

Student profile: motivations, contributions and barriers to engage in extracurricular activities.

Achar-Fujii Renata Nunes ^{1 2}, Kobayasi Renata¹, Enns Sylvia Claassen¹, Tempski Patricia Zen¹

Declarations:

Ethics approval and consent to participate

The project was carried out in accordance with relevant guidelines and was submitted to the Research Ethics Committee (CEP) from São Paulo University (USP) and approved without restrictions (CAAE: 99776718.4.0000.0065). Participation was voluntary, and we did not offer any compensation or incentive. We guaranteed both confidentiality and anonymity, and participating students completed an informed consent form.

Consent for publication

Not applicable.

Availability of data and materials

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

RNAF participated in the conception and design of the study, carried out the data acquisition, participated in the analysis and interpretation of data and drafted the manuscript. PT, SCE and RK participated in the conception and design of the study and in the analysis and interpretation of data. PT and SCE critically reviewed the manuscript. All authors discussed the data analysis several times and read and approved the final manuscript.

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Author details 1 Universidade de São Paulo, Av. Dr. Arnaldo, 455 – Cerqueira César, São Paulo, SP 01246-903, Brazil. 2 Universidade Municipal de São Caetano do Sul, Rua Santo Antônio, 50 – São Caetano do Sul-São Paulo, SCS 09521-160, Brazil.

Authors' information

Center for Development of Medical Education, School of Medicine of University of Sao Paulo, Sao Paulo, Brazil

Sylvia C. Enns, Patricia Z. Tempski

Municipal University of São Caetano do Sul – São Caetano do Sul, Brazil

Renata N. Achar Fujii

Corresponding author

Correspondence to Sylvia Claassen Enns.

Abstracts

- **Background:** Extracurricular activities in medical education and are defined as any social, philanthropic, non-mandatory and unpaid activity. Some of these activities allow students to interact with the community providing care, learning and experiences for both. The purpose of this study is to describe the motivational aspects, the learnings and the barriers involved in the practice of these activities.
- **Methods:** This is a cross-sectional study with medical students attending the first to the fifth year of medicine. We used qualitative and quantitative analyses to understand the motivating aspects, barriers and contributions involved in the practice of extracurricular activities.
- **Results:** Of the 586 students regularly enrolled in the medical course, 462 students accepted to participate in the research (Response rate: 78.43%), with 159 male students (34, 4%) and 303 female students (65.6%). Most of medical students (58,01%) participate in extracurricular activities with less participation during the first year (10,9%) and internship (35,4%). Among the motivating factors, students reported the desire to contribute to society, support their professional choice and learning. The students mentioned as learnings: integration of knowledge, life experiences, and development of communication, teamwork, leadership, responsibility, empathy and resilience. The barriers mentioned were the limited spots, the selection, the lack of support from those involved, personal, time management and possible losses in academic performance, physical and financial resources.
- **Conclusion:** Extracurricular activities allow medical students to develop skills and attitudes that are important to their future as a doctor. Students are motivated to participate in these activities to contribute to society, support their future professional choice and improve their learning.

- **Keywords:** Extracurricular activities, Quality of life; education, medical; students, medical; Community-Institutional Relations

Background

Extracurricular activities are among the biggest interests of medical students [1] and are defined as any social, philanthropic, non-mandatory and unpaid activity such as: music, physical activity, volunteer work, academic leagues, congresses, etc [2,3]. Some of these activities allow students to interact with the community providing learning and development experiences for both.

Associated with teaching and research these extracurricular activities in community assist medical training in a human way, unfortunately, students are usually, very concerned with scientific updating during graduation and neglect the development of other important skills and attitudes for a future humanized care [4]. Thus teaching would be linked to the reproduction of knowledge, research would be science in movement and extracurricular activities in community would provide the execution of knowledge generated by teaching and research [5].

These activities can be organized by universities or by academic leagues, making its activities always directed to attend the demand of the student's interests and the needs of the society in which it is inserted.

