

Analysis of the experiences with scientific initiations of medical students from the Campus São Paulo/UNIFESP

Análise das experiências em iniciações científicas de estudantes de medicina do Campus São Paulo/UNIFESP

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ABSTRACT: Scientific initiations are the first opportunity that medical students have to experience research and are central in the development of critical thinking and decision-making skills, regardless of some difficulties like lack of time and adequate orientation. The objectives were to analyze the experiences that medical students from the Universidade Federal de São Paulo (Unifesp) had with their scientific initiation projects and to identify good and bad aspects of this program in our university. Medical students from all grades of Unifesp were asked to write anonymously, using an online platform (RedCap), a report about their experiences with their scientific initiation projects. The texts were read and divided into categories regarding general experience and into subcategories regarding motivations, benefits, and difficulties cited by the students. We received 71 responses, 60 reporting good experiences with research and 11 reporting bad experiences. The main benefits cited were contact with the scientific method and personal development. The main difficulties were a conflicted relationship with the supervisor researcher and lack of time. The main motivations were the contact with an area of interest and curriculum enrichment. The majority of students reported a good experience with their projects. The scientific project allows the students to practice the scientific method, critical thinking and to improve personal skills, like teamwork and time management. A good relationship with the supervisor is important, once the students, due to lack of experience, don't have the capability to conduct research by themselves. To conciliate research with the medical undergraduate is challenging, creating a discussion of how the medical schools could incorporate research into their official curriculum. The curriculum enrichment motivation denotes worry about the residency selection process, which can create a feeling of obligation for the engagement in research, leading to disappointment with the academic world and non-significant outcomes.

Keywords: Research; Science; Narration; Students, medicine.

RESUMO: Iniciações científicas são o primeiro contato dos estudantes de medicina com a pesquisa e são centrais no desenvolvimento do pensamento crítico e de habilidades pessoais, apesar de dificuldades como falta de tempo e de orientação apropriada. Os objetivos foram analisar as experiências que estudantes de medicina Universidade Federal de São Paulo (Unifesp) tiveram com seus projetos de iniciação científica e identificar aspectos positivos e negativos desse programa nesta universidade. Estudantes de medicina da Unifesp de todos os anos foram convidados a escrever anonimamente, utilizando a plataforma online RedCap, um relato sobre suas experiências com projetos de iniciação científica. Os textos foram lidos e divididos em categorias relativas a experiência geral e em subcategorias relativas aos benefícios, dificuldades e motivações presentes nos relatos. Foram analisadas 71 respostas, sendo que 60 relataram uma boa experiência em seus projetos e 11, uma experiência ruim. Os principais benefícios citados foram contato com o método científico e desenvolvimento pessoal. As principais dificuldades foram um relacionamento conflituoso com o orientador e a falta de tempo. As principais motivações foram o contato com uma área de interesse e o enriquecimento curricular. Desenvolver um projeto permite praticar o método científico, estimula o pensamento crítico e a melhoria de habilidades pessoais, como trabalho em equipe e gerenciamento de tempo. Um bom relacionamento com o orientador é importante, uma vez que os estudantes, devido à falta de experiência, não têm a capacidade de conduzir as pesquisas sozinhos. Conciliar os projetos com a graduação é uma dificuldade, gerando a discussão de como as faculdades de medicina poderiam incorporar a iniciação científica no currículo oficial. A motivação pelo enriquecimento curricular mostra preocupação com o processo de seleção para a residência médica, podendo criar um sentimento de obrigatoriedade de engajamento em pesquisa, gerando decepção com o meio acadêmico e resultados pouco significativos.

Descritores: Pesquisa; Ciência; Narração; Estudantes de medicina.

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INTRODUCTION

A scientific initiation is defined as an experience of practical contact with the scientific research scenario, done by an undergraduate student under the guidance of a supervisor, allowing him/her to learn the scientific method and have an involvement with the academic field, with or without financial support.

