

## **SOCIODRAMA “RESPIRATORY ALKALOSIS”, IN BIOCHEMISTRY, AT THE CICS UMA-IPN**

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**Abstract:** The CICS UMA, being dependent on the National Polytechnic Institute, has as its daily academic work guide the educational strategies that emanate from the elements of the Institutional Educational Model (MEI). On the other hand, teaching requires the continuous training and development of teachers, establishing as priorities the continuous improvement of their teaching and research practice. The result of the above was the implementation of a learning strategy, such as the Sociodrama “A case of Respiratory Alkalosis” in the Learning Unit, Fundamentals of Clinical Nutrition I Biochemistry in the respiratory system, in the Nutrition Career of the CICS UMA. Which led us to the representation of the thematic content of the program, resulting in the students being very participatory, it is dynamic, versatile and useful for the conclusion and feedback of the contents of a Learning Unit and it can be used with groups. numerous.

## INTRODUCTION

The Interdisciplinary Center for Health Sciences (CICS UMA), being dependent on the National Polytechnic Institute, has as its daily academic work guide the educational strategies that emanate from the elements of the Institutional Educational Model (MEI), focused on learning, The student is the center of attention of the academic process, considering him an individual who builds his own knowledge with the support of the teacher. Comprehensive, high-quality scientific, technological and humanistic training that balances the development of knowledge, attitudes, skills and values. On the other hand, teaching requires the continuous training and development of the teacher, establishing as priorities the continuous improvement of their teaching and research practice. So we ask ourselves the following question. Can a Sociodrama in Biochemistry be implemented

in the classroom?

Sociodramas is a learning strategy where the entire group actively participates. It consists of two or more people freely and spontaneously representing a real-life situation, assuming the roles of the case. In order for it to be better understood and treated by the group, both by the participants and by the rest of the group that acts as observers. The duration may vary, depending on the theme that you want to represent, it is considered a class giving time for questions and answers.

The basic material to carry it out: having a clear theme, what is going to be represented, a suitable place or space is required for the development of the scene, it can be a classroom, an auditorium, etc. Have volunteers from the same group to represent the characters of the case, do not let the words be the only thing in the performance, so that everyone hears and understands, you must speak with a clear, strong and unhurried voice. Sets can be made according to the theme, large paper or fabric signs to identify places, to represent a character that can be identified with a special costume. You can also use some easy-to-find materials that help make the performance more real (hats, handkerchiefs, a table, etc.). The dramatization must not be very long. (Garcia, V. A. 2017).

Sociodramas in general are used to present contradictory, problematic situations, ideas and contrasts, to then provoke discussion and deepening of the topic. It is the representation of some real-life event or situation in a physical space and with an involved audience (themselves), who after the theme represented, which is generally made by themselves, will participate by analyzing the situation in greater depth. They may be short theatrical performances with topics relevant to the participants in a talk, conference or other activity to provide feedback on a topic. (León, U. A. y Col. 2018)

## DEVELOPMENT

The teacher implemented the learning strategy of a sociodrama “a case of respiratory alkalosis” from the U. A. Clinical Nutrition I, Biochemistry of the Respiratory Ap., in the nutrition major, for which the teacher carried out the script of the sociodrama represent.

Subsequently, three teams of eight students each were formed, to whom the complete sociodrama script was given at the beginning of the course where the participation of each member was clearly explained. Their action would be free and spontaneous in a clinical situation, a case of Respiratory Alkalosis, previously reviewed in class. Other members of the group were incorporated who would participate in the elaboration of the scenes, in the formation of the batons of each team, each one assuming the roles of the case, with the aim that it could be understood and treated by the group, both by the participants as well as the rest of the group who would act as observers. The participants of each team dressed appropriately for their character, set up their scenery, and the sociodrama was carried out by the three teams.

## RESULTS

It begins in a soccer sports stadium where, due to the excitement caused by the excitement of the game, a spectator falls into alkalosis with fainting and is attended to by two nutrition students. When they are paying attention to the injured person, they are violently interrupted by a subject. influential person who, showing off his ignorance and his power, has them arrested by the authority and they end up at a POLICE delegation where things are clarified before the public prosecutor's agents and an expert, the students are exonerated and congratulated for their action.