In addition to teaching and research, the academic leagues of the Municipal University of São Caetano do Sul follow the principle of interaction with the community. So the purpose of this study is to characterize and describe the motivating and demotivating factors related to academic practice in extracurricular activities in community, as well as identifying the contributions that these activities bring to the student development.

Methods

Study design

This qualitative cross-sectional study was conducted in 2018 using narratives of medical students from the School of Medicine of the Municipal University of São Caetano. Participation was voluntary, and anonymity was guaranteed. Access to the results was also guaranteed. There was no monetary compensation or any advantage in participating, and the refusal to participate did not result in loss or damage of any nature. The project was submitted to the Research Ethics Committee (CEP) from São Paulo University (USP) and approved without restrictions (CAAE: 99776718.4.0000.0065).

Participants

All medical students (586) from the School of Medicine of the Municipal University of São Caetano were invited by the researcher of this study to participate at the end of curricular activities to fill out a sociodemographic questionnaire and to write their answers for three open questions.

Instruments

The sociodemographic questionnaire contained questions about sex, age graduation year and questions about which extracurricular activities linked to the community the students participated, if there was any specialty that the student already wanted for the future.

The questionnaire had also three open questions: "What was your motivation to participate in these activities?"; "What lessons do you get from these activities?"; "What barriers hinder your participation in these activities?". So the students should answer about their motivations, learnings, and the barriers faced by participating or not in these extracurricular activities.

Data analysis

For the qualitative analysis, the Content Analysis (Bardin) was used [6]. It consists of a set of systematic and objective techniques and procedures for describing the contents, in a way that allows the categorization, elaboration of inferences, and interpretation of the data. The qualitative analysis of the answers by two researchers of the study, followed traditional content analysis methods, that is preparation of the material (typing of the answers of the open questions and organization of the data), free reading, highlighting subjects by relevance and/or repetition, categorization of the emerging categories and derived issues, discussion with all members of the research group, and a descriptive presentation of the results using quotes from the participants answers. The COREQ Consolidate criteria for reporting qualitative research protocol was used to ensure the quality criteria of these study [7] (Supplementary files).

Results

The initial sample of this study had 586 students (200 males and 386 females) enrolled in the Medical school of the Municipal University of São Caetano do Sul. The study included data from 462 participants (Response rate 78,43%): 303 females (65.6%) and 159 males (34.4%). From the first year, 110 students agreed to participate in the research (23.80%), 29 male students (26.4%) and 81 female students (73.6%). In the second year, 91 students participated (19.69). % with 37 male students (40.7%) and 54 female students (59.3%), 90 third year students (19.48%) and 31 male students (34.4%) and 59 female students (65.6%), 89 fourth year students (19.26%), 34 male students (38.2%) and 55 female students (61.8%), 82 fifth year students (17.74%), 28 male students (34.1%) and 54 female students (65.9%) The participants' ages ranged from 17 to 45 years, with an average age of 22.72 years.

Among the students, 194 (41.99%) do not participate in extracurricular activities, 63 male students and 131 female students, while 268 (58.01%) students participate in these activities, 96 male students and 172 female students.

In the first year, 98 students (89.1%) do not participate in extracurricular activities and 12 students (10.9%) participate, in the second year, 37 students (40.7 %) do not participate in extracurricular activities and 54 students (59.3%) participate, in the third year 20 students (22.2%) do not participate in extracurricular activities

and 70 students (77.8%) participate in extracurricular activities, in the fourth year 10 students (11.2 %) do not participate in extracurricular activities and 79 (88.8%) participate in extracurricular activities, in the fifth year 29 students (35.4%) do not participate in extracurricular activities and 53 (64.6%) participate in extracurricular activities.

The questions showed three central themes: motivations, learnings and barriers related to the practice of extracurricular activities. Within these themes the responses were categorized and subdivided into items and the answers were transcribed in the examples of each category and items.

