that, by constantly changing, causes changes.”

Closer contact with their bodies enabled the students to better recognize themselves, their motor and emotional patterns, as well as their needs. The impact of bodily experiences and somatic education techniques in relation to self-knowledge also appears in similar studies. This is the case of Bretas *et al.* [12], who studied nursing students; and Mehling *et al.* [4], who used somatic education in patients in their study with therapists and included the patients themselves in the studies. In Mehling *et al.*, [4] self-control appears as a skill that patients learn during practice and are able to apply when dealing with sensations such as pain, and this skill can be expanded to the emotional field. Examples of this self-control were also observed in the reports of the students in this study, as shown in the following excerpts:

“(...) I ended up getting COVID and the classes were important even with that because I managed to have a lot of self-control, which I never imagined being able to have. I was able to deal with my body much better during the illness, I managed to control my respiratory problem (I am asthmatic) at home without having to go to the hospital and this was a victory.”

“I had no idea how this [breathing] made a difference in my body, until I started doing the breathing exercises and I feel better, lighter and I learned to control them. (sic).”

According to Balsanello [13], breathing as a support for movement is one of the common characteristics of somatic education methods. In addition to verifying this connection between breathing and movement, Mehling *et al.* [4] place breathing as a central connector between body and mind, which is an indispensable tool for both the therapist's use with the patient and for the patient's personal practice.

“The experiences brought a perception about my body which is movement, deconstructing already formed conceptions and introducing a different look, a look of transformation, I started to look at myself from the inside out.”

“This class on living has been very reflective (sic) in my life and my body, it has helped a lot to know what I can be doing to improve my day-to-day (sic) and in the future help other people to get to know each other better, to know their own body, something that many people do not know.”

In this study, the Self-perception subcategory reflects the parts of the statements that reflect body awareness, portraying an achievement of more sophisticated attention to body parts which are now sensitized. It also portrays attention to improved movements and postures adopted in daily life. These reports also reflect the difficulty in perceiving one's own body, as in the following excerpts:

“Due to the difficulty and exercises, I reflected on how much I pay attention to and take care of my body. I concluded that very little, almost never, and that's why the classes did me very well for self-knowledge and care.”

“The classes showed me that I still have a lot to know about my own body, that there were places I didn't even know I could feel.”

“In some cases I didn't even know I had such difficulty if I hadn't stopped to pay attention (...) I noticed details that I had never noticed and/or paid attention to myself, details that made a difference, but which went unnoticed in everyday life due to the lack of attention I had to my own body.”

According to Mehling *et al.* [4], although people naturally go through an appropriation process of the body during psychomotor development, this process can be interrupted or disturbed, hence the need for these somatic education techniques. The testimonies of the students revealed compliance with this trend in the process:

“After the classes, the lack of control I had in relation to stability and movements [of the pelvic girdle] in its axes was very noticeable.”

“I noticed lost flexibilities during my body's maturation, pain that arose due to the practice of sports etc.”

The weekly routine of silencing the body in the face of external interference, together with detailed bodily self-investigation, enabled expanding the perception of bodily processes. The increase in body perception was observed in the studies by Bretas *et al.* [12] and those by Lima Cecchini *et al.* [14] in studies in which nursing and physiotherapy students respectively began to participate in bodily experience classes.

“When walking, running, I pay attention to correct stepping; despite getting a little sore due to the contraction of the tibialis anterior, I always remember the position. (...) I also

started to pay more attention to the pelvis and pelvic girdle, which we find rigid, the simple fact of sitting, balance and position. We even forget they exist.”

“The class [in] where we worked on the pelvic girdle was great to see how relaxed and wrong my posture is.”

“I feel more present when carrying out my daily activities, I notice each movement and the way I’m exercising, if I’m doing it right and where in my body I feel I’m working.”

“Something I noticed when I left one of the first classes involving the balls on the sitting bones (ischium) and the pillow between our legs was that we felt the same feeling when pedaling, because the sitting bones are also very present and our medial part too.”

“[in] Daily activities that were done in a relaxed way, today I can see the importance of class and body care. The incorrect way of lying down and the wrong way of stepping, which could later lead to several greater deficits.”

