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Medical Students Working on Disaster Relief Analysis of their competences

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Dedicated to

Everyone that was, is or will be at Oinofyta Refugee Camp. A place I will never forget.

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زندگی زیبا با دوستان است

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Preface

Meraki (μεράκι)

- Greek-

*(n) The soul, creativity, or love put into something;
the essence of yourself put into your work
pronunciation: mA-‘rak-E*

Resumo

Introdução: Num mundo que se depara com crescentes necessidades humanísticas, estudantes de medicina são chamados a colaborar. Depois de ter passado dois meses como voluntária num campo de refugiados na Grécia, enquanto aluna do 5º ano, e de ter feito inúmeras tarefas sozinha, iniciei esta análise. O objetivo deste estudo é avaliar se os currículos médicos estão a preparar estudantes que se queiram voluntariar no socorro a catástrofes e se os estudantes que o fazem se sentem preparados para tal.

Métodos e Materiais: 50 estudantes de medicina de todo o mundo que se voluntariaram em campos de refugiados foram entrevistados usando um inquérito num formulário do Google® que consistia de um questionário inicial sobre informações pessoais e sobre as suas escolas médicas, uma segunda secção com 18 questões sobre o trabalho específico enquanto voluntário e tarefas desempenhadas, uma última secção com duas questões sobre o currículo das suas escolas e uma questão final que pretende uma avaliação do trabalho efetuado enquanto voluntário e um comentário livre. IBM SPSS® Statistics 22 foi usado para analisar os dados para caracterização da população e teste do qui-quadrado. Fiz ainda uma entrevista ao Dr. Michael-John von Hörsten, médico experiente que trabalha em socorro a catástrofes.

Resultados: Relativamente a triagem, a opção mais selecionada foi “Senti-me confiante nesta tarefa” (n=24; 70.6%). Na tarefa histórias clínicas a opção mais selecionada foi “No meu currículo médico tenho disciplinas que me ajudaram nesta tarefa.” (n=24; 60%). Sobre os procedimentos diagnósticos a opção mais selecionada foi “Penso que o meu currículo médico devia mudar para me sentir mais confiante nesta tarefa” (n=9; 60%). Na tarefa aconselhamento a opção mais selecionada foi “No meu currículo médico tenho disciplinas que me ajudaram nesta tarefa” (n=11; 50%). Sobre prescrição ou aconselhamento terapêutico, as opções mais selecionadas foram “No meu currículo médico tenho disciplinas que me ajudaram nesta tarefa” (n=10; 41.7%) e “Penso que o meu currículo médico devia mudar para me sentir mais confiante nesta tarefa.” (n=10; 41.7%). Relativamente a emergência a opção mais selecionada foi “No meu currículo médico tenho disciplinas que me ajudaram nesta tarefa” (n=6; 42.9%). Quanto a prevenção, a opção mais selecionada foi “Senti-me confiante nesta tarefa” (n=11; 73.3%).

Discussão: Na maioria das tarefas há mais estudantes a achar que o currículo deve mudar para se sentirem mais preparados do que o oposto. Apesar disso, também há mais estudantes que pensam terem cadeiras no seu currículo que os ajudam nas tarefas realizadas (conhecimento teórico).

Conclusão: Currículos médicos preparam parcialmente os estudantes para se voluntariarem nestes contextos, especialmente no que toca a conhecimento teórico. Os estudantes não se sentem preparados ou pelo menos confiantes. A minha sugestão depois desta investigação é adicionar-se aos currículos de todas as escolas médicas um curso básico de *skills* e implementar um curso específico para voluntários.

Palavras-chave: Educação médica, estudantes de medicina, currículo médico, voluntariado.

Abstract

Introduction: After volunteering as a 5th year medical student for two months in a refugee camp and do various medical tasks on my own, I started this analysis. The objective of this study was to evaluate if medical curriculum is preparing students to work on disaster relief and if those students feel prepared.

Materials and Methods: 50 medical students from around the world who had been volunteering in refugee camps were interviewed using a Goggle® Form survey consisting of: an initial questionnaire on personal information and information on the medical school, a second section with 18 questions about the specific tasks performed as volunteer, one last section with two questions about the medical curriculum with one last question as final evaluation of the work done while volunteering and a free commentary. IBM SPSS® Statistics 22 was used to analyze data for population characterization and chi-square test. I also interviewed Michael-John von Hörsten on experience as a doctor who works on disaster relief.

Results: Relative to triage, the most selected option was “I felt confident while doing this task” (n=24; 70.6%). On medical histories, the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=24; 60%). About diagnostic procedures the most selected option was “I think my medical degree should change for me to feel more confident on this task” (n=9; 60%). On counseling the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=11; 50%). About therapeutic advice/prescription the most selected options were “In my medical degree’s curriculum I have subjects that helped me through this task” (n=10; 41.7%) and “I think my medical degree’s curriculum should change for me to feel more confident on this task” (n=10; 41.7%). Relative to emergency care, the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=6; 42.9%). Relative to preventive care, the most selected option was “I felt confident while doing this task” (n=11; 73.3%).

Discussion: Through most tasks, there are more students stating their curriculum should change for them to feel more prepared than the opposite. Despite that, there are more students thinking they have subjects helping them through performed tasks (theoretical-knowledge).

Conclusion: Medical curriculums are partially preparing students to work on disaster relief, especially in what comes to theoretical knowledge. Students don’t feel prepared or at least confident. My suggestion after this investigation it’s on adding this practical skills course to the curriculum of all universities and implementing a volunteer specific course.

Key-words: Disaster relief, medical students, medical education, curriculum, volunteer.

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Introduction

Concept Clarification

According to the Oxford English Dictionary¹, the word refugee means: “A person who has been forced to leave his or her home and seek refuge elsewhere, especially in a foreign country, from war, religious persecution, political troubles, the effects of a natural disaster, etc.; a displaced person.”