In the theme area motivation, students answered that the contribution, related to society, is an important point for participation in extracurricular activities, with the possibility of helping the community in some way. Academics also understand that the professional choice is part of the motivation since they find in these activities the possibility of knowing different specialties. Other motivation is that these activities help to complement the course, as we can see in the response of a 22-year-old student of the fourth year:

"My motivation is to deepen my knowledge on subjects that I believe are quickly addressed in the graduation".

Other motivating items included were to have life experiences and personal development, as the answer of a 20years-old student from the second year:

"To be able to grow and to improve as a person and as a professional". 20 years old, 2nd year.

They also pointed out as a motivation the academic development that was divided into the items: personal curriculum, mainly because of the impact that these activities cause for Medical Residence selection process, and the necessity to accumulate extracurricular hours in the course. Social interaction was also mentioned by the students as a motivating factor, since participation in extracurricular activities allows students to have contact with teachers and colleagues of medical program. Table 1 includes examples of speeches related to the items and categories described above.

Table 1 - Qualitative analysis of the data produced from the central theme: Motivations

Categories	Items	Exemple of speech
Contribution	Society	"Performing service in society focused on the health area." Male. 23 years old, 3rd year. "Interest in helping those in need." 23 years old, 3rd year.
Professional choice	Know different specialties	<i>"It allows identifying areas of interest for future specialization." Male 24 years old, 3rd year.</i> <i>"At the beginning of my graduation I was in doubt about what specialty to do and I decided to join the activity to find out more about the area and to be able to choose more easily what I could do at the residence." Male 25 years, 5th year.</i>

Learning	Complement the program	<p><i>“Personal and professional development beyond the course” Male 22 years, 3rd year.</i></p> <p><i>“To better deepen my knowledge on subjects that I believe are covered quickly in the graduation.” Female 22 years old 4th year.</i></p>
	Life experiences	<p><i>“Having world experiences” Female 23 years old, 3rd year.</i></p> <p><i>“Living situations outside the college environment.” 22 years old, 2nd year.</i></p>
Academic development	Personal	<i>“To be able to grow and to improve as a person and as a professional”. 20 years old, 2nd year.</i>
	Personal curriculum	<i>“Value in the curriculum for selection on medical residency”, Female 23 years old, 4th year.</i>
	Credits	<p><i>“Earn extra-curricular time” Male. 41 years old, 4th year.</i></p> <p><i>“Accumulate hours of complementary activities”. Male 22 years, 4th year.</i></p>
Social Interaction	Network	<p><i>“Social integration with other students and teachers” Male. 20 years, 2nd year.</i></p> <p><i>“Having my contact with professionals working in the area.” Male 38 years old, 2nd year.</i></p>

The majority of responses were included in the know different specialties category, followed by complement the program, society, personal curriculum, life experiences, personal, credits and network (Fig. 1).

