

## Fine arts for medical students: driving transformative debates

### *Belas artes para estudantes de medicina: motivando debates transformadores*

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Mesquita DAK, Tempiski PZ, Maia FM, Cunha TSL, Paiva LB, Baquit MP, Correa RV, Giaxa RRB. Fine arts for medical students: driving transformative debates / *Belas artes para estudantes de medicina: motivando debates transformadores*. Rev Med (São Paulo). 2022 March-April;101(2):e-189268.

**ABSTRACT:** *Introduction:* Debating arts during graduation can be a creative way to develop new perceptions and perspectives for medical students. To promote activities that aim to create moments involving humanistic themes, simultaneously to technical medical knowledge, such as arts and physical activities in a playful setting, remains a challenge. A extracurricular Global Improvement Programme of Medical Students (GIPMS) of the University of Fortaleza was created on this context, and included meetings involving various artistic stimuli. *Purpose:* The objective of this paper is to evaluate if the contact with art during graduation in the context of GIPMS can generate perceptions, feelings and reflections to provide important debates. *Methods:* A prospective qualitative study was conducted including a total of 42 focal group sessions, which were recorded and fully transcribed. Each group was conducted by 2 mentors, and all 6 focal groups used standardized qualitative questionnaires each session, which were performed every 45 days. A thematic analysis of the transcripts was performed, confirmed with the QSR NVIVO software (version 11). *Results:* A total of 40 students (15 men and 25 women) participated in this one-year study. The categories found were: Artistic stimuli were able to make participants think (124 quotes), feel (78, 65 about positive feelings and 13 about negative ones) and remember (41). The following stood out: the influence

of the time load of studies in the time dedicated to the arts and the reflections. (61); relationship between the arts and life and academic productivity (75); changes in attitudes provided by the proposed artistic stimuli (38 citations). *Conclusions:* The program was able to generate, in an innovative way, new perceptions of feelings, sensations and reflections, as well as to evoke memories that provided important debates, which, according to the students themselves, served as inspiration to change perspectives and attitudes and provided subjective benefits in academic life.

**Keywords:** Arts; Medical education; Feelings; Reflection; Memories; Medical students.

**RESUMO:** *Introdução:* Debater artes durante a graduação pode ser uma forma criativa de desenvolver novas percepções e perspectivas para estudantes de medicina. Promover atividades que visem criar momentos envolvendo temáticas humanísticas, simultaneamente ao conhecimento técnico médico, como artes e atividades físicas em um ambiente lúdico, continua sendo um desafio. Nesse contexto, foi criado um Programa Extracurricular de Aperfeiçoamento Global de Estudantes de Medicina (GIPMS) da Universidade de Fortaleza, que incluiu encontros envolvendo diversos estímulos artísticos. *Objetivo:* O objetivo deste trabalho

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é avaliar se o contato com a arte durante a graduação no contexto do GIPMS pode gerar percepções, sentimentos e reflexões para proporcionar importantes debates. *Métodos:* Foi realizado um estudo qualitativo prospectivo com um total de 42 sessões de grupo focal, que foram gravadas e transcritas na íntegra. Cada grupo foi conduzido por 2 mentores, e todos os 6 grupos focais utilizaram questionários qualitativos padronizados a cada sessão, que foram realizados a cada 45 dias. Foi realizada uma análise temática das transcrições, confirmada com o software QSR NVIVO (versão 11). *Resultados:* Um total de 40 alunos (15 homens e 25 mulheres) participaram deste estudo de um ano. As categorias encontradas foram: Os estímulos artísticos foram capazes de fazer os participantes pensar (124 citações), sentir (78, 65 sobre sentimentos positivos e 13 sobre sentimentos negativos)

## INTRODUCTION

The meaning attributed to the experience of health and illness has social and cultural influence. This requires the physician's sensitivity to understand the patient's context beyond their clinical conditions, in a model of comprehensive care centered on the person who gets sick. Meeting this demand for health care requires changes in medical education and is a challenge<sup>1</sup>.

Thus, besides good technical and academic performance, physician's competencies depend on a series of personal qualities<sup>2</sup>. It is recognized that medical schools have a duty to contribute to training of individuals most likely to become professionals with these attributes<sup>3</sup>.