Experiences of undergraduate students with research in Brazilian universities started in the 1940s, but the institutionalization of this practice happened in 1951 with the foundation of the Nacional Council of Scientific and Technological Development (CNPq), that started to finance undergraduate research projects, what is, nowadays, also done by the Research Support Foundations (FAPESP, for example) and other sources of financial support. This practice has expanded since the creation of the Institutional Program of Scientific Initiation Scholarships (PIBIC) in 1988 by CNPq, because these scholarships started to be provided directly by the universities and research institutes. PIBIC is, according to the last reports, widely spread across the Brazilian universities^{1,2}. Since its creation, scientific initiation is consolidating itself as an instrument of integration between teaching and research, two central points of Brazilian undergraduate system. Many advantages derive from the engagement in undergraduate research projects: possibility for the student to contact the academic environment and an area of personal interest, the capability of having a critical vision of the scientific production, facilitation of the access in the post-graduation, development of personal abilities like independency and proactiveness^{2,3}. However, many difficulties can emerge during the project: lack of knowledge and/or time to develop the project adequately, problems related to the supervisor and/or theme, limited financial support, poor guidance provided by the university and problems of infrastructure².

Specifically about medical schools, the “National Guideline of Medical Curriculum” cites the necessity to develop extracurricular activities during undergraduate and an example of those is the scientific initiation⁴. Medicine offers broad contact with research fields that receive a lot of investment and that can generate big social impacts. Moreover, some abilities previously cited that are developed during undergraduate research programs, for example, discerning valid scientific information from the inconsistent one, are essential to the future physician¹. In spite of that, there are no structured and institutionalized Brazilian projects in order to attract medical students to research, which is different in other countries like Norway⁵. This fact, allied to the heavy burden of disciplines in the medical school and high exigence with the students

can difficult the engagement in scientific projects during undergraduate.

Research about this topic is scarce but indicates a massive engagement of medical students in undergraduate research, motivated by curricular enrichment, financial support and learning more about an area of interest. Reinforcing what was aforementioned, the main difficulties are lack of time, structure, and institutional incentive in some universities^{6,7}.

The objectives of our research are to analyze the experience of medical students from the Universidade Federal de São Paulo (Unifesp) that participated in a scientific initiation project and to understand the motivations, difficulties and the individual perception of the results, trying to find the positives and negatives aspects of these activities at Unifesp.

METHODOLOGY

It is a descriptive and qualitative research⁸. The participants were medical students from the first to the sixth year of Unifesp that were engaged or already have been engaged in undergraduate research projects. These students were selected using the “snowball” technique⁹: one student from each grade was chosen at the beginning of the data collection and they had to indicate other students to be part of the research, and so on. An online formulary was created at the REDcap platform and used as the instrument for the data collection. This formulary assured the anonymity of the participant and was composed of an informed consent, a question about in which year of the undergraduate the student was, and the following orientation: “The scientific initiation is one of the extracurricular activities in which medical students engage themselves and it’s a very particular experience. Describe your experience with your scientific project, including the ones that you abandoned”. Before the official beginning of the research, this instrument was tested with medical students from other universities and residents, to certify its clarity and adequacy.

After the student accepted to be part of the research, he/she received the link of the formulary by email in order to write a narrative motivated by the sentence aforementioned. The data collection occurred from October 2018 to January 2019.

The narratives were read, any sentence that could identify the author or the scientific supervisor was excluded and, after a first analysis by the first author, they were divided in categories regarding to the kind of experience that the student reported. These categories were subdivided into subcategories that described the benefits, difficulties and motivations cited by the participants. This process was supervisionated by the second author. The project was

approved by the Medical Ethics Committee, evaluation report 2.935.212.

RESULTS

I) Period of undergraduate

We obtained 75 narratives, but four were excluded because they didn't mention the experience of the authors, but technical aspects (methodology, results) of the projects. The distribution of the 71 narratives regarding the period of medical school in which the authors were in is showed at the Table 1.

Table 1: Distribution of participants through the periods of medical undergraduate

Period	1°	2°	3°	4°	5°	6°	Total
Number of students	3	9	13	21	14	11	71

II) Categories

The texts were subdivided into two big categories to express the final experience that the author reported. The categories are:

Category 1: scientific initiation as a positive experience. The student mentions directly or it can be interpreted in the text.

Category 2: scientific initiation as a negative experience. The student mentions directly or it can be interpreted in the text.

Both of the categories received reports from students of all the undergraduate periods, homogeneously distributed.

The number of narratives allocated in each of the categories is expressed at the Table 2.

Table 2: Number of narratives allocated in each category

Category	1	2	Total
Number of narratives	60	11	71

III) Benefits and positive aspects

We created subcategories gathering different benefits and positives aspects of the involvement in a scientific initiation project described by the students in their narratives. These subcategories and their descriptions are:

1) Contact with and learning about scientific methodology: knowledge about elaboration, writing, execution, and interpretation of a scientific project.