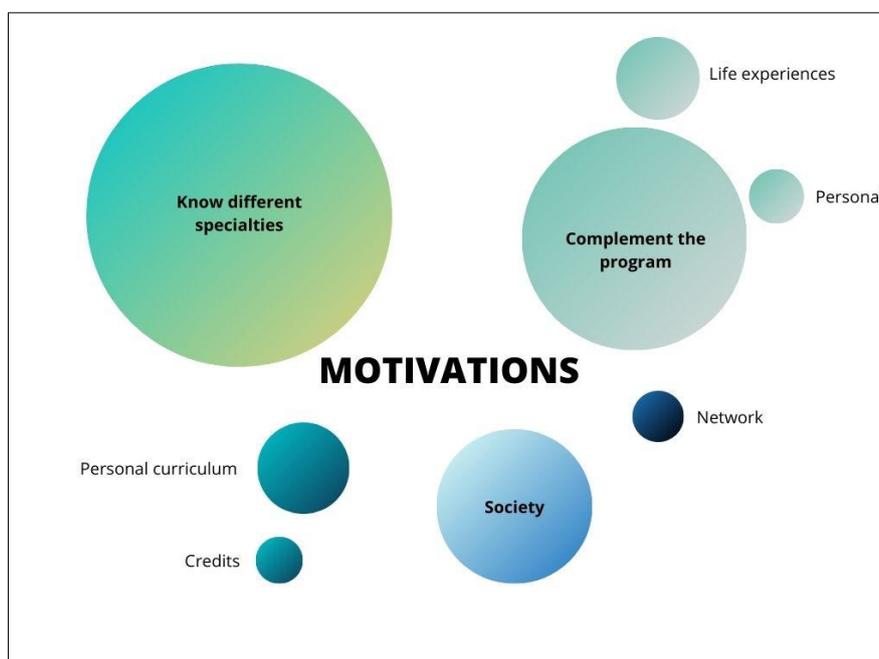


Fig 1- Grafic representation of qualitative data obtained by the open-ended question about motivations. The circles are proportional to the number of responses of each category/issue.

In the theme area learning, students answered that the practice of extracurricular activities enables them to expand and integrate the knowledge of medicine. It was also mentioned about the opportunity to acquire skills such as time management and the ability to communicate as we can see in this speech of a 25-year-old academic from the third year:

"We learned how to pass information more clearly to a population that does not have the technical language"

As extracurricular activities of academic leagues are organized by the students themselves, students mentioned that the practice of these activities contributes to the development of other skills such as organization and teamwork. The students pointed out that through these activities they improve attitudes as leadership, commitment and responsibility. Some academics replied that these activities enable the development of emotional skills as empathy and resilience exemplified in the response of a 23-year-old student of the third year:

'A very important learning was to keep calm when receiving a serious patient'

Other learning would be related to the students' experiences through these activities in the hospital and in the community. Other examples of speech referring to the items and categories described above can be seen in Table 2.

Table 2 - Qualitative analysis of the data produced from the central theme: Learning

Categories	Items	Exemple of speech
Knowledge	Expand	<i>"I am able to deepen the knowledge in the area" Male. 24 years old, 3rd year.</i>
	Integrating	<i>"Develop greater clinical reasoning with the possibility of correlating it with other areas of medicine." Male 24 years, 3rd year</i>
Skills	Time management	<i>"Personal learning, better ability to manage time" Male. 22 years, 3rd year.</i>
	Communication	<i>"I learned to reduce my shyness and to pass on part of my knowledge to other people" Female 19 years old, 3rd year.</i>
		<i>"We learned how to pass information more clearly to a population that doesn't have the technical language" Male 25 years, 3rd year.</i>
	Team work	

		<p><i>"I get to learn how to relate as a team to make decisions about activities" Female 24 years old, 3rd year.</i></p> <p><i>"I learned to deal with the group and to develop ideas as a team" Female 25 years old, 4th year.</i></p> <p><i>"I learned to deal with people who have different opinions." Female 19 years old. 2nd year.</i></p>
	Organization and Leadership	<p><i>"Learning about bureaucratic issues and management" Female 23 years old, 4th year.</i></p>
Attitudes	Commitment	<p><i>"Visits make it possible to acquire a responsible attitude towards the commitment we make." Male 24 years old, 3rd year.</i></p>
	Leadership	<p><i>"I developed leadership " Male. 22 years, 3rd year.</i></p>
Emotional skills	Empathy	<p><i>"I participate on these activities to develop empathy", Female 20 years old, 3rd year.</i></p> <p><i>"I learned to recognize my privilege, to understand the other beyond what he shows, in an integral way" Female 21 years old, 3rd year.</i></p>
	Resilience	<p><i>"A very important learning was to keep calm when receiving a serious patient" Female, 23 years old, 3rd year.</i></p>
Experiences	Hospital environment	<p><i>"I acquire hospital experiences" Female 24 years old, 3rd year.</i></p>
	Community	<p><i>"I learned that information that I thought was basic is not as widespread in community as I thought." 20 years old, 3rd year.</i></p>

The majority of responses were included in the expand knowledge category, followed by community, communication, empathy, team work, hospital environment, integrating knowledge, organization, leadership, commitment, resilience and time management (Fig. 2)