According to the Office of the United Nations High Commissioner for Refugees, UNHCR², “refugees are people fleeing conflict or persecution. They are defined and protected in international law, and must not be expelled or returned to situations where their life and freedom are at risk.”

According to the same dictionary¹, the word migrant means: One who moves, either temporarily or permanently, from one place, area, or country of residence to another.

According to UNHCR, “internally displaced people (IDPs) have not crossed a border to find safety. Unlike refugees, they are on the run at home. While they may have fled for similar reasons, IDPs stay within their country and remain under the protection of its government, even if that government is the reason for their displacement.”²

The 2015 refugee crisis details

According to the International Organization for Migration - IOM’s publication *Fatal Journey’s*: “Over the last 20 years, it is likely that more than 60,000 migrants have embarked on fatal journeys around the world, never to return to their loved ones.”³ and this accounts only for the deaths that are recorded by this organization; in many cases the bodies are never found or identified.

Global forced displacement reached record-high numbers in 2015. According to UNHCR’s publication: *Global Trends*, “By the end of the year, 65.3 million individuals were forcibly displaced worldwide as a result of persecution, conflict, generalized violence, or human rights violations. This is 5.8 million more than the previous year (59.5 million).”⁴

Analyzing the numbers, we reach a total of 65.3 million individuals displaced worldwide with 21.3 million persons being refugees, 40.8 million of internal displaced persons and 3.2 asylum seekers. With an average of 24 people being displaced from their homes, every minute of every day during 2015.⁴

According to the same, UNHCR’s publication, “Unaccompanied or separated children in 78 countries - mainly Afghans, Eritreans, Syrians, and Somalis - lodged some 98,400 asylum applications in 2015.”⁴

According to IOM's publication, *Fatal Journeys*: "The International Organization for Migration estimates that at least 5,400 migrants died or went missing on migratory routes across the globe, with an additional 3,100 losing their lives in the first five months of 2016. 2015 was the deadliest year on record for the Mediterranean, with at least 3,770 persons lost at sea."³ This numbers, for the first semester of 2016, represent an increase in 28% when compared to the same period of 2015, and a 52% increase from the same period in 2014.⁵ According to IOM, the real number is actually unknown as many deaths are never registered.³ Before reaching the Mediterranean many refugees make dangerous journeys and take hard routes as crossing the Sahara Desert in order to get to Italy and walking through the Middle East to reach Greece which were the prevalent migration routes to Europe in the first six months of 2016.⁵ The primary dangers on this roots were: harsh natural environments that lead to drowning, asphyxiation, suffocation and hypothermia, lack of food and shelter and violence inflicted by smugglers and national authorities, for example gun violence inflicted by guards on the Syria-Turkey border.⁵⁻⁷ Across Europe uncountable official and non-official refugee camps provide shelter to millions of the previous referred people. Thinking of medical students that, as me, like to work in disaster relief and volunteer on this situation and had already volunteered on this camps, I propose to investigate if medical curriculums are preparing students to do this kind of work or if they need to be revised taking in consideration the refugee crisis which is a reality in Europe right now.

Methods and Materials

My personal experience volunteering in a refugee camp

The 2015 refugee crisis moved me in a particular way since the beginning. After some discussions about it and after some compelling Facebook® posts I decided that helping should be more than that. However, it took me almost one year to realize what I could do and how far could I go. It was the 22nd of March 2016, I had just turned 23 years old and was a 5th grade medical student, as I woke up and turned on the television I saw the news about the Brussels bombing⁸ and that was it for me. I wanted to help the ones involved in the refugee crisis, but what compelled me was that I wanted to fight terrorism. As I own no weapons and I have no fighting skills, the only thing I could do was helping people escaping war and moving on into Europe, as refugees. So I decided to go. I applied to many institutions and organizations, I sent my curriculum and tried to be accepted, as a medical student, to a refugee camp somewhere in Greece. That's why I wanted to become a doctor in the first place, so why not starting ? Adventist Help¹ was the first yes I got, and I will never forget that day. I received an email saying they would love to have me on the team as soon as possible. I booked my flight and arrived Oinofyta Refugee Camp on the 19th May 2016. I was informed that the next day, my first day, I was going to be the "doctor on call" since I was the only volunteer available to work on the clinic on that day. Me, a 5th year medical student with no practice but some supervised medical assistance. I was going to be a doctor, and more than that, the doctor "on call" which implied not only the regular opening hours of the clinic (from 9am to 5pm) but also any emergency that could come along at any hour. I took the challenge, conscious that on these kinds of scenarios we do what we can and that I would do what I learned, only what I knew and was confident on doing, and most of all... no harm. I took the challenge hoping that on the next days I would have more volunteers arriving and that if there was anything I couldn't do I would have the Greek Health System, overload with not only the Greek population but also all the refugees, to back me up. The camp had, at that moment, nearly 150 habitants, most of them children and Adventist Help was the organization providing medical care to all of them, using an old bus that was turned into a clinic². Most of the things equipping the bus were donated, including medicines, and we worked with a pretty amazing range of diagnose equipment: stethoscopes, scales, temperature scales, blood pressure meters, ECG machine, a portable ultrasound machine, fetal doppler, glucometers, monitoring devices;³ we also had some emergency care machines