“Today I can see that I didn’t inhabit my body, I just used it (...) With the sensations that are provided by the classes, my body seems more alive and better supported.”

“Breathing is something that had a lot of impact in my case, as I could see that I was breathing through the chest and not the abdomen, and that this was a classic synonym for being stressed, anxious and not taking time for myself and my body. In addition, I started to understand better how I perform my movements, how sloppy I was in relation to my posture and now I notice every time I am sitting or lying down incorrectly and how this can cause problems in my entire functional and motor system. Another moment [in] that I could understand and realize the impact of the class on my daily life was when I went to the gym: I paid attention to the muscle I was moving in every movement I made, I tried to feel it in a more concentric way and I noticed more about my posture in their execution.”

“The practical activities demonstrated structures of my body that most of the time I didn’t even think were there (...) they showed me a way to make my bone structures more present, so that I can study my body and understand how important it is to feel our bodies; not only areas which are frequently stimulated, such as the hand, arms, feet and legs, but also our spine, the pelvic region, our trapezius, meaning those areas [in] which we can release the fascia.”

“As the classes went on, the results got better, especially in terms of breathing, axial growth and posture.”

“When we put the balls on the ischium (sitting bones), the touch was not deep as we didn’t literally touch the bones, but when we took the balls out, we felt the bone a lot, completely changing our posture, our way of sitting, etc.”

“The difference between the beginning and the end of the class was remarkable, I was much more present.”

“The practices allowed me to attentively perceive parts of my body that were once tacit, taking care of each one of them respecting and knowing their particularities. (...) [they allowed me to perceive] how the distraction is harmful to them and to the body as a whole. Today, I learn from classes as a form of relaxation, intimacy and care.”

“I had the opportunity to observe parts of the body that I really didn’t pay attention to, for example when walking or running, as simple care and attention help to significantly

improve correct movement, cushioning and correct conduct, benefiting all involved parts, such as muscles, joints and nerves.”

By noticing the fixation of movement patterns and postures, which introduce discomfort and tension, the students were able to discriminate them from postures and movements made consciously, with less effort and with less energy expenditure. This perception - as well as questioning about the efficiency of their choices - opened the way to decondition the gesture and for experiencing new alternatives, resulting in an increase in the body repertoire, as explained by Balsanello [13]. According to Lima Cecchini *et al.* [14], the experiences enable recognizing tense areas of the body and the increase in body awareness makes it easier to act to relax the body more effectively.

“In the classes, I not only learned to get to know my body better, but also not to be ashamed of myself, of how I am, and I even came to accept it when I couldn’t do something the way I wanted due to lack of coordination or skill. I understood that I don’t need to be perfect, that in fact there is no such thing as perfection, and that excessive demands can do more harm than good. (...) I could see that there was no right or wrong, I needed to understand my limits and accept them and improve them as much as possible.”

The elements of the Quality of Life subcategory reflect the direct interference of the procedures and their perceptions in daily life, reporting changes in habits, incorporating exercises into the routine and physical and emotional relief. The reports also portray the increase in motor functions, as can be seen in the following excerpts:

“The classes positively impacted me with relaxation and peace when doing physical exercises, so that they didn’t strain my body and still improve my day after a tiring day of work.”

“After classes, I started to live more in my body, I started to practice physical exercises, stretching daily, sleeping better and my diet is also moving towards being better.”

“The experiences impacted me helping me to add certain exercises to my daily life, things that must be done, and even to change some habits that were done incorrectly.”

“I have problems with my joints and the experiences were essential to strengthening them and for relaxation as well. My joints became more resistant, and I had less pain from the ball and broomstick exercises.”

“Today I reserve essential time at night to do the experiences I learned in class.”

“Since I started the Body Experience classes, I started to take more care of my body and have the privilege of being available on a day-to-day basis, and at night being able to get a good night’s sleep.”

“During this time in quarantine, the exercises I learned helped me (sic) a lot, my days ended up becoming more productive as after my body relaxed after an exhausting day, I woke up ready for another day renewed.”