2) Personal development: development of skills like organization, discipline, autodidacticism, proactiveness and

the capability of work in a multidisciplinary group.

3) Support/good relationship with the supervisor and/or other people involved in the research: active and near engagement of the supervisor/group in the research.

4) Contact with an area of personal interest: contact with an area of personal interest and the possibility to get more knowledge about it.

5) Contact with the academic field and with a research environment: knowledge about how the academic area works, in practical (presenting the research in a congress) and theoretical (methodologies, process) aspects.

6) Motivation to follow the academic career: the project motivated the student to develop a personal interest in working as a researcher in the future.

7) Financial incentive: receiving a scholarship from funding agencies.

8) Enrichment of the curriculum: to publish papers, present in congresses, participate in scientific events.

9) A stimulus to undergraduate: the project stimulated the student to dedicate himself to the medical undergraduate.

10) Improvement of the doctor-patient relationship: development of abilities related to the relationship with the patients.

11) Applicability of the project: the results of the research can be applied in clinical practice.

The frequency of citation in each subcategory and a sentence exemplifying them can be seen in Table 3.

Table 3: Frequency of citations in each subcategory of benefits/positive aspects and a sentence from the narratives exemplifying them

Subcategory	Frequency of citations	Sentence exemplifying each subcategory
1	23	“My scientific initiation is offering me something that the university itself wasn’t offering and that I judge to be essential to my academic, scientific and personal development: the scientific method”.
2	13	“I also developed abilities that are mandatory for a good professional nowadays, like leadership, teamwork, and proactiveness”.
3	13	“The experience of the scientific initiation has being very good, but I believe that this happens because my supervisor is very dedicated and committed with the research”.
4	11	“[The scientific initiation] is an opportunity for the student to develop autonomy to study a theme of his interest and propitiates personal and professional achievement”.
5	11	“The possibility to learn how clinical research works was very enriching and allowed me to present my research in a congress (...), a memorable experience”.
6	6	“I intend to keep my link with scientific research even after undergraduate because my project helped me to see beyond what is written in textbooks and to develop a unique clinical way of thinking”.
7	5	“Moreover, the scholarship has been essential to cover personal spending”.
8	3	“I won prizes and presented the results of my scientific initiation in congresses, unique experiences that gave me precious memories during my medical undergraduate”.
9	2	“Comparing with my medical undergraduate, I feel that the scientific initiation project was the activity that most stimulated me to search for deep and broad knowledge without an obligation in doing it”.
10	2	“(…) considering that it helped me to develop a good doctor-patient relationship: I improved my abilities to communicate with parents and patients, to explain in a simple way how they should fill the questionnaire, to deal with the “no” and complaints”.
11	1	“It demands a lot of effort, but I consider that I’m doing something useful and it makes all the difference”.

III) Difficulties and negative aspects

We created subcategories that gathered the difficulties and negative aspects related to the experience with scientific initiation described by the students in their narratives. The subcategories and their descriptions are described below.

1) Lack of commitment/comprehension of the supervisor and/or of other members in the research group: lack of support from the supervisor/research group in the different steps of the project or a conflictual relationship.

2) Incompatibility of schedule/lack of time: the lack of time due to the undergraduate obligations or incompatibility of schedule with the place where the project was done.

3) Bureaucratic obstacles and lack of resources: necessity to fulfill bureaucracy (committee approvals, financial demands) and lack of materials necessary to develop the project.

4) Unfamiliarity with the methodology/development of a scientific project: not having the knowledge/experience to elaborate and conduct a scientific project, since its

beginning until the publication.

5) Lack of university orientation: the university never oriented the student about how or when to engage in a scientific project.

6) Depending on other people to conduct the research: the necessity of other people (graduate students, supervisors) to execute the project.

7) Lack of interest/proactivity of the student: the medical student recognizes that his lack of commitment to the project was a drawback for its execution.

8) Lack of critical thinking: development of a mechanical job, without any intellectual exercise.

9) Difficulties with the English language: lack of fluency in the English language was a drawback because of the necessity to read/write papers in English.

10) Lack of financial support: not having any support agency offering a scholarship.

11) Stress generated by doing research involving animals: working with animals created stress for the student.

12) Lack of applicability: the results of the research can't be applied in clinical practice.

The frequency of citation in each subcategory and a sentence exemplifying them can be seen in Table 4.

IV) Motivations

We created subcategories that gathered different motivations for the engagement in scientific initiations cited by the students in their narratives.