¹ <http://adventisthelp.org/>

² See images 1 and 2 on the first attachment

³ See images 3, 4 and 5 on the first attachment

that later were used to equip a full ambulance⁴. The language was the first problem I had to deal with. It's hard to take an accurate medical history when you need to have the details translated twice, since many refugees couldn't speak English or Portuguese and I couldn't as well speak their languages. I had to find ways to overcome that difficulty and make sure they could understand what I was telling them to do, the medications I was handing them and advising them to take. So I started drawing it on a card with a time schedule and numbering the pills in bags so that it could be understood in any language.⁵ The first weeks I was there we had no translator on the team and, a 13 and a 15 year old refugee girls and a 17 years old refugee boy, all self-taught English speakers, were my huge help at the clinic and that way we made it through. If it's already hard, facing a different culture, needing to learn how to behave culturally in order not to be disrespectful it's even harder trying to figure out ways to communicate without speaking while practicing medicine... By the end of my first month in Greece I could already use some Farsi medical terms and understand the basic answers to that. My first days went down calmly and most of the work I did as a doctor was primary care, measuring blood sugar, treating simple respiratory tract infections and wound caring. However, had the first need to prescribe on a patient that was having seizures after his epilepsy usual medication had finished. I had to use the medication we had from donations since we didn't have it on our stock and couldn't buy it without a prescription or fix a neurologist appointment on the Greek system in such a hurry (usually it takes weeks/months). Advising on medication was one of the things that bothered me the most. As a medical student, I can't prescribe but over there we had a full stock of medication that can and cannot be sell without prescription and that was donated from all over the world to, and for, the refugees. It's their medication, and they could use it has they wish but they decided on their best interest to let the clinic have it and let us advise them on what to take. Five days after my arrival we had the first real emergency on the clinic. I was not alone anymore; a neurosurgeon female doctor had arrived the day before and we were just preparing to go home when a 10-year-old girl entered the bus telling she had taken a handful of pills. If I was alone that day I would only have called an ambulance and sent her to the hospital because I had no knowledge and it was the moment I felt the most unsure since I was on the camp. I had an emergency internship on a hospital but what can you do when you are not on a hospital? Which subject, on the medical curriculum, prepares us for that? We are instructed to call the emergency number and all of us know that, but we were 1 hour away from Athens and all the times we called the ambulance we were instructed that we should drive the patients ourselves. So, what to do? That was when I learnt about charcoal and its uses. That was what that prepared and experienced on emergency fields doctor used to make the little girl throw up all the intact pills she had just took. A simple compound I never ever heard of on medical school.

⁴ See image 6 on the first attachment

⁵ See image 7 on the first attachment

The next days were also calm and steady and after the incident with the girl we went back to the usual primary care, diabetes and hypertension evaluation, basic respiratory tract infections, virus and wound care. As my experience revealed to me, empathy is a magic word on this cases, more than being a doctor you need to be the person who gets to know all the tragedy on this lives. You need to learn how to see the big picture, how depression hides in every smile, how background affects decisions, how grief is a constant pain that numbs a lot of symptoms, you need to learn that this people walked through more kilometers than you can imagine, with no water or food, feeling neither hot nor cold, moved by fear and willing to live. After that you need to think that they found themselves in new countries and crossed into Greece in a plastic boat, some of them had accidents, some of them watched family members being killed by smugglers or drowning. All of them suffered unbearable things. And then you need to think of that and get that into your system every time you try to make a history because, if you choose to treat them as regular everyday-basis primary care patients, you will miss a lot of important things. “Your bedside manner”, as I heard many times in the camp, matters more for everyone in general, and for this people in specific, than the pills you choose to give. On the 31st of May, we moved from the bus to a much cooler, bigger and well equipped donated IsoBox®. This transference happened just at the right moment, when the camp was increasing the resident’s number and as we needed more means to provide the best care possible. ⁶

On the first day working full time on the new clinic, instead of the bus, we had a 35-year-old 5 months pregnant lady having tonic-clonic seizures lasting approximately 2-3 minutes by her tent, with tongue biting but no urinary incontinence. Worried about the possibility of eclampsia we took a medical history from the husband after monitoring her on the clinic. All the blood pressure measurements were normal and as the husband informed us that has been happening for the last 8 years and that she is not medicated, we understood that was a case of non-diagnosed epilepsy. Since we had no EEG machine or the possibility of doing brain imaging, diagnose needed to be based on the history and she started on an anti-epileptic that day.

On the 3rd of June, I was alone at the clinic again, the only volunteer, and the doctor on call, the working day was soft but once home the emergency phone rang and I had to rush to the camp because of a 49-year-old type-2 diabetic and asthmatic female with a high fever. It turned out to be a urinary infection but having to diagnose and choose treatment alone and without the best possible means to do it since I had no possibility of doing a bacterial culture, scared me a lot. She was one of the patients I used to see as primary care because of the poorly controlled diabetes, medicated before on Afghanistan it stopped working as she crossed to Europe and she was struggling with it on the camp. I couldn’t remember all the steps on type-2 diabetic’s treatment so I read all the guidelines once I went home. I had been in touch with the

⁶ See image 8, 9 and 10 on the first attachment

guidelines before in my Primary Care Internship so I already knew where to search which was a great asset. By the 5th of June I was consulting around 40 patients per day in the clinic, all alone, and in a lot of different specialties: from post-traumatic stress or even psychotic bursts to head trauma sequelae, eye inflammations⁷, skin rashes, spider bites⁸, pregnant women and gynecological infections, cardiac arrhythmias⁹, emergency care, post-natal care, childhood diseases as chickenpox or viral infections and, of course, primary care as diabetic and hypertensive guidance. At medical school, I usually have one Internship at a time so it was hard having to deal with all the specialties at the same time, every day I would go home with new things to study and review. As practical skills, I needed to be able to use all the diagnose methods available and to perform some procedures as placing catheters for IV medication, administering IM and IV injections and suturing which I had also never done but was confident on doing as I was familiar with some skills by a simulation based training. Another thing I used to do, and had to do, at the camp was ultrasound to all the pregnant ladies. I had watched a lot of ultrasounds being performed on pregnant ladies in all trimesters but I had never performed one myself, so when I realized we had 7 pregnant ladies in the camp I decided to study and practice ultrasound. At first I couldn't even find the heart and I would rather use the McDonald's rule to find the gestational age, and the Doppler to find the heartbeat instead of the ultrasound machine, but when a Psychiatrist with Gynecological training came to volunteer in the camp we called every pregnant female on the clinic and I practiced until I could even guess the gender. And on the 7th June night we received an emergency call from one of those pregnant ladies, the water broke and she was having contractions, we went to the camp again and called the ambulance, as we were informed it would take a while for the ambulance to arrive we started preparing the clinic for an eventual delivery and when assessing the mother, we noticed there was meconium on the water. We drove her to the hospital ourselves then and she had a caesarian section but, the possibility of having to assist a delivery made me anxious one more time. Again, that was one of the things I simply watched while in my medical student Internship I had never ever even simulated it so what if I needed to do it? What if it happened when I was alone at the clinic? What if I go on the street on my regular life in Portugal and I must assist a delivery in a public place for some reason? I was not prepared and I am not prepared because I never trained it, but I may need to do it... I went back home on the 16th of June for my final 5th year university exams with a bought ticket to go back to Greece, to the same camp, on the 16th July, once I was done with my finals.