“The practical experiences carried out in the classes made my body feel lighter, looser, relaxed, getting better and easier to develop the movements of the exercises I practice every day.”

“I started to practice everything I saw in class on a daily basis and felt lighter before doing some physical activity; I improved my posture, I started to feel my body more present than before.”

“Each experience, a different feeling. (...) It makes my days more relaxing as my body was extremely tired, and, today, I am more proactive for its well-being. No longer feeling the tiredness and the effort I used to do simple activities before classes.”

“With the realization of the practices I started to feel my body more; the day after class I woke up relaxed, I started to stretch my foot and I shared this stretch with my parents, thus reducing the pain in their feet, I started to stretch every day, because I saw the benefits, I started to pay attention when going to the bathroom. (...), changing habits and starting to create new ones, trying to practice physical activities, improving nutrition, trying to have a steady sleep, and doing daily stretches.”

Testimonials like these are also found in the work of Bretas *et al.* [12] and Lima Cecchini *et al.* [14]. Self-care skills, changes in habits and emotional response patterns are reported by participants in the study by Mehling *et al.* [4] and appear as a quality that should continue to be practiced.

The Relationship with the other category contains the parts of the statements in which students develop reasoning about interaction with other individuals based on new perceptions of their own bodies, obtained through the experiences lived in the classroom. In this category, words such as empathy, responsibility and respect emerged. According to their reports, students were able to share these experiences with other people, such as family, friends or university colleagues, obtaining good results.

“I tried to put it into practice with other people, I tried to understand the difficulty of each one, I found that a simple movement changed their daily lives a lot.”

“Treat others as well as yourself with responsibility, empathy and love, these are the three basic topics that (sic) I learned to have in class.”

“I learned to teach classes more patiently and pass on to my little dancers what I learned. I started to reflect with them, make them less agitated and more focused.”

The study by Mehling *et al.* [4] also found that the participants' relationship with other individuals changed with therapy and attributed this change to better self-ownership. In addition, these researchers mention that the experience provides greater openness and rapport among the participants, providing an environment which favors

exchange, better interaction and socialization in the group. These findings also occur in the study by Bretas *et al.* [12], and were also verified in this study:

“There was an activity in which you should wake up one of your colleagues and give them a hug, providing a closer relationship with the colleagues and a welcoming moment.”

“The bodily experiences have shown that I must help whoever is in need and when I need someone I wait for the same. I learned to share experiences with classmates and external people (family, friends, acquaintances).”

The Relationship with Physiotherapy category sought to draw the parallel made by students between their bodily experiences and physiotherapy from their own role in the dynamics to points on learning and how practical classes managed to translate the concepts learned.

Regarding the therapist-patient relationship, there was a concern about understanding the body processes and in the body itself in all the statements, meaning in itself, to be able to have references and transmit the same sensations to future patients. The following are excerpts from some of the testimonies that revealed this care:

“As the classes went by, it became more and more understandable to include this subject in our course schedule. Being a future physiotherapist goes far beyond taking care of people. It’s also about taking care of ourselves. I follow the principle that there is no such thing as taking care of the other if we don’t know how to take care of ourselves first.”

“Learning to help in the best way is always first looking at yourself and the more you find out about your body, the easier it is to observe and help someone else.”

“Before classes I didn’t have this thought of inhabiting my body, however, now I’m absolutely sure it’s something important, especially for us who chose this course, and we’ll have to transmit all this knowledge to our patients.”

“Having this practice was essential to understand how my body works, what I feel and see in it, in order to be able to understand the other person in the future, and to be able to make them feel what I could have as an experience.”

“I could see it in class, especially when I had to do all the procedures on someone else, at that moment I realized how much I needed to be aware of all this to be able to make the person feel the same well-being that I could feel when it was with me.”

This perception also happens with Nursing students in the study by Bretas *et al.* [12], when he says that the best body perception on the part of the therapist outlines references for better understanding of the patient, taking them out of the condition of objectification.

Regarding learning, and corroborating the study by Bretas *et al.* [12], students reported a better association of theoretical contents when they are experienced, or perceived, in their own bodies. This feeling, which is also given emotional meaning, thus becomes a pathway to learning, as the students reported in this study.