To fit new needs, modern medical education programs often involve arts and seek to help undergraduates understand and express themselves from a deeper view of human nature. The closer contact with art enables the scholar to develop an open-minded state of new information, making him or her capable of actively participating in their reality and being aware of new perspectives and perceptions, thus facilitating the process of thinking, feeling and remembering, during graduation<sup>4</sup>. In addition, art allows the individual to develop and improve skills for both personal and professional realities<sup>5</sup>.

From the recognition of this absence related to activities that promote the processes of thinking and feeling in medical education, educational institutions seek to carry out activities capable of developing in a more adequate way students' sensitivity<sup>6</sup>. For example, groups that facilitate the discussion of visual arts, conducted in partnerships with museums, when guided by questions related to observing, feeling, interpreting and reflecting are effective for learning clinical skills<sup>7</sup>.

This benefit is due to the fact that there is development of abstract thinking, improving the interpretations of what is said by the patient and the descriptions of clinical observations.<sup>5</sup> This benefit extends to other areas of student reasoning and facilitates the ability to acquire, store and retrieve (recall) information.

In 2013, the Tutorial Education Program at

e lembrar (41). Destacaram-se: a influência da carga horária de estudos no tempo dedicado às artes e às reflexões (61); relação entre arte e vida e produtividade acadêmica (75); mudanças de atitudes proporcionadas pelos estímulos artísticos propostos (38 citações). *Conclusões:* O programa foi capaz de gerar, de forma inovadora, novas percepções de sentimentos, sensações e reflexões, bem como evocar memórias que proporcionaram debates importantes, que, segundo os próprios alunos, serviram de inspiração para mudar perspectivas e atitudes e proporcionou benefícios subjetivos na vida acadêmica.

**Palavras-chave:** Artes; Educação médica; Sentimentos; Reflexão; Memórias; Estudantes de medicina.

the University of Fortaleza (Ceará, Brazil) created the GIPMS program, guided by two professors with extensive experience in research, teaching and extension, funded by the Ministry of Education of Brazil, with the aim of improving education quality at the university where it was implemented. GIPMS aimed to promote weekly activities involving themes like clinical reasoning, medical ethics and research. In addition, humanistic themes, cross-cutting to medical science, were covered like arts and physical activities in a recreational scenario. The program design included focal groups, conducted by 2 mentors each. These mentors were selected by outstanding academic performance and were participants of the 2-year Tutorial Educational Program. Selection criteria included leadership, world knowledge, artistic skills, autonomy, teaching ability and academic performance. For over one year, two professors instructed these students in active tutoring, training mentors that voluntarily decided to participate. Thus, mentors stayed in the program for 2 years, and mentees for 1 year. The mentors had 3 weekly meetings with the tutors, one of them without the mentees, to receive feedback and plan new activities (Wednesday). Mentees participated on Tuesdays and Thursdays. The mentors' first year was generally devoted to training and observation, and the second to practice and mentoring new program mentors and mentees. The content of the meetings consisted of interactive clinical sessions, debates on therapeutic approaches, lectures, ethics forums with simulated jury and workshops on the development of artistic skills. During the activities, participating students had to present classes, develop research projects and actively participate in the organization of artistic events.

First, 52 students enrolled voluntarily in GIPMS to be mentored. This group was selected through a letter of intent explaining the reasons that motivated them to join the group, their available hours for activities and a summary of their life and leisure habits. The letters were evaluated by the program advisors with the help of mentors. Mentees were randomly divided in six smaller groups, each of them guided by two or three mentors who were randomly assigned to each group.

In total, 12 mentors (7 women and 5 men)

participated in this one year research. Regarding the frequency of the mentors' medical course semester, 3 were in the sixth semester and 9 were in the eighth semester.

There is evidence that contact with art during graduation develops students' empathy and acts as a protective factor in their mental health.

The objective of this paper is to evaluate if the contact with art during graduation in the context of GIPMS can generate perceptions, feelings and reflections to provide important debates.

## MATERIAL AND METHODS

### *Design*

This a prospective qualitative study consisting of art related focal group sessions engaged for a year in the Global Improvement Programme of Medical Students (GIPMS) of the University of Fortaleza (Ceará, Brazil), financed by the Ministry of Education of Brazil. Approval for the study was obtained from the University's research ethics committee (CAAE: 30963014.0.0000.5052). All participants agreed and signed the informed consent form.