This second time on the camp I was not working in the clinic anymore but I still was consulted

⁷ See image 11 on the first attachment

⁸ See image 12 on the first attachment

⁹ See image 13 on the first attachment

by some residents since they knew me as a medical student from my previous time there. I was dealing with administrative procedures and logistics, since I was replacing the camp manager while she was on vacations, so it was my job to talk to all the new arrivals and check for signs of infectious diseases, I had to do quick questions to all of them and look for head lice, scabies, chicken pox, tuberculosis, hepatitis, among others... And I was able to diagnose some of that. Despite not doing only medical tasks I think my medical curriculum, which includes a Leadership and Management subject prepared me a little bit for the job I had to do on this second time on Greece, being able to coordinate various teams volunteering at the camp and being able to manage all the problems of the residents and attend their logistic needs, that I think I own a little bit to this subject and to my medical curriculum as well. During my second time on the camp, the number of camp occupants increased from nearly 200 to 750 and medical assistance became even more needed as lots of them had been staying in camps before with less conditions and presented with skin rashes, bloody diarrheas, head lice, scabies, and severe dehydration, among other conditions. All the help was needed and I had to step in lots of times even to provide quarantine for some patients since that was a logistic task that was simplified by the fact that I was a medical student and could understand the real needs behind every isolation. Among this new occupants we had some particular cases as drugs withdrawal, cancer or dementia, problems that are already hard to face and deal with in regular conditions, and even more when you are in a refugee camp, with a well-equipped medical clinic but not all the needed things to support this particular cases. I came back home on the 10th August and have been in Portugal ever since. Despite that I communicate with the camp and with the camp occupants almost every day. My life, not only as a medical student, changed forever by this experience and I truly think that more students should be able to do this.

Objective

After my experience of two months volunteering in a refugee camp, I had as objective to understand if medical students who volunteered in refugee camps felt prepared to do so, and if they think their medical school's curriculum is preparing them to feel comfortable on these situations.

Methods

I prepared an online survey using Google Forms® that I wanted to apply to my population in study: medical students who had or were volunteered with refugees. Using 28 social media pages⁹⁻³⁶ of volunteers related to the refugee crisis I shared a post asking for medical students who had volunteered with refugees and wanted to collaborate on this study and asking to being contacted by email or Facebook® message. After that I started being contacted by medical students themselves who wanted to participate and who knew other medical students who also had volunteered to those I sent by email or Facebook® message the URL link to my Google® form survey. I was also contacted by managers of organizations who were volunteering on the camps and started applying the online Google® form survey I had prepared to their medical student volunteers. The inclusion criteria were being a medical student from any university around the world, or a first-year doctor, so that the only year completed on formation was years of medical school (from 1st to 6th) and had previous history of volunteering with refugees at any time, in any place, for any period or being an active volunteer at the time of the survey. The exclusion criteria were being a graduated doctor or answering the questionnaire with only "this doesn't apply to my questions" answers. 54 answers from volunteers were received, from 20th December 2016 until 27th January 2017, from all around the globe, from those I excluded four and started analyzing data from a total of 50 answers. The exclusions were made based on the previously defined criteria, one because he was already a graduated doctor, two because they only answered the questionnaire with "this doesn't apply to my questions." And another one because his answers of tasks didn't match the answers given latter.

After collecting the survey information, I analyzed the statistical data to evaluate the results. I used IBM SPSS® Statistics 22 and started by analyzing each variable separately, measuring frequencies and percentages when the variables were nominal/categorical. Then I analyzed further frequencies for separate variables and to compare variables performing the chi-square test when relating nominal/categorical variables. The results were considered significant statistically valid if the p value on the chi-square test or t-test was inferior to 0.05.

I also interviewed Michael-John von Hörsten, chief medical officer at International SOS, an experienced doctor who does disaster relief all around the world to understand what difficulties medical students face, while volunteering on these scenarios so that I could confront his answers with the ones of the survey.

Materials

An online Google form survey¹⁰ consisting of the following sections was applied to the volunteers:

- An initial questionnaire on personal information and information on the medical school the student is enrolling.
- A second section with 18 questions about the specific work while volunteering.
- One last section with two questions about the medical curriculum at their medical schools with one last question which is a final evaluation of the work done while volunteering.
- A free commentary

An interview to Doctor Michael-John von Horsten¹¹, consisting of 5 questions about his experience as a doctor who works on disaster relief and with volunteers from all around the world was also applied