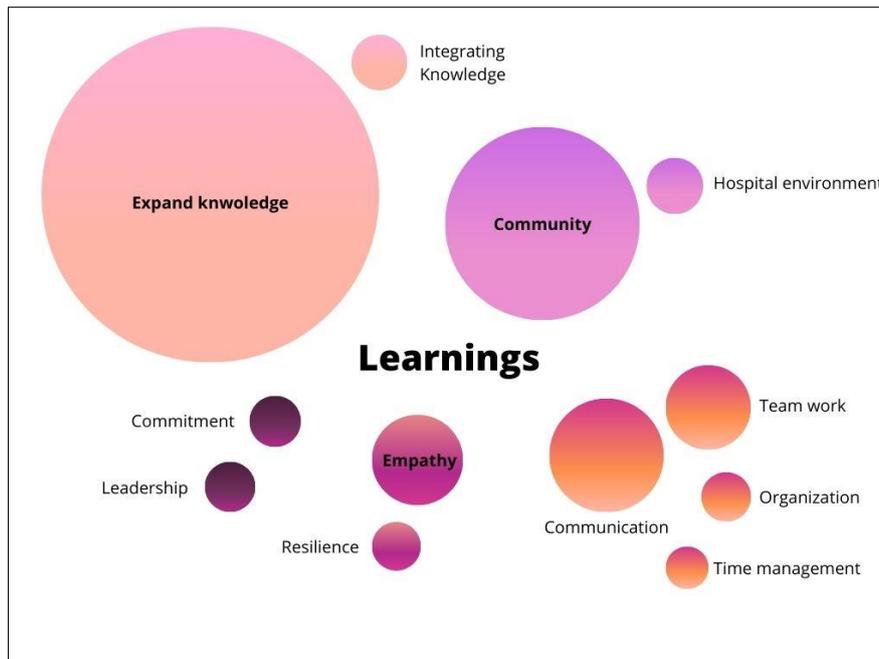


Fig 2- Grafic representation of qualitative data obtained by the open-ended question about learnings. The circles are proportional to the number of responses of each category/issue.

Within the theme area barriers, students understand that the limit of participants in each program is a demotivate factor, as the existence of tests for the selection of members and the failure to organize some activities also are. The students pointed out the lack of support from the college, the community, from partner institutions and from the other students, as a barrier to participate in extracurricular activities, as exemplified in the speeches below:

“The main barrier is when the group that participates doesn’t work to keep doing the activities, overloading other members.” Female, 25 years of the fifth year.

“The institutions do not accept our projects or just accept us in unsustainable conditions (as an unviable number of weekly visits.” Male, 32 years old.

The academics also concern about possible losses in academic performance, since they would spend time in activities and less time studying. Financial losses were also founded as a barrier, and this was not only related to costs of transportation and food, but also because some students need to work in their spare time.

Students described that physical exhaustion, such as tiredness and lack of sleep, also make participation difficult, as the response of a 23-year-old student of the third year:

“Social actions always resulted in a lot of rushing, losing meals or less sleep”.

Other barriers mentioned by students were the personal difficulties with self-displacement and lack of knowledge to follow the activities. The first year students answered that they don’t participate because they are adapting to medical school and to problem-based learning.

Personal indecision to choose which extracurricular activity participate was also among the barriers, as well as the personal difficulty with time management, as the response of a 23-year-old student of the third year:

"The main barrier is the personal difficulty with time management, because sometimes I end up not taking advantage of 100% of what I participate because I have not organized properly"

Other speech examples referring to the items and categories described above can be seen in the following table (Table 3):

Table 3 – Qualitative analysis of the data produced from the central theme: Barriers