## DISTRIBUTION IN ORDER OF APPEARANCE

**TERESA** Student who is involved  
**LIC. BRIONES** Influential  
**POLICE AGENT** POLICE of the public ministry  
**LIC. SANTOYO** Public ministry agent  
**DR. HERNÁNDEZ** Legal medical expert  
**FRANCISCO** Spectator who suffers the accident  
**JUANITA** Francisco's companion  
**ELENA** Student who is involved

## SCENE 1: IT STARTS IN A FOOTBALL STADIUM

**FRANCISCO** Bravo....let's go team..... tough on them, goal!!!Truncheon... truncheon.....truncheon  
(All this while hyperventilating while standing) she sits down and grips the chair.  
**JUANITA** What's wrong with you, Paco? You feel bad????  
**FRANCISCO** If I feel very dizzy (continues to hyperventilate). He fades away and falls to the ground.  
**JUANITA** **Paco, Paco**, What's wrong with you, help, who knows what's wrong with Paco.  
**ELENA** What's up, Juanita? (approaches)  
**JUANITA**, I don't know, Paco was very excited, he got dizzy and it seems like he fainted.  
**ELENA** Yes, he's passed out, what? Was he screaming a lot? (taking his pulse)  
**JUANITA**, If you see how crazy he gets when his team wins  
**ELENA** **Teresa**, come help me, it seems that Paco is in RESPIRATORY ALKALOSIS (calling Teresa)  
**TERESA** Let's make him breathe his own air, here, I have a bag here (they put the plastic bag over his nose and mouth)  
**LIC. BRIONES** What's happening? Why do they want to suffocate this young man?,

POLICE!, POLICE! (throwing the girls).  
The POLICE approaches Lic. Briones, the  
Lic. shows some credentials.

**POLICE:** What's up, sir?

**LIC. BRIONES** Look, I'm very influential,  
these girls wanted to suffocate the young  
man, look, he's dead, ask for an ambulance  
and take these murderers away (the agent  
takes them away).

## **SCENE II THE POLICE OFFICER PRESENTS THEM TO THE PUBLIC PROSECUTOR'S OFFICE**

**POLICE** Here I bring these, Mr. Briones sent  
them. He said that they were strangling a  
boy in the soccer game.

**LIC. SANTOYO** Did you see what  
happened???

**POLICE** No, but that Briones has a badge  
and says he is very influential. Don't you  
know him?

**LIC. SANTOYO,** I don't even know who it  
is, you know what happened.

**ELENA Y TERESA** Look, Paco went into  
respiratory alkalosis

**LIC SANTOYO** Moment one by one, there  
agent, take this one (the policeman takes  
Teresa)

**LIC. SANTOYO** What's your name?

**ELENA Elena**

**LIC. SANTOYO** Elena, What happened?  
Why were they going to strangle that guy?

**ELENA** Look, Lic. We weren't even going to  
strangle anyone and what happens is that  
everyone is ignorant.

**LIC. SANTOYO** Stop insulting authority  
and tell me what happened.

**ELENA** We were at the soccer game between  
the medicine major and nutrition major  
teams and they had just scored a goal.  
Juanita yelled at me because Paco fainted,  
so I, a medical student at CICS-UMA,  
discovered that Paco had respiratory  
alkalosis, so I spoke to Teresa and we put

a plastic bag over his nose and mouth,  
because by breathing your own CO<sub>2</sub> Paco  
would get better. Then that crazy old man  
arrived, pushed us around and told the  
police officer that we were suffocating  
him, but the police officer who is a naco  
believes that suffocating and strangling are  
the same thing and then.....

**LIC SANTOYO** A moment, I didn't  
understand anything, let me see what your  
friend says: Police!

**POLICE** Yes sir agent

**LIC. SANTOYO** Take this one and bring me  
the other one

**ELENA** This, because it is believed

**LIC. SANTOYO** Have you What is your  
name?

**TERESA Teresa Chavarría Flores** to serve  
you my Lic.

**LIC. SANTOYO** At least you are more  
educated than your partner, tell me what  
happened.

**TERESA** Well, look, we were at the soccer  
game and when the medical team scored  
a goal and someone shouted for help and  
then Elenita called me and said that Paco  
was suffering from alkalosis, I gave him  
a bag that we put in his mouth and nose.  
so that he could breathe the CO<sub>2</sub> and the  
carbonic acid that stimulates breathing  
will increase and before Paco could  
recover, the influential man shielded the  
policeman and said that Francisco was  
dead that's why they brought us here.

**LIC. SANTOYO** I don't understand  
anything, what is cramps? Police! Lock  
them up and talk to Dr. Hernández and  
go find out what happened to that Lic.  
Briones and that boy.