A total of 61 meetings lasting 2 hours each during the second term of 2015 and first term of 2016 were performed. From these meetings, 6 were sessions of artistic stimuli exposed to all students together and 6 were smaller groups for presentations to small group members only of arts and reflections as responses to the stimulus presented the previous week. Arts chosen to be presented to the students as stimuli were: movie theater, theater/staging, painting, music, photography and plastic arts, being presented every 45 days.

These art activities were divided into two moments: in the first, a professional artist performed to all students together and made reflections about it, which was called a "stimulus" and lasted about 2 hours. In the second moment, the focal group sessions were developed; students were stimulated to bring a self-made production related to the artistic ability shown.

### *Focal Group Sessions*

At the second meeting, one week after the first one, students were divided in six 30-minute small groups with their mentors to present their productions and to discuss the creative process and its repercussions on students' daily lives, what was called "reaction". Mentors conducted groups using standardized questionnaires specifically designed for this study that helped them to stimulate students' reflections about what they felt, thought and remembered during the exposure to the artistic stimulus and during the creation of their own art product, standardizing the activity among the 6 small groups. After that, the rest of the time was dedicated to the other activities of the Program (clinical reasoning, medical ethics or research). They were also asked if this experience could in any way

influence academic life.

At the end of the GIPMS, each small group held a final moment to debate with students about the highlights of artistic activities, positive and negative aspects of the activity, and suggestions for improvements. It was also questioned whether contact with arts changed the way they saw the world and Medicine and whether they believed that all medical undergraduates should have contact with the arts.

All 42 sessions (six meetings with each of the six groups of students and their mentors and a final meeting with each of these six groups) were audio recorded and completely transcribed afterwards without identifying the person except by year of graduation and gender.

### *Data analysis*

The groups were analysed by using thematic analysis.<sup>8</sup> The transcriptions were read separately by 3 research members who created initial themes. Final themes were chosen after discussion and comparison between all themes found. Afterwards, group declarations were categorized.

The authors confirmed the codifications created by the thematic analysis using qualitative data analysis software (QSR NVIVO version 11) (Figure 1).

The differences between the frequencies presented by the thematic analysis and those presented by the QSR NVIVO software did not influence the categories analysis. The thematic analysis was performed before using the software, which was used as confirmation of the quality of the authors' thematic analysis. It is important to emphasize that this one also categorized the excerpts under the same themes as the authors, despite having found less excerpts apt to be allocated into categories, which the authors, upon reviewing, found accurate, justifying their allocation under category in the thematic analysis.

## RESULTS

In total, 40 mentees (25 women and 15 men) participated in this one year research. Regarding the frequency of the mentees' medical course semester, 24 students were in the fifth semester of the course, 12 were in the seventh semester, 3 were in the ninth semester and 1 was in the 11th semester. Twelve students dropped out of the GIPMS due to issues such as appointments at the same time as the activities.

The qualitative and quantitative analysis worked together for bringing up the following categories (Figure 1 and Table 1): (1) Artistic stimuli were able to make participants think, feel, and remember; (2) The influence of the study time on the time dedicated to the arts and reflections; (3) Relationship between the arts and life and academic productivity; (4) Changes in attitudes provided by the artistic stimuli provided.