Categories	Items	Example of speech
Format	Limit of participants	<i>"Limited number of participants" Female 21 years old, 3rd year. "Some activities are not available for those who are in the beginning of graduation." Male 23 years old, 2nd year.</i>
	Selection	<i>"Tests to enter the programs" Male. 23 years old, 3rd year. "Difficulty entering activities." Female 20 years old, 2nd year.</i>
	Organization	<i>"Disorganization of some practices." Female 20 years old, 3rd year.</i>
Lack of support	From college	<i>"Limited number of programs to participate" Female 23 years old, 4th year.</i>
	From community	<i>"Prejudice and social stigmas regarding mental health and resistance from some people." Female, 23 years old, 3rd year. "Low population adherence" Male. 23 years old, 3rd year.</i>
	From partner institutions	<i>"The institutions do not accept our projects or just accept us in unsustainable conditions (an unviable number of weekly visits)" Male 32 years old, 3rd year. "Sometimes schools don't open their doors, sometimes we have to ask the city hall for permission" Male 25 years, 3rd year.</i>
	From the students	<i>"Lack of collaboration from other participants" Female 21 years old, 4th year.</i>

		<i>"Teamwork since many people who are in the programs do not have extra time available"</i> <i>Female 20 years old, 3rd year.</i>
Losses	Academic achievement	<i>"I don't want to compromise my academic performance." Female 28 years old, 4th year.</i> <i>"Compromise the time to study." Female, 23 years old, 4th year.</i> <i>"It makes me wonder if I'm going to be able to do the curricular and extracurricular tasks with the same performance" Female 22 years old, 2nd year.</i>
	Financial	<i>"Lack of money" Female 20 years old, 3rd year.</i> <i>"I just don't participate in more extracurricular activities because I need to work to help with the financial issue". Female 23 years old, 4th year.</i>
	Physical	<i>"Social actions always resulted in a lot of rushing, losing meals or less sleep." Female, 23 years old, 3rd year.</i> <i>"Tiredness, collective stress and physical exhaustion." Male 22 years, 3rd year.</i>
Personal	Displacement	<i>"Difficulty for my participation is related to where I live (far away)" Male. 23 years old, 3rd year.</i>
	Perception of disability	<i>"For participating mainly in activities that naturally I have less learning, the biggest barrier was the initial contact with the subject" Male 29 years, 4th year.</i> <i>"The main barrier is because I think the activities have a much more advanced content." Female, 20 years old, 1st year.</i>
	Adaptation phase	<i>"I am currently in the first semester and adapting to the course and method so I did not start my participation in extracurricular activities" Female, 19 year old, 1st year.</i>
	Indecision	<i>"I don't participate in any extracurricular activities because I don't know which one." Female 21 years old, 1st year.</i> <i>"The indecision of which activity is most similar to my profile and my interests." Male 20 years, 2nd year.</i>

Time management
"My difficulty in properly manage time between study time, tasks and other activities" Female 24 years old. 3rd year
"The main barrier is the personal difficulty with time management, because sometimes I end up not taking advantage of 100% of what I participate because I have not organized properly"" Female, 23 year old, 3rd year.

The majority of responses were included in the time management category, followed by displacement, physical, limit of participants, perception of disability, adaptation, financial, institutions, organization, academic achievement, students, college, selection, community and indecision (Fig. 3)