¹⁰ See attachment 2

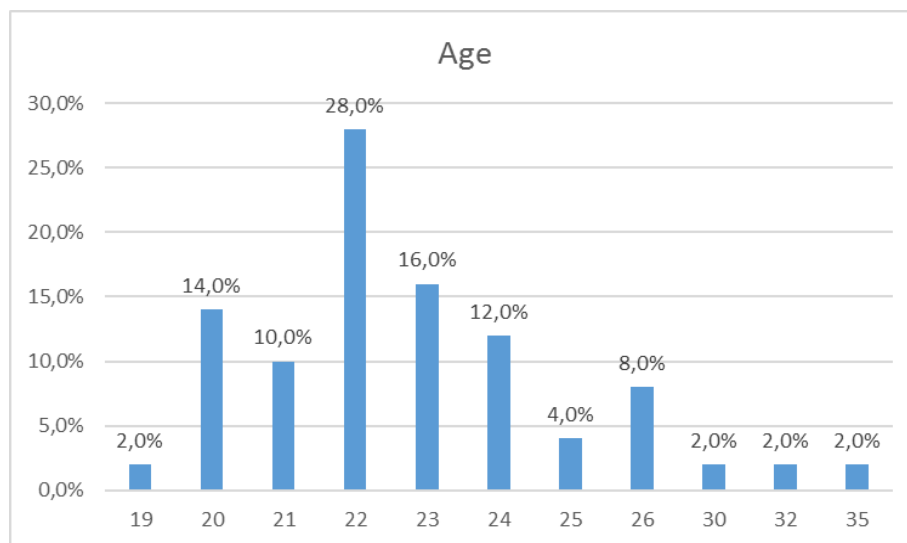
¹¹ See attachment 3

Results

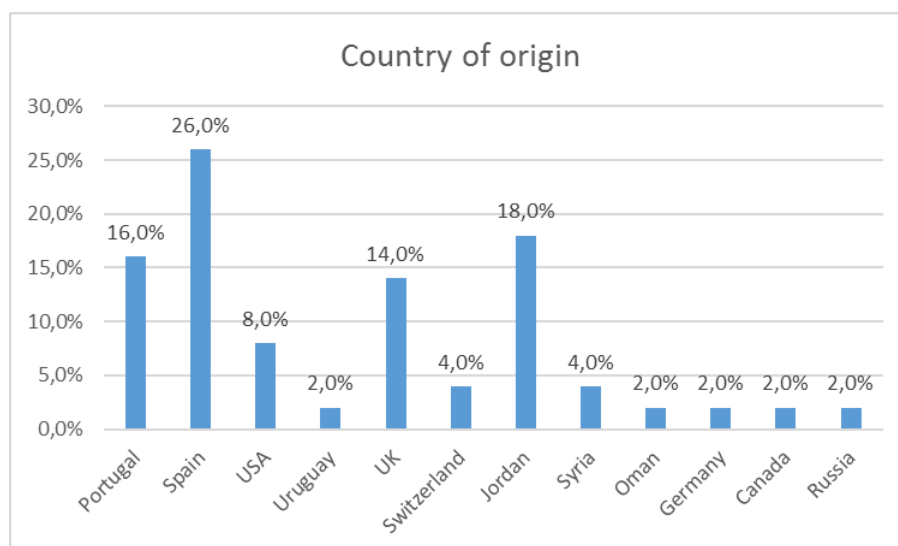
These results were obtained with the survey answers:

Table 1: Age

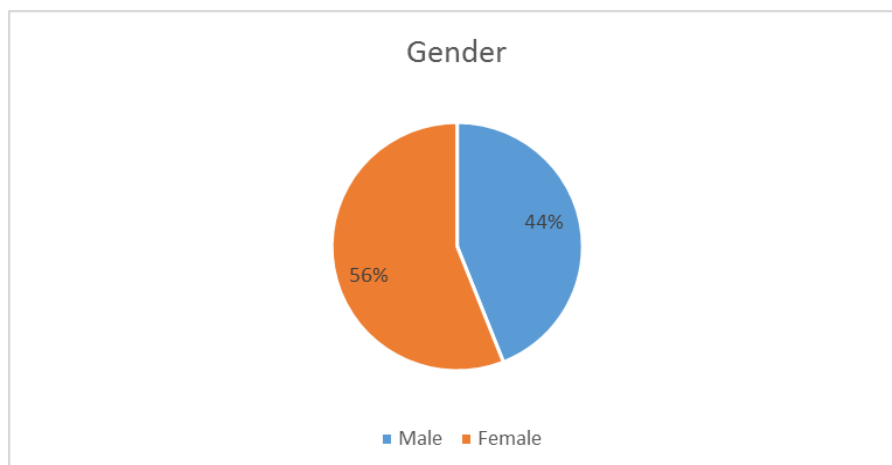
	Mean (Standard Deviation)	Minimum/Maximum
Age (n=50)	23.02 (2.99)	19/35



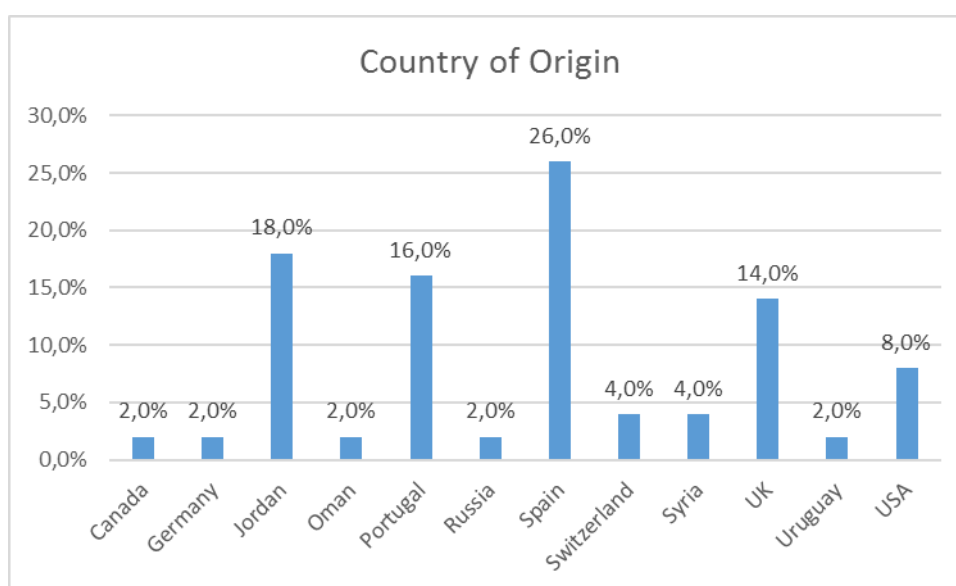
Graphic 1: Distribution of students by age