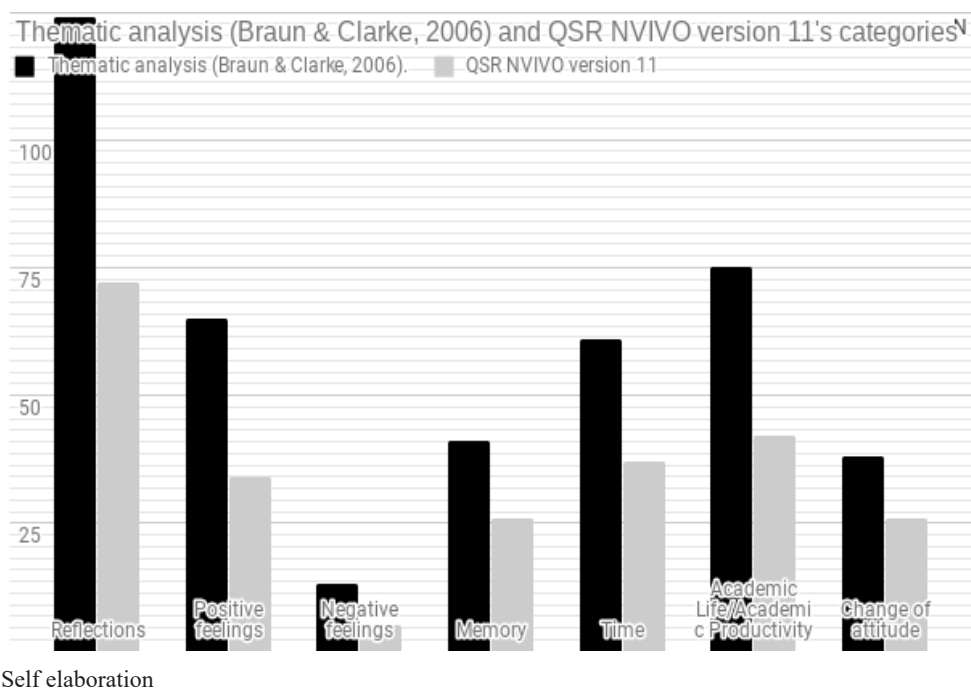


Figure 1. Thematic and software QSR NVIVO version 11 analysis. Categories and number of quotations

Table 1. Categories, subcategories and definitions

Category	Associated Subcategory (ies)	Definition
(1) Artistic stimuli were able to make participants think, feel, and remember	Thoughts, Feelings, Remembrance/ Memories	We used this category and its subcategories to assess how the stimuli interfered with the students’ emotional state.
(2) The influence of the time load of studies in the time dedicated to the arts and the reflections.	Time	Here we evaluated how students organized their curricular and extracurricular activities and whether they included arts in their free time.
(3) The link between arts and life and academic productivity.	Academic Productivity	We aim to analyze how the arts interfered in the students’ daily lives and academic tasks and whether they could, somehow, increase their productivity as medical students.
(4) Changes in attitudes provided by the artistic stimuli provided.	Attitude Change	We seek here changes in attitudes and perspectives after expositions to artistic stimuli and after moments of reflection.

Self elaboration

**Category 1:** Artistic stimuli were able to make participants think, feel and remember

We used this category and its subcategories to assess how the stimuli interfered with the students’ emotional state. The subcategory “Thoughts,” on the thoughts and reflections that the artistic stimuli provided to the students, stored 124 citations, as below:

*Have you seen the picture of Narcissus staring at himself in the water? That’s exactly what I thought during the production...it was Narciso looking at his reflection in the water but the water was a picture of Instagram. Because we spend a lot more time looking at who liked our photos*

*than enjoying the moment of leisure. -Second year female student [2YFS].*

*The moment of the creation of my painting was a time to stop and think about the path that I have traveled and of my choices. Fifth year male student [5YMS].*

*The art for the one who is producing is self-expression, so for the person who is seeing it is a matter of understanding what is going through the head of the artist [5YFS].*

*Medicine is changing a lot over time, we are moving from the biomedical model to entering person-centered medicine. And art is the fact that you feel something... when you can develop that sensitivity, you can put yourself*



*in the other's place [2YFS].*

The “Feelings” subcategory, about the positive or negative feelings that the artistic stimuli provided the students, stored 78 quotations, 65 being about positive feelings and 13 about negative feelings. Below are some of the quotes:

*I was able to see a new humanity from that art. I began to understand other people from their most human points. I shared the artist's feelings with him because art carries a lot of feelings. So I believe that when we have more contact with art, we will more easily accept the other person as he is, more empathetically [3YMS].*

*I left the arts exhibit lightly, giggling. I found the art light, colorful, and happy [3YFS].*

*While I was watching the movie, I did a self-reflection and I was afraid that the character's experience would happen to me, those conflicts with perfection, trying to get everything she wanted... [2YFS].*

Already the subcategory “Remembrance / memories” presented quotations of memories that the arts evoked in the participants. Thirty-one paragraphs were analyzed. Here are some examples:

*The stimulus brought back memories of many moments because I associated music a lot at the time, so it reminded me of my adolescence, what I was doing, who I was, what I dreamed about. It made me reflect on my choices and challenges, past and present [4YFS].*

*When I was a kid, I got a little keyboard and a little violin, so the stimulus was like an anamnesis: it brought back to memory what music represented throughout my life, throughout my history, and made me appreciate art and life. [3YMS].*

**Category 2:** *The influence of the time load of studies in the time dedicated to the arts and the reflections*

Here we evaluated how students organized their curricular and extracurricular activities and whether they included arts in their free time.