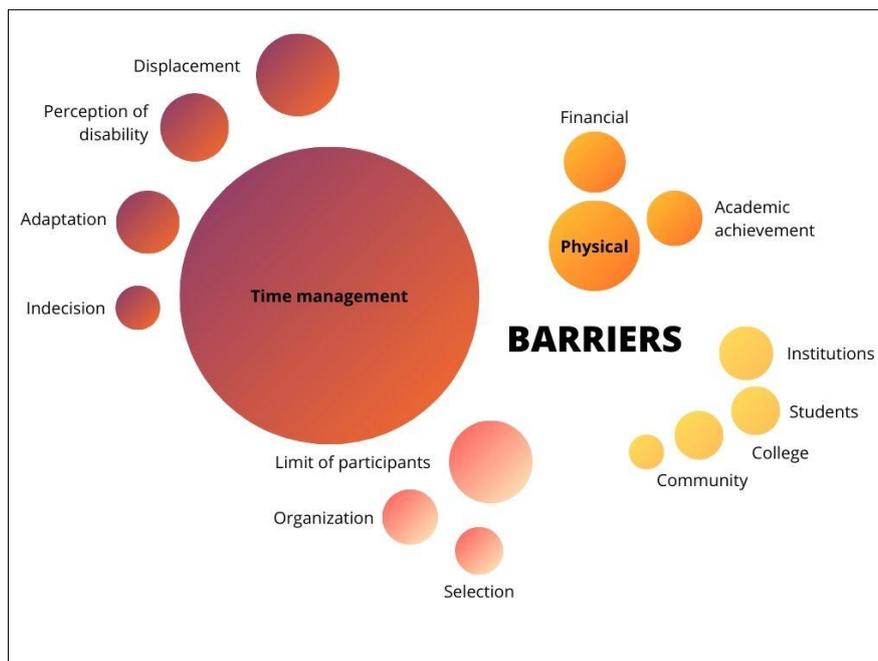


Fig 3- Grafic representation of qualitative data obtained by the open-ended question about barriers. The circles are proportional to the number of responses of each category/issue.

Discussion

In our study most students (58%) are interested in participating in extracurricular activities, with less participation among first-year academics (10.9%) and increased during the following years, reaching 88.8% participation among fourth year students.

As already described in the literature, this study pointed that medical students are motivated to participate in extracurricular activities because of the desire for credits and curriculum improvement [1,3, 8, 9, 10, 11, 12]. Students also present the desire to help society as a motivating factor to participate in these extracurricular activities. It is interesting to realize that the desire to help people

is the reason why many students choose medicine as a profession, but often they deepen in biological concepts, centered on technique and end up losing sight all the patients universe [13]. Extracurricular activities linked to the community allows the academics to maintain this desire to help throughout the entire graduation and teaches students the importance of carefully listen to the patient.

Other important motivations mentioned were the possibility to have experiences and personal learning helping students as individuals and professionals. Outside the walls of institution, this experiences allows the student to see beyond their own universe, reflect on their values and internalize, adopt and practice values in the future. Silveira et al, 2015 demonstrated that students who participate in extracurricular activities in community presented more frequently the high level in the affective domain that exactly corresponds to internalization [14]. In addition, these students also showed a high cognitive level corresponding to the synthesis capacity, while students who do not practice these activities remained in the lowest taxonomy [15] strictly to knowledge. Lins et al, 2014 mention that extracurricular activities in society promote integration between teachers, students and the community, allowing them to share and exchange knowledge [16].

According to Cohen and Sherif, 2014 human values include honesty, integrity, care, compassion, altruism, empathy and respect for oneself, for patients, for their peers and for other professionals involved in care [17]. We can easily see that many of these skills and competences were mentioned as learnings acquired through the practice of extracurricular activities in community.

It is important to emphasize that only practical experience develop skills and attitudes, so after completing the graduation exclusive within the walls of the university, professionals should not be expected, to automatically exercise their citizenship and social commitment [18, 19]. It is necessary that the student change the purely technical training to experience the reality in places for reflection [12]. By practicing these activities students can understand that for their good professional performance it is not enough to read books and study cells, it is essential to leave the university walls and experience the reality of the community, it is from the exposure to social complexity that they develop the ability to work with the context of the moment [19].

Extracurricular activities in community insert real life in higher education and create spaces for the benefit of the community [5]. Thus it will be possible to understand that health is not only the absence of disease, with a restricted view of the biological body, but is the good integration of biological, social, cultural, economic, political and historical dimensions of an individual.

According to Paulo Freire, an educator and philosopher recognized for his work in adult education: "Nobody educates anyone, nobody educates themselves, men educate themselves, mediated by the world". It is mutual, to someone teach the other, initially it is necessary to learn from him.

According to Lins et al, 2014 the confrontation with the reality allows students to learn, for example, that the low level of information on the prevention of certain pathologies causes individuals to be affected by them. In this way, extracurricular activities in community can contribute to the democratization of knowledge and students can act in their surroundings, as multipliers of knowledge causing an impact on public health through the articulation between the theory learned and the practice performed [16]. It is clear that these activities can contribute to the advancement of local education, based on the principle that students discover the knowledge gaps in the surrounding community.