“In the other classes we have at the Faculty, we know our body structurally and try to imagine how it all fits in us (...) the experiences were felt, we put all the parts to really work, it was something that came from the outside to the inside and even though the touch was the most superficial it requires the most attention and that makes it have a real and profound impact on us.”

“In the bodily experiences classes, in addition to using some theories and knowledge that we have acquired in other classes, we are also able to understand our bodies in personal practice and, for sure, passing this on to another person will be even more complete, efficient and human.”

“It’s content I’ve never tried, and I’d like to see there continue to be classes that have concepts of modalities like this, where we can interact, learn, enjoy the results in our own bodies and in a fun and didactic way.”

These reports corroborate what Barradell [5] states about the need for new approaches in teaching physiotherapy, implementing approaches which promote different ways of obtaining knowledge, development of identity and collective practices. According to Barradell [5], these approaches must result from recognizing the complex relationship between knowing and knowing how, valuing a culture where it is created, where it is shared and where new and different forms of knowledge are used. From this perspective, physiotherapy teaching will no longer be practice-oriented and will become practice-based.

Students in the present study also highlighted the need for emotional and physical engagement in learning processes, which means that not only the mind, but also the student’s body must be present and participatory:

“The experiences brought a perception about my body that is movement, deconstructing already formed conceptions and introducing a different look, a look of transformation, I started to look at myself from the inside out, look at learning. That’s when I managed to analyze that being part of this movement is making the body essential for learning experiences.”

“The first thing I thought when reading this question was the clear difference in listening to the teacher describe what we should feel doing a movement in class compared to the moment when I myself performed the movement and could feel my body acting and responding with actions and sensations.”

The Relationship with pain category was created in this study because, although pain is an afference, a sensation, it is important to report how the students' body perception before the body experiences classes was only linked to the presence of this sensation or to pathological processes, as can be seen in the excerpts:

"The practical experiences [had] an impact on the attention we do not give to our bodies due to the daily rush, causing us to unintentionally divert this attention and only "remember" when we trigger some kind of pain or discomfort in a certain region of the body."

"One point that goes unnoticed is our own breathing. We only notice it when we have a cold, the flu. Today, after the body experience classes, I understand and do it every day. It's body relaxation."

As a result of their research, Mehling *et al.* [4] point out that it is pain and other symptoms which lead patients to seek somatic education techniques such as therapy.

After the body experience procedures, students who used to feel a lot of pain reported a decrease in these sensations. They also mentioned autonomy and proactivity to solve the problem when they practiced the exercises proposed in the experiences in their daily lives and when they showed interest in sharing the benefits of the practice with others.

"The practices carried out during the classes had a good result for my body, helping to eliminate pain or local discomfort."

"I was able to stand for longer which was very difficult before, I felt pain in the hip region and in the dorsal region of the spine, I was able to sleep better without feeling so much pain during the night. I started to sit without difficulty, before I could not do it for a long time, I felt back pain and I always ended up lying down."

"I don't feel pain in my feet anymore, and my parents' pain has also diminished from sharing what I have learned."

"I really see that most of the pain we feel in our bodies comes from everyday incorrect posture."

"Another form of impact that occurred was [on] the body aches I felt, now I often do some exercises that I learned when I feel back or postural pain, which help me a lot."

"Before classes I didn't take certain care with some parts of my body, after we started taking the Body Experience class, my body totally changed, especially at bedtime, when I felt low back pain, but after practical classes and the Teacher's advice, I had good improvement in my low back pain."

"The practices had a great impact on the understanding of my body, especially the part of perception of the movements of the shoulder girdle, in which some movements caused me pain when performing."

This relationship between somatic education practices and pain relief was also found in the investigation by Lima Cecchini *et al.* [14], according to which all Physical Therapy students who participated in the study reported decreased pain sensation after engaging in the activity. The desire to pass on knowledge found in the study by those authors was also mentioned by the participants of this study.