Graphic 2: Distribution of students by country of origin



Graphic 3: Distribution of students by gender



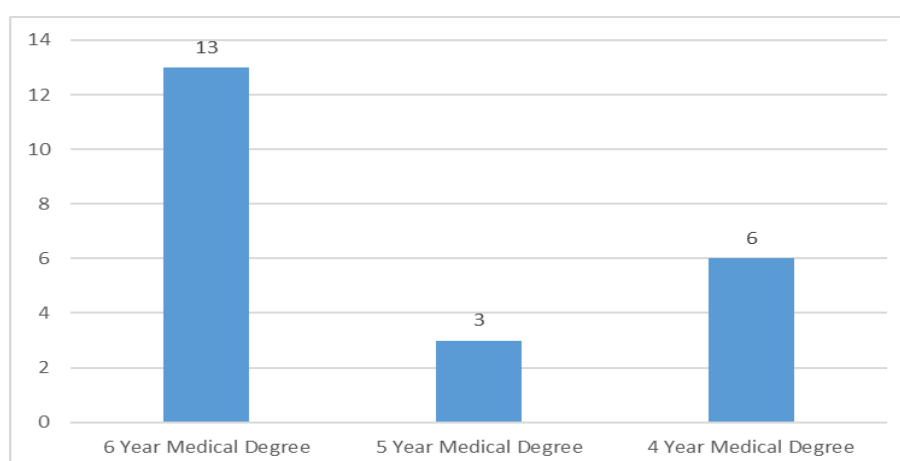
Graphic 4: Country representation based on the aggregation of the number of students per universities on that country

From 8 different countries, 22 universities are represented on this study. The country that has more universities represented is UK with 8 universities and one student from each university answering the questionnaire (n=8; 16%), but the major country representation based on universities is from Jordan with a single university represented “Jordan University of Science and Technology” but a total of 14 students out of 50. (n=14; 28%). Syria, Oman, Germany and Russia were countries represented on the nationalities that we don’t see represented on the universities list of countries because the students with these nationalities answered the survey are studying on different countries.

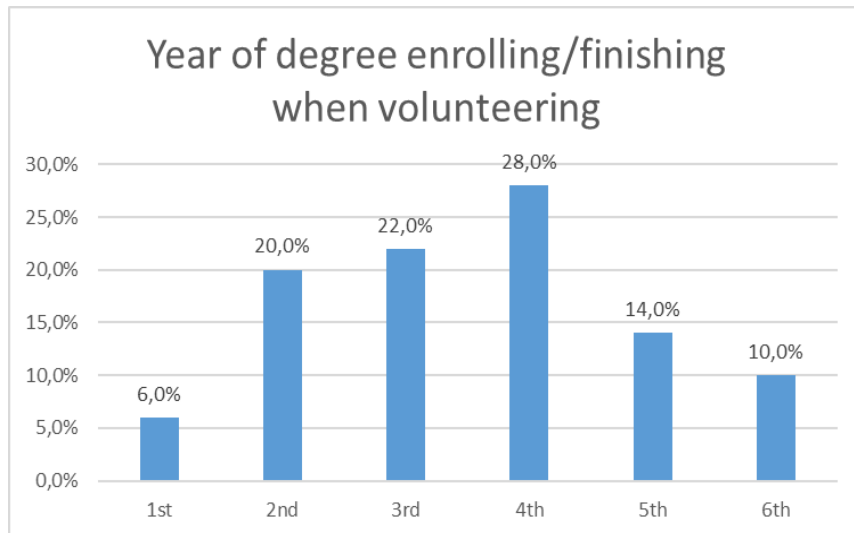
Of this 22 universities, there are 6-years curriculum medical schools (n=13, 59%); 5-year curriculum medical schools (n=3; 14%) and 4-year curriculum medical schools (n=6; 27%).

Table 2: Universities per country and number of students per university.

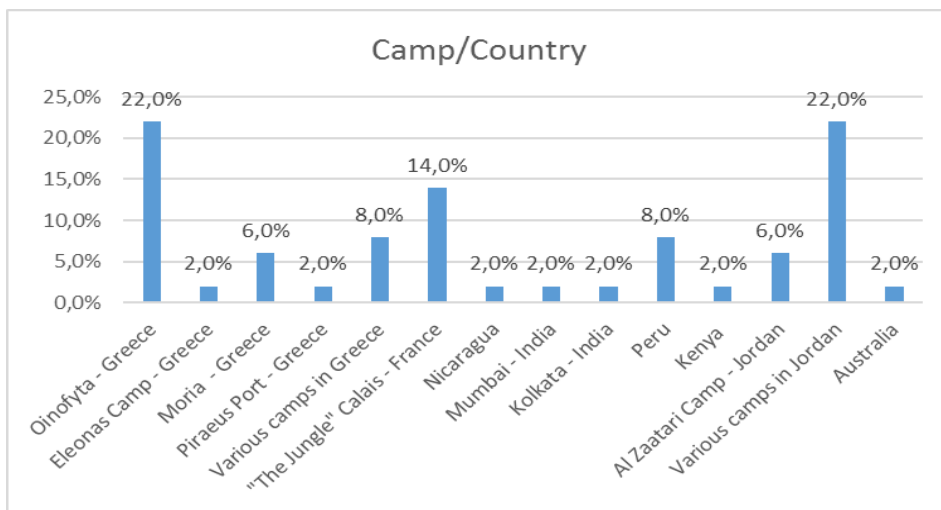
Country	University	Number of students:
Portugal	Departamento de Ciências Biomédicas e Medicina da Universidade do Algarve	1
	Faculdade de Ciências da Saúde da Universidade da Beira Interior	3
	Universidade Nova de Lisboa	4
Spain	Euskal Herriko Unibertsitatea / Universidad del País Vasco	1
	Universidad de Navarra	10
	University of Barcelona	2
USA	The George Washington University School of Medicine	1
	UConn School of Medicine	1
	David Geffen School of Medicine	1
Uruguay	Universidad de la Republica	1
UK	University of Liverpool: Liverpool Medical School	1
	University of Cambridge	1
	Barts and the London	1
	Edinburgh Medical School	1
	Swansea Medical School	1
	University of Leicester	1
	University of Dublin, Trinity College	1
	University of Oxford	1
Switzerland	University of Zurich	1
	University of Basel	1
Jordan	Jordan University of Science and Technology	14
Canada	University of Sydney	1