This Category was analyzed from the “Time” subcategory, which obtained 61 citations, as observed below:

*Everywhere you hear that the doctor has no time for you and other things. And here in the program it is not so. Here you see that you are a person, that you have to take care of yourself, your body and your mind. [4YMS]*

*The stimulus motivated me to do some things that I had neglected because of routine. I realized that we can do what we like because if there is that mandatory schedule for university activities, why can we not find another time to do something we like or do not do because of routine? It's a challenge that's worth overcoming. [2YFS].*

It is noticed that some participants were given time to produce arts and to reflect on the process of creation, associating it with great learning, while others were not able to organize as they would like and are justified by the excess of curricular tasks:

*For me this experience was very interesting because I always like to be in touch with art, although I do not devote much time. (...) Before I started to study medicine, I started to write some sonnets... I had some projects that I still have and began to write a book and draw some pictures, but I had to stop because of college. [1YFS].*

*During the practice, we were on a test week, so I kept thinking, 'I'm laughing here, but there's a lot to study,' so I could not take advantage of the stimulus I wanted. [3YFS].*

**Category 3:** *The link between arts and life and academic productivity*

We aim to analyze how the arts interfered in the students' daily lives and academic tasks and whether they could, somehow, increase their productivity as medical students.

This Category deals with the influences of the arts on the academic life of the participants, including whether or not they helped their productivity. There were 75 paragraphs related to the topic, such as the following:

*I'm writing every week this semester, and this is something that's helping me a lot, not only because it's de-stressing me, but because it has kept me interested in college. That was something I had not tested in another semester, and the program encouraged me [2YFS].*

*Theater is communication and medicine too! When you are with a patient, you have to learn to look them in the eye, you are there with another posture, in another position. So I think these theater skills can help me develop as a professional because they help a lot in the day to day of a doctor. [4YMS].*

*Photography taught me to look at the details, look at situations from different angles. I think that it certainly has influenced me in the professional environment, in contact with my patients. [3YMS].*

*Art is a means by which you throw away your stress, bad feelings; and once you take these stresses from within you, you can perform your daily tasks with more quality. [1YFS].*

**Category 4:** *Changes in attitudes provided by the artistic stimuli provided*

We seek changes in attitudes and perspectives after expositions to artistic stimuli and after moments of reflection.

The “Change of attitude” subcategory presented quotes on how the arts changed the way we see and experience each moment, inside and outside the university environment. We analyzed 38 paragraphs.

*I find the power that art has to change me very interesting. [3YFS].*

*I'm trying hard to sing again. I also went to church. It was a super heavy week in college, during which I killed myself to study, but still insisted on taking care of my spiritual side, and it worked. Because in the old days I did not find the time for this [2YFS].*

*The day after the stimulus, I went to the park to inspire myself! I started taking these photos... I paid a lot of attention to the paths, the trees... I went walking, taking photos...I relaxed! [1YMS].*

Few participants were not able to change attitudes, but they plan to do so, which was analyzed as a change of perspective. The quote below exemplifies this:

*I came out of the stimulus environment and I thought 'Gee, I want to go back to playing the guitar. I miss my guitar. [1YMS].*

*I had a different view the first time I watched the movie. He made me think a lot about the importance of mind and body care that we have to have, and, bringing to medicine, what the health professional needs to have in relation to the patient, even if this doctor is not a psychiatrist or a neurologist or whatever. [4YMS].*

## DISCUSSION

From the beginning of the medical career, students are at greater risk of stress, fatigue, burnout<sup>9,10,11</sup> and depression in relation to the general population. Among the factors related to the greatest stress in this group of people, we highlight concerns about the future and overload of study hours<sup>12</sup>. These factors were cited several times by the participants during the small groups, especially after being exposed to the Movie Theater stimulus, when they watched the movie “Black Swan”<sup>13</sup>.