1) Possibility to research about a subject of personal interest.

2) Curriculum enrichment.

3) Pressure/personal obligation.

4) Contact with the academic área.

5) Financial support.

6) Finding answers to personal questions.

The frequency of citation in each subcategory and a sentence exemplifying them can be seen in Table 5.

Table 4: Frequency of citations in each subcategory of difficulties/negative aspects and a sentence from the narratives exemplifying them

Subcategory	Frequency of citations	Sentence exemplifying each subcategory
1	12	"(...) my supervisor is a little bit impatient and doesn't like to explain the same thing more than one time, so she gets mad when we ask something that we didn't understand. It is bad because I don't resolve my doubts. Sometimes she was very disrespectful because we weren't able to execute a procedure that she had explained only one time".
2	8	"I gave up my project because the group couldn't help me doing the experiments during lunch, that was my only free time".
3	8	"A problem that we are facing is the lack of resources/materials to the project and, because of that, it is stopped. It annoys me because we have a deadline to deliver the results".
4	4	"In my first experience, I had a lot of trouble mainly because I didn't know how a scientific initiation worked and what I could achieve with that opportunity".
5	2	"Starting a scientific project at our university is very frustrating. We don't know the right time to do so and the university doesn't give support".
6	2	"(...) I relied on the goodwill of my supervisor or other people from the laboratory, like the pathologist and technicians".
7	2	"My scientific initiation wasn't very fruitful as I was expecting, as a result of my lack of proactiveness and the short experience that my supervisor had with undergraduate students".
8	2	"I'm completely discouraged to continue because my only function is to schedule the laboratory tests. There is no scientific learning on doing that".
9	2	"However, it was hard to conciliate the exams of medical school with the writing of the project, and it got worst because the bibliography was in English, making it hard to read".
10	1	"As a negative aspect, I can cite the non-renewal of the scholarship. This is discouraging for the continuity of the project and made me think about the future of research in Brazil".
11	1	"(...) all of this was very extenuating and psychologically stressful, and I cried a lot when I saw the mice suffering".
12	1	"One of the bad aspects was that, in the end, I wasn't able to explain what was the relevance of my project. Actually, nowadays I still can't answer this question".

Table 5: Frequency of citations in each subcategory of motivations and a sentence from the narratives exemplifying them

Subcategory	Frequency of citations	Sentence exemplifying each subcategory
1	8	“So I contacted a professor of that subject, that was an area of personal interest”.
2	4	“(…) I decided that I would dedicate myself to this extracurricular activity not because I was interested in some specific subject, but because I could add it to my curriculum and be a better physician”.
3	4	“At this point, I realized that in a lot of cases the students engage themselves in a scientific initiation because of the necessity that we hear from older students, and it turns the research more in necessity and not something that we like to do. I can see this with other classmates and notice that, in fact, the scientific initiation became an obligation imposed on the students”.
4	4	“(…) I valued a lot the research and wanted genuinely contribute to science, and the scholarship was secondary to me”.
5	1	“(…) and what motivated me to engage in that project was an invitation and the idea that maybe I would receive some money “.
6	1	“Nowadays I’m doing my project to answer two questions that emerge from personal experiences”.

DISCUSSION

The research aimed, using written narratives, to analyze the experiences that medical students from the first to the sixth year at Unifesp had with their scientific projects. An estimative of the participation of medical students in this extracurricular activity can be done using official data from Unifesp: in 2018, 752 students were attending the medical undergraduate¹⁰ and, in the same year, 310 students declared to be part of an undergraduate research project (in that year or before) for a research made for an accreditation process. It indicates that 41% of the medical students from Unifesp did/was doing a scientific initiation, a percentage that is similar in other medical schools^{7,11}.

The results show that the majority of students (60 of 71) report that their experiences with undergraduate research were good, aligned with the data available on the literature⁷. The 11 narratives categorized as negative experiences were equally distributed in all the undergraduate periods, indicating that there is no correlation between the period of undergraduate and having a bad experience with a scientific project.