Although one of the pillars of this study is body perception as an instance of oneself, the Relationship with the body category appears separate from the Relationship with yourself category, as the body was cited in many reports as an object foreign to itself, an object of which if it makes use. It was common to find a dissociation of what the participants called problems and deficits of the body itself as limitations of themselves in the testimonies. The lack of association between the body's needs and their own needs was also common. They did not realize that helping/improving their own body is actually helping/improving themselves. These findings pointed to the fact that despite an increase in the perception of one's own body, there is no appropriation or incorporation of it. Examples of this dissociation appear in the following excerpts:

“Through the practices I was able to assess certain limitations in my body such as lack of general flexibility from the sole of the foot to the back of the leg.”

“I got to know better about my own body and different ways of how to ‘help’ it to adapt better in different situations.”

“I didn’t take some care with it [my body] in some parts, but then after the classes I had with the teacher, I started to be more careful and that helped me in my daily life, as in the way I walk, stepping on the ground.”

“I learned that the body needs time for it, that it is important to calm it down and respect it, which made me reflect a lot, disconnect my body a little from the acceleration that daily tasks overload it.”

“I got to know my body better, I started to realize what it asks for, its importance, and especially to take care of it more gently.”

“The practice of movements had a positive impact, as I gained a broader knowledge of my body, leaving it much lighter and looser after the exercises.”

“Thanks to the classes given, I was able to acquire a much greater perception of my body and thus be able to understand it better, consequently being able to take better care of it and in the future take care of other peoples’ bodies.”

“The experiences not only affected my body, but also the way I relate to it.”

Although in many testimonies it was possible to observe a line of reasoning that was still dichotomous in body/mind, it was also possible to verify that this practice started a more unified and integral orientation of the being:

“I started to value my body more (...) I started to feel my body more present than before.”

“The bodily experience showed how the body works together with the mind and that one depends on the other for balance.”

“Knowing our own body and better understanding the importance of being part of it and not just being part of it, made us see things that in everyday life are forgotten and go unnoticed.”

“This discipline taught me to live better with my body, to leave my body as a whole in a more complete and present way.”

This dissociation between body and mind is also brought up in the research by Mehling *et al.* [4] in which somatic therapists show concern with the expression of body awareness, as it emphasizes the physical aspect. The term embodiment conveys the idea of appropriating the body as an incorporation of the mind. The patients interviewed in that study have at least six months of practice and report the experience of this incorporation into their lives, demonstrating the need for practice, repetition, and training for the integration process.

As limitations of this study, we highlight the refusal of 40 of the 78 students to participate in this research, which, despite being confidential, may have caused discomfort since the students' tests would be analyzed. Even though the grades are not considered a failing factor, some students may have felt inclined to write about a positive impact in the assessments. In addition, the expanded body perception and the discussion about the sensations found is an exercise that needs constant practice so that, at each stage, the student can better translate their new discoveries into words. As it is the first contact of most students with this type of study, many were unable to accurately and clearly elaborate their perceptions of their learning. A point to be highlighted is also that the same bodily perception can be reported in quite different ways, such as what happens with heart attack pain, which can be described as feeling a stab wound to the chest or as a feeling of anguish and deep sadness.

Conclusion

With this study, it was possible to conclude that the tools used in the “Body Experience and Motor Coordination” classes enabled students to experience the body in a different way than usual, with greater sophistication and attention to themselves. Intimate contact with the body and the perception of previously neglected functions, such as breathing, contributed to the students obtaining self-control strategies and relief from physical and emotional tension, implying a positive impact on their lives and bodies.

Regarding physiotherapy, the study showed that experiences with an emphasis on somatic education broaden the reflection about the body, both as an instance of oneself and in relation to the treatment and care of the other's body. The theoretical-practical experience added to this reflection mobilizes a new way of access to learning, which suggests a different approach for teaching the contents studied in the health area.

Conflicts of interest

There are no conflicts of interest to report.

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Authors' contributions

Research conception and design: Lemos M, Oliveira C; *Data collection:* Lemos, M; *Data analysis and interpretation:* Lemos M, Oliveira C, Portolez JL; *Statistical analysis:* Lemos M, Oliveira C; *Manuscript writing:* Lemos M; *Critical review of important intellectual content of the manuscript:* Batista PA, Oliveira C.

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