Some emotional skills such as empathy and resilience were mentioned as lessons learned from the practice of extracurricular activities in community. Almeida & Barbosa, 2019, reinforce that empathy is the social aptitude to understand the feelings of others and the adoption of their perspective, with respect to the differences in the way people face the situations experienced [19]. From the answers we realized that these activities allow the student to experience emotions when they see the reality of others or when they reflect on their own privileges, or when they are surprised by unexpected events of daily life.

When understanding the emotions and rationales that make up the culture in which we are immersed, new practices can be unveiled contributing to what society expects from a competent professional [20]. Humanization cannot be developed when the professional has already established his or her way of acting, it must start in the teaching environment [13]. The empathy that comes from social contact also corroborates for students to work in favor of a more just and egalitarian society [16] and solidify the desire of a democratic public health capable of seeing minorities [21].

In addition to expanding knowledge, students mentioned that extracurricular activities made it possible to integrate knowledge. It is very important to realize that these activities are able to integrate all areas of health and may include several university courses for the benefit of all people involved, they are true oases in a context of professional training in relation to interdisciplinarity [22]. However, only assistance activities can be ineffective for comprehensive training, because these assistance activities end up not committing themselves so much to the social reality and to the integrality in health actions [22]. When detached from the social look, these activities remain cast in a biologics' perspective, the individuals of community are only recipients of the university [5].

Students also reported personal maturation, the possibility to deepening the knowledge learned on classes and the wake up to socioeconomic difficulties and other social differences from the reality they were used to.

The literature points to the relevance of these activities for the development of communication skills [10, 13, 23, 24, 25, 26]. Being able to make information clearly understood by others is a skill that needs practice. Sometimes it will be necessary to learn the language of a region to be able to establish a productive link between doctor and patient [27]. Almeida & Barbosa, 2019 also refer that

extension activities are able to develop in the student the ability to listen and understand [19].

However, in order for students to take advantage of all their learning, it is necessary to help in the barriers that hinder the student's entry into these programs. An important barrier mentioned by students is the lack of support in all possible spheres involved at these activities. This reinforces the proposal by Cohen and Sherif, 2014 about the need for a joint effort by teachers, institution directors, health managers, preceptors and students to change the profile of trained medical professionals [17]. The extracurricular activity in community is unlikely to be carried out efficiently if there is not a well-articulated gear between everyone who recognizes the benefits that these activities bring to those involved.

Another barrier mentioned exclusively by first year students was related to the perception of disability to enter the programs. In these cases, activities such as play therapy, clown therapy and music therapy could allow students to participate in this early academic and community's life. In addition, tests for entry into extension programs were also mentioned as a demotivating factor for student participation. Amorim & Bedaque, 2018 share that students are motivated to participate in actions that only require the demonstration of will and responsibility through a letter of interest [10].

The insertion in extracurricular activities in community contributes to the formation of knowledge, skills and competences essential for a good medical education. By being aware of the barriers that hinder students' participation, medical schools can work together with academic centers in a way that these demotivating factors are minimized and students can get the best of the extracurricular experience.

This study showed great adherence by students with a balanced sample between genders, but there were no students attending the sixth year of medicine during the research period.

Conclusions

In this study medical students are motivated to participate in extracurricular activities to contribute to society, support their professional choice and improve their learning.

Extracurricular activities in the community enable medical students to expand the knowledge of medicine, and help students to acquire skills such as time management and the communication ability. The practice of these activities contributes to the development of many competences as organization and collaboration. Through these activities academics can improve attitudes as leadership, commitment and responsibility. It allows students to have experiences and developing emotional skills as empathy and resilience.

List of abbreviations

Municipal University of São Caetano do Sul -USCS

National Curricular Guidelines - CNES

Research Ethics Committee - CEP

São Paulo University – USP

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