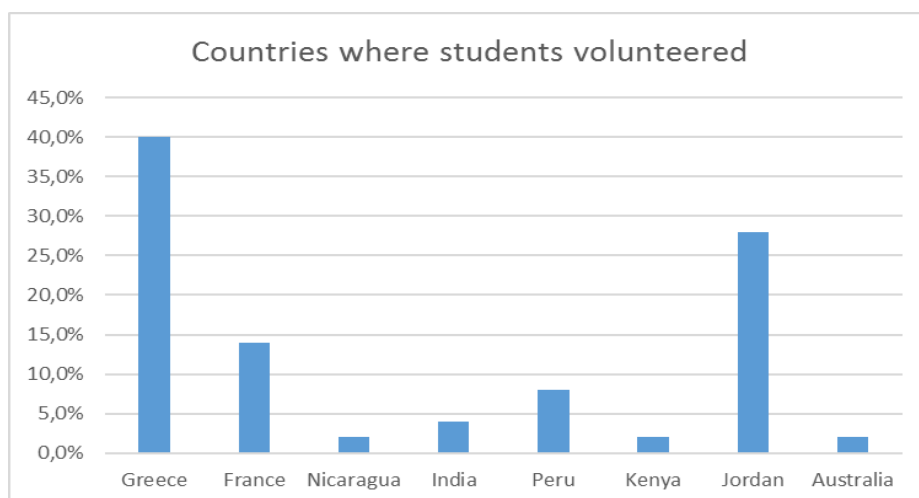
Graphic 5: Number of medical schools accordingly to number of years in curriculum



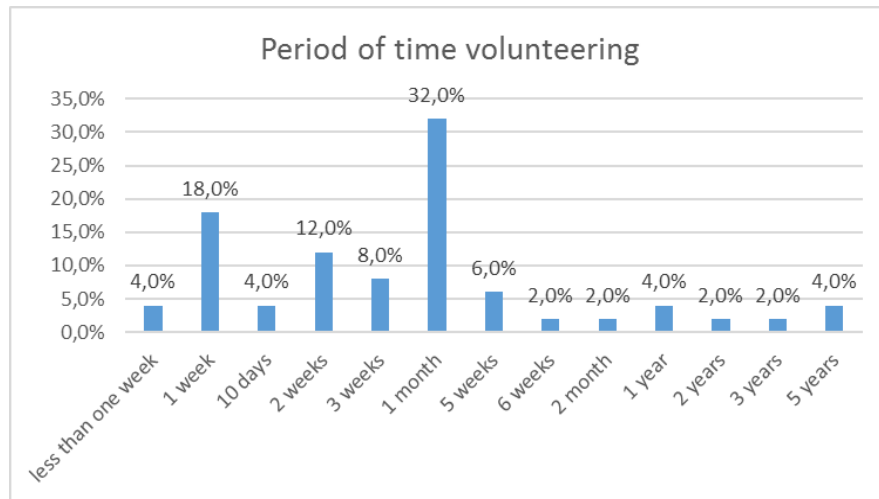
Graphic 6: Year of degree enrolling/finishing when volunteering



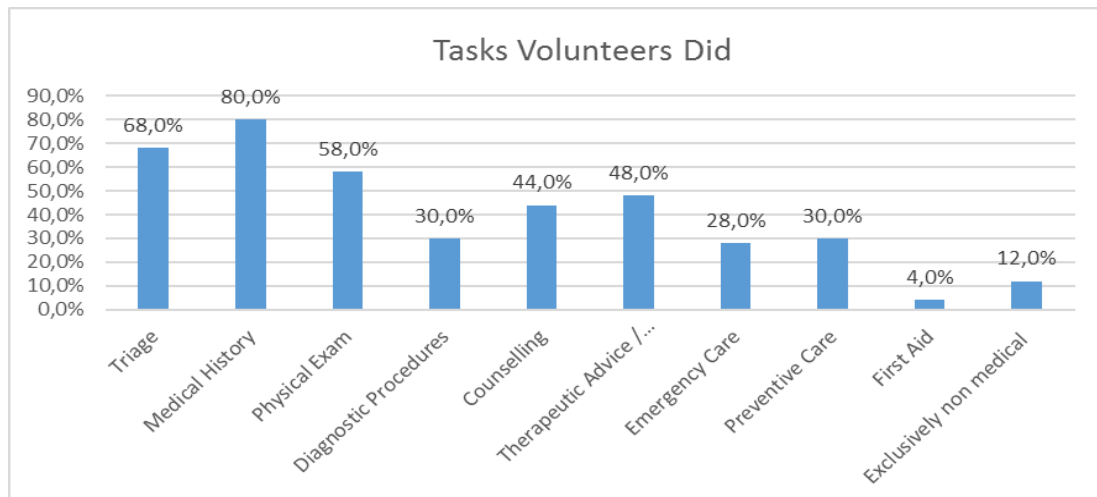
Graphic 7: Location of the volunteering program (camp and country)