An important point to discuss is the correlation between a scientific initiation and the learning of the scientific method. The scientific method can be defined as “a group of systematic and rational activities that, with more safety and economy, allow the researcher to achieve an objective - truthful and valid knowledge-, defining a way to be followed, detecting mistakes and helping in decision making”¹². It comprehends multiples steps, starting with the observation of facts, what creates a question or problem that allows the elaboration of hypotheses and deduction of possible results. These hypotheses can be experimentally

tested, accepted or rejected by the comparison of the obtained and the initial expected results. The contact with this systematic method of thinking and the possibility to critically analyze the facts are one of the main benefits cited in the scientific literature derived from being engaged in an undergraduate research project^{1,3}. Analyzing the data obtained from the narratives, this subject is cited at the subcategory 1 of “Positive aspects” and 4 of “Negatives aspects”. In the first case, it is the most cited subcategory, demonstrating the magnitude of this point in the texts. Regarding the negative aspects, the lack of previous knowledge about the scientific method figures in the fourth position.

This lack of knowledge and the difficulty to conciliate the undergraduate obligations with the scientific project (subcategory 2 of “Negative aspects”, the second most cited) suscitates the discussion about what is the role of undergraduate research at the Brazilian medical schools. The national guideline of medical curriculum¹³, published by the Ministry of Education in 2014 includes applying scientific thinking in clinical practice, critical analysis of literature, and identifying the necessity to produce new knowledge in some medical field as desirable abilities for a newly graduated physician. Moreover, the student that published a paper, participated in congresses, and engaged himself in scientific projects receives more points during the selective process to enter the medical residency¹⁴. However, the lack of time is commonly mentioned as a drawback in the literature⁷, and also other points like lack of institutional incentive¹⁵ that, in our research, wasn’t so present in the narratives (subcategory 5 of “Negative aspects”). This dichotomy between the valorization of the engagement in a scientific project and the lack of organization of

medical curriculum to allow such engagement creates a debate about the necessity to offer optative or obligatory disciplines that focus on this issue and, beyond that, to create incentives for the engagement of medical students in a scientific project during undergraduate or, moreover, making this participation mandatory. Regarding the disciplines that discuss this subject, the best Brazilian example is the Federal Fluminense University (UFF) where, since 1996, there is an optative discipline offered to medical students from the second to the fourth year, in which they are exposed to the scientific method and, at the end of this period, have to elaborate a scientific project as a final job. The results of this experience at UFF were published, analyzing the influence of this discipline in the scientific production of the professors involved and in the profile of the former participants¹⁶. At Unifesp, after the reformulation of the medical curriculum in 2018, a discipline called “Initiation in Scientific Research” was introduced in the first and second years of undergraduate, in which the students learn about the scientific method, kinds of scientific studies, research ethics and, using data basis, executed searches in the scientific literature. By the end of the second year, medical students have to present a scientific project developed during the discipline. Specifically, about the scientific initiations, the discipline cites as one of the objectives “to offer theoretical tools and practices for a qualified scientific initiation”¹⁷. Due to the recent introduction of this discipline, its impacts weren’t studied yet.

The discussion about incentives for the realization of scientific initiations is more present in foreign universities. North American universities (for example, Harvard Medical School, University of Stanford, and the University of Pennsylvania) formally support students who want to spend a year of undergraduate to elaborate a scientific project¹⁸. This practice is motivated by the shortage of physicians interested in the academic career, arguing that the construction of this career must be initiated during undergraduate¹⁹, and by the possible benefits that this engagement can bring to the student, like the stimulus for constant study, critical analysis of the literature and curriculum enrichment²⁰. Another example is the Norwegian program, which started in 2006, aiming to attract medical students for the academic area, offering scholarships to the ones that are interested in spending two years (one from the regular curriculum and an extra one) doing research⁵. In Brazil, this kind of incentive occurs by support agencies offering scholarships, cited as a positive aspect (subcategory 7) and motivation (subcategory 5), and the lack of it cited as a negative aspect (subcategory 5) in the narratives. Similarly to what exists at the North American universities, some medical Brazilian medical schools offer the MD-Ph.D. program in which the student can ingress in a graduate program before finishing the undergraduate and, with 2 or 3 additional years, obtain a PhD²¹.

However, beyond the implementation of incentives, it is mandatory to guarantee the quality of these programs and the technical and intellectual capacitation of the students involved. Possible drawbacks of turning the engagement in scientific initiations an obligation are to force students that are not interested in research to execute it, the necessity to exclude other curricular subjects, lack of time for the students to dedicate themselves to other personal interests and demand of a higher investment by the universities to implement research programs²⁰.