On the other hand, contact with the arts stimulates the action of thinking about oneself and about different situations, besides giving the individual moments of leisure and reflection<sup>14</sup>. This was proven by this study, since the category with the highest number of citations was “Thoughts”.

Science is a central part of medical education, but it is not enough. Thus, the number of criticisms about patients' disappointment regarding contact with their physicians, who are less and less able to demonstrate humanistic qualities in quick, superficial and operational consultations, is increasing<sup>15</sup>.

The routine of modern society and its demands leads

to a stressful lifestyle full of expectations.<sup>16</sup> The exacerbated need for professional success and technological advances contribute to the reduction of sensitivity and humanization of professionals in different areas, having a negative impact on interpersonal relationships and reducing, consequently, the empathic capacity of health professionals<sup>17</sup>.

In its turn, empathy is fundamental to the doctor-patient relationship and it is a concept composed of three components: affective, cognitive and behavioral. These components refer to the ability to perceive the perspective and feelings of another individual, in the absence of judgments, to the existence of genuine feelings of compassion and concern for the person's well-being, to the transmission of the communication that the patient was truly accepted and understood<sup>18</sup>.

In this sense, scholars argue that by teaching medical students the importance of arts, literature, bioethics, and spirituality, universities raise the number of future physicians who value humanism in medicine, counteracting the tendency towards overvaluation of technology in health<sup>15</sup>. Accordingly, the stimulus “Painting” of this study was one of the stimuli capable of generating feelings and reflections toward humanism.

The doctor should be able to understand the patient and, from this, to express himself clearly. The teaching of the arts contributes to the individual understanding the society and to understanding himself better, facilitating the expression of his thought in a correct way through the language<sup>19</sup>. These ideas are in line with the speeches of participants after, for example, the “Theater/Staging” stimulus.

It was also seen that the number of responses increased during the program year. It is believed that this is justified by the fact that the group gains more intimacy and experience with the proposal of the program over the months.

In a world of increasing complexity, there are no simple solutions to the problems faced by health professionals and medical educators<sup>20</sup>. These problems require creativity (with the generation of new ideas) and innovation (in the practice of new ideas) to produce a solution. In this sense, activities, such as those carried out in the program, that increase student contact with the arts, result in a greater stimulus of creativity and innovative thinking<sup>21</sup>.

Medicine and the arts value an active involvement with knowledge through the attunement between the intellect and the practical mind that the two curricula nurture, far beyond the mere acquisition of information. Thus, it is presumed that a student who has had close contact with art in his/her curriculum will know how to continue learning with ease and passion in the future<sup>22</sup>. This was seen in student speeches that defended the fact that they were better able to see the world with new eyes after contact with the arts and acquired skills useful for

their professional and personal lives.

In short, the insertion of arts in the context of medical education usually encounters initial resistance on the part of some students<sup>23</sup>. However, after the activities, these students reverted their opinions to see how art can contribute to make their communication more effective, as well as being a space for reflection and balance in the midst of a daily problem common to the area.

In Brett-MacLean's words: "The synergism between art, culture, health and well-being is indisputable, and it is necessary to broaden the understanding of the benefits of art, particularly in the education of health professionals"<sup>24</sup>.

Some limitations of the study and proposal: For a humanistic education in Medicine, a long follow-up is necessary, and, despite the short period of time, the project exemplified one of the ways to do this. A questionnaire could be applied to quantify the improvement in students' mental health and empathy after the project. It was not possible to assess the opinion of the participants about the importance of the program in professional practice, as they were all students in the first semesters of the Faculty of Medicine. The authors believe that the proposal can be easily reproduced in other universities through Tutorial Education Programs, based on the methodology exposed as a model.

**Acknowledgments:** The authors thank the University of Fortaleza for their support, the artists involved and the volunteers who significantly enhanced this experience.

**Conflicts of Interest:** The authors report no declarations of interest. The authors alone are responsible for the content and writing of this article.

**Individual contributions:** To be an author, each employee met at least all of the following conditions: (1) have contributed substantially to the conception and design or analysis and interpretation of data; (2) contributed substantially to the writing of the article or critically reviewing it for important intellectual content; and (3) gave final approval to the version to be published.

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Received: 2021, August 07

Accepted: 2022, February 22