### **SCENE III THEY ARE IN A HEARING OF INQUIRIES**

**LIC. SANTOYO** Gentlemen: we are here to clarify this crossword puzzle. They presented these two young women for attempted murder, but there is no accuser nor does the victim appear, however, they declared that while at a soccer game a spectator fainted and they were treating him, We are going to ask Dr. Hernández, who is an eminence as Medical Legal Expert of this delegation. What do you question the young women to determine responsibilities?

**Dr. HERNÁNDEZ** por favor.....

**DR. HERNÁNDEZ** Teresa, no better Elena, who was the one who found out more, what happened

**ELENA** Look, doctor, at the soccer game, as Juana, Paco's companion, told me, he was very excited and apparently he was hyperventilating with or that he was eliminating a lot of CO<sub>2</sub>, as you must know, when a lot is eliminated. CO<sub>2</sub> p due to ventilation, the carbonic acid in the blood decreases, thus losing the 20/1 ratio that must exist between the bicarbonate base and the carbonic acid. When this happens, individuals present a condition of respiratory alkalosis that manifests itself with daze, confusion. and there may be loss of posture with fainting, this is what happened to Paco, well when this happens in a subject the body triggers mechanisms that allow the acid-base balance to be recovered, it can be done in two ways, he wants Tere to do it for him. explain or you already know.

**DR. HERNÁNDEZ** I don't know, however, I never imagined that two students could explain it well, having Tere explain to me those two ways to correct an acid-base imbalance.

**TERESA** Look, Dr. HERNÁNDEZ, if,

as Elena said, the 20 to 1 relationship between bicarbonate base and carbonic acid has been lost because the carbonic acid has decreased, to return to having the same relationship, either we also decrease the bicarbonate base or we increase the carbonic acid. The bicarbonate base is mainly handled by the Kidney, which retains or eliminates it as needed by the body, but in an emergency we can hardly handle it. On the other hand, carbonic acid is mainly handled by the respiratory system since, thanks to a carbonic anhydrase enzyme, carbonic acid is transformed into water and CO<sub>2</sub> and the latter is easily eliminated or retained with ventilation.

What happened to Paco was that when he was breathing very agitated he eliminated a lot of CO<sub>2</sub> and his carbonic acid decreased, so what we did was force him to breathe inside a bag so that he could breathe his own CO<sub>2</sub> that he was eliminating, with that the body It does the reverse reaction, that is, water plus CO<sub>2</sub> equals carbonic acid and quickly recovered its acid-base balance.

**DR. HERNÁNDEZ** Very well, they definitely left me astonished, I thought that perhaps they knew what to do, but not why they did it that way and I positively accept that I was wrong, Mr. agent!! Instead of having these young girls here as detainees, you must congratulate them! since, quite contrary to what I thought, they can save lives and I believe they can never take them.

The police officer whispers something in the ear of the Public Prosecutor's Office.

**LIC. SANTOYO** Well, after the lecture you have given us, and the fact that Paco has already appeared, who is fine and very grateful to you, I only ask that you excuse me, but I did my duty.

Police!!! Go and look for this Mr. Briones,

I'm going to lock him up.

At the end of the three teams, a question and answer session was held to provide feedback on the content to be discussed in class.

## CONCLUSIONS

A sociodrama could be implemented to represent a clinical problem of the contents of the Biochemistry Learning Unit of the Fundamentals of Clinical Nutrition II learning unit of the Respiratory Ap., it served

to carry out feedback on the selected topic. The students showed a lot of enthusiasm and empathy with the teacher and his classmates and that in the end it was even fun for everyone and that in the end it served to establish a participatory dynamic of discussion of the contents addressed and a conclusion was carried out by the teacher and the group.

## REFERENCES

García, V. A. (2017). **El sociodrama, taller de vídeo y taller Balint desde la perspectiva del médico-docente. Alcances y limitaciones.** Rev. Esp. Méd. Quir.;22:61-70.

Imbernon, F. M. y Medina, M. J. L. (2008) **Metodología participativa en el aula universitaria. la participación del alumnado**, 1ª. Ed. Ediciones Octaedro ISBN: 978-84-8063-934-7 <https://www.octaedro.com/appl/botiga/client/img/16504.pdf>

León, U. A. y Col. ( 2018) **Investigaciones sobre prácticas pedagógicas de maestros en formación de instituciones de educación superior.** Recibido: 31/05/2018 • Aprobado: 15/07/2018 • Publicado: 11/11/2018, <http://www.revistaespacios.com/cited2017/cited2017-07.pdf>

Un nuevo modelo educativo para el IPN. (2004). **Instituto Politécnico Nacional. Dirección de Publicaciones.** 1ª. Ed. México, D. F. ISBN 970-36