The second most cited “Positive aspect” (subcategory 2) was the opportunity to develop individual abilities like time management, teamwork, and proactiveness. Previous research done with students from other undergraduates points to benefits like tolerance with obstacles, independence, and self-confidence²². Another ability present in the literature is communication^{7,19}, improved by the necessity to clearly organize the results in reports and scientific papers, as well as the possibility to present the data in congresses. This aspect shows the possibility of gaining abilities that are not directly related to the scientific project itself but with its management and execution, and that can also be useful in the future professional lives of the students.

A negative aspect that emerged is the pressure created for the student’s engagement in scientific initiations, mainly because of the concurrence at the selective processes for medical residency. In the narratives, this motivation was mentioned (subcategory 3 of “Motivations”) and it is also present in the scientific literature about the theme. In an analysis of the central motivations that students of North-American universities had to engage themselves in scientific projects during one year of their undergraduate the most cited one was the competitiveness of the medical residency selections¹⁸, and a third of undergraduate students mentioned that they would not do it if these selections don’t count participation in research in their score. In Brazil, research about the involvement of medical students in extracurricular activities (like scientific initiation) indicate that the curricular enrichment is one of the central motivations^{7,11}. Obviously, the preoccupation about having a good curriculum or about the residency selection problems are not a problem, but it generates pressure on the students, mainly because they see their classmates doing research, which can create students not motivated with the projects¹⁸. One possible consequence of this problem is a scientific production of poor quality, once the student is not really involved in the project. A publication evaluated the scientific production done by medical undergraduate students and showed that besides an important increase in the number of publications, they almost weren’t cited²³, showing a deficit of quality.

A recurrent subject in the narratives was the importance of the relationship among the students and their supervisors during the elaboration and execution of the project. A good relationship figures in the third place on

the “Positive aspects” (subcategory 3) and a bad one in the first place (subcategory 1) among the “Negative aspects”. The scientific literature about the topic cites a questionnaire applied to medical students from the Paulista Estadual University (Unesp) that indicated as the main aspects they had considered to choose their supervisors: the disponibility of time, motivation to command the research and didactic demonstrated in classes. All the participants mentioned that a conflictual relationship with the supervisor would be a negative aspect. The same research elects as factors related to the success of the supervisor: his/her knowledge, the capacity to express himself/herself clearly, and the way that he/she deals with conflicts⁷. The supervisor has the mission to help the undergraduate student that, due to the lack of experience, can’t conduct a research project alone. However, there are many situations in which the students aren’t adequately supported during this process and, moreover, situations in which there is a bellicose between the student and the supervisor²⁴. This is damaging in many aspects: first, there is the risk to not completely develop the potential benefits that would result from the engagement in a scientific project due to this lack of adequate supervision. It can also affect the diligence and commitment of the students in the project because they don’t have clear guidance or because the environment created demotivates them, influencing the final result of the research.

Finally, it is important to discuss undergraduate research as a stimulus for the choice of a future academic career. As defined before¹, the scientific initiation is the first contact with the academic area, being essential for the students to consider and develop their interest in this field and, maybe, follow a career as researchers. This goal is supported by the idea that a scientific career is constructed by steps and the possibility to be part of research as an undergraduate student would be the first one of them¹⁹. In our research, it wasn’t a very commonly cited aspect (sixth among the “Positive aspects”). Previous research

indicates that the level of medical students interested in following an academic career varies from 28% to 60%²⁵. As aforementioned, other countries like the USA and Norway created national programs to encourage undergraduate medical research because the shortage of students aiming to pursue an academic career^{5,18}. In Brazil, there is no official program to incentive this kind of career focusing on medical students.

CONCLUSION

This research evidenced that the majority of medical students from Unifesp had a good experience with their scientific initiation projects, citing as the main positive aspects the contact with the scientific method and personal development and as the main negative aspects a conflictual relationship with their supervisors and lack of time.

With these results, it is possible to have a panorama of how the scientific initiation impacts the medical student from our university and to understand its strengths and weakness.

The absence of a distinction between the different fields of research or among the different years of medical undergraduate are a deficiency of our research. Moreover, there is an inherent subjectivity due to the methodology adopted.

The use of an anonymous online formulary allowed the participants to appropriately report their experiences, concluding that this was an adequate methodology. This method can be applied in future studies, like interviews with the supervisors and subanalyses of the positive and negative aspects debated before.

It is necessary to discuss ways to incorporate the research in the official medical curriculum of Brazilian universities as well as a stronger institutional incentive for the execution of undergraduate research, allowing its potentialities to be developed.

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