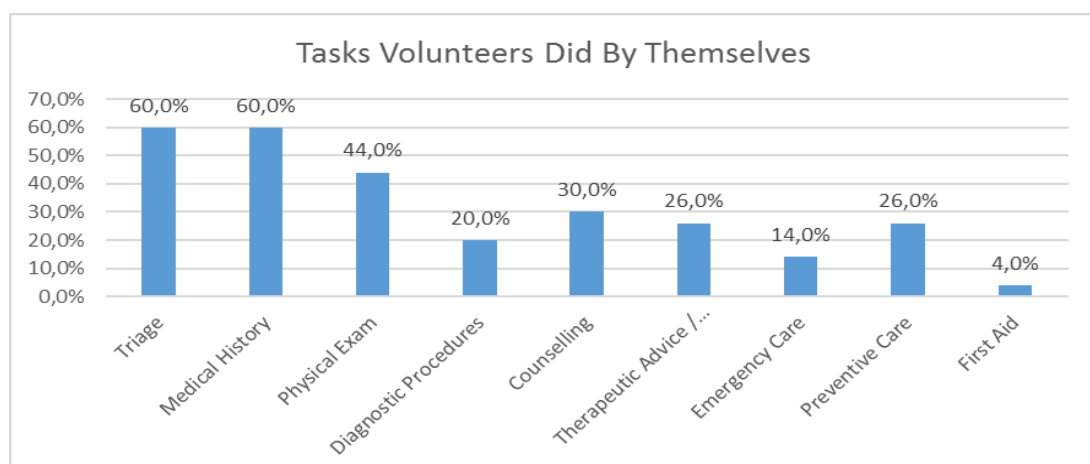
Graphic 8: Location of the volunteering program (country)



Graphic 9: Period of time students volunteered for.

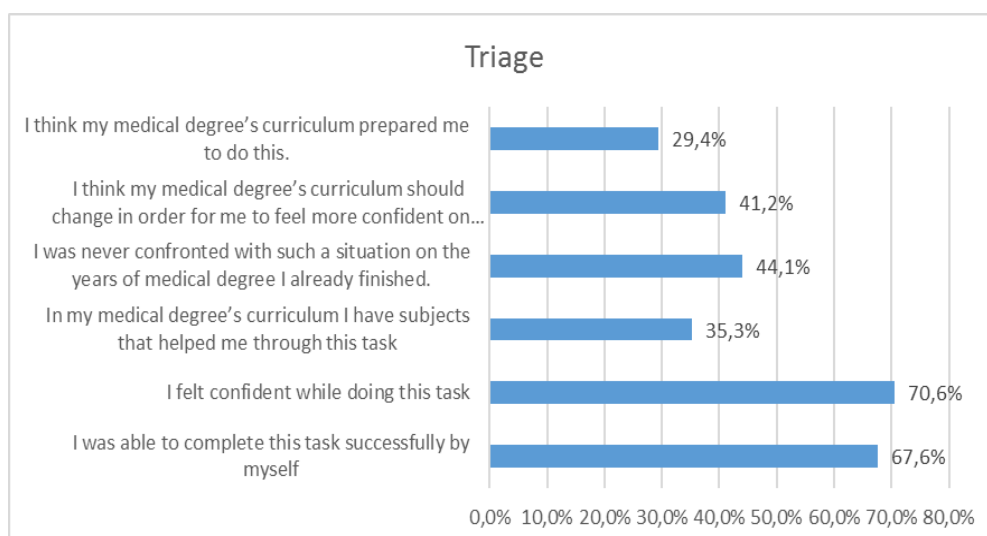


Graphic 10: Tasks performed by students as volunteers



Graphic 11: Tasks performed by students as volunteers, by themselves

On a total of 34 students (n=34) who claimed to have performed triage while volunteering, the answers on Graphic 14 were obtained:



Graphic 12: Answers from students who performed “Triage” as volunteers

There is no correlation between students who felt more confident doing triage and those who could complete the task successfully by themselves. ($X^2=14.695$)

Table 3: Association between feeling confident while doing triage and successfully completing the task by themselves.

Confident	Successfully		TOTAL:	X^2 (p)
	No	Yes		
No	8 (23.5%)	2 (5.9%)	10 (29.4%)	14.695 (¹²)
Yes	3 (8.8%)	21 (61.8%)	24 (70.6%)	
TOTAL:	11 (32.4%)	23 (67.6%)	34 (100%)	

Those who felt their curriculum prepared them to do “triage” didn’t recognize having subjects on their curriculum that resembled the task. ($X^2=1.342$; $p=0.247$)

Table 4: Association between having subjects that resembled the task triage and feeling their medical curriculum prepared them to do so

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	17 (50.0%)	7 (20.6%)	24 (70.6%)	1.342 (0.247)
Yes	5 (14.7%)	5 (14.7%)	10 (29.4%)	
TOTAL:	22 (64.7%)	12 (35.3%)	34 (100%)	

¹² It was not possible to obtain p value since 1 cell (25%) was expected to have a value < 5. Minimum count expected is 3.24.

Those who felt confident doing triage didn't recognize having subjects on their curriculum that helped them through the task. ($X^2=0.174$)

Table 5: Association between having subjects that resembled the task triage and feeling confident while doing so

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	7 (20.6%)	15 (44.1%)	22 (64.7%)	0.174 (¹³)
Yes	3 (8.8%)	9 (26.5%)	12 (35.3%)	
TOTAL:	10 (29.4%)	24 (70.6%)	34 (100%)	

Those who claimed their medical curriculum should change for them to feel more prepared didn't state they were never confronted with such a situation. ($X^2=1.638$; $p=0.201$)

Table 6: Association between thinking the curriculum should change and stating never being confronted with such situation, for triage.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	13 (38.2%)	7 (20.6%)	20 (58.8%)	1.638 (0.201)
Yes	6 (17.6%)	8 (23.5%)	14 (41.2%)	
TOTAL:	19 (55.9%)	15 (44.1%)	34 (100%)	

Those who volunteer for a greater time didn't feel increasingly confident doing triage. ($X^2=4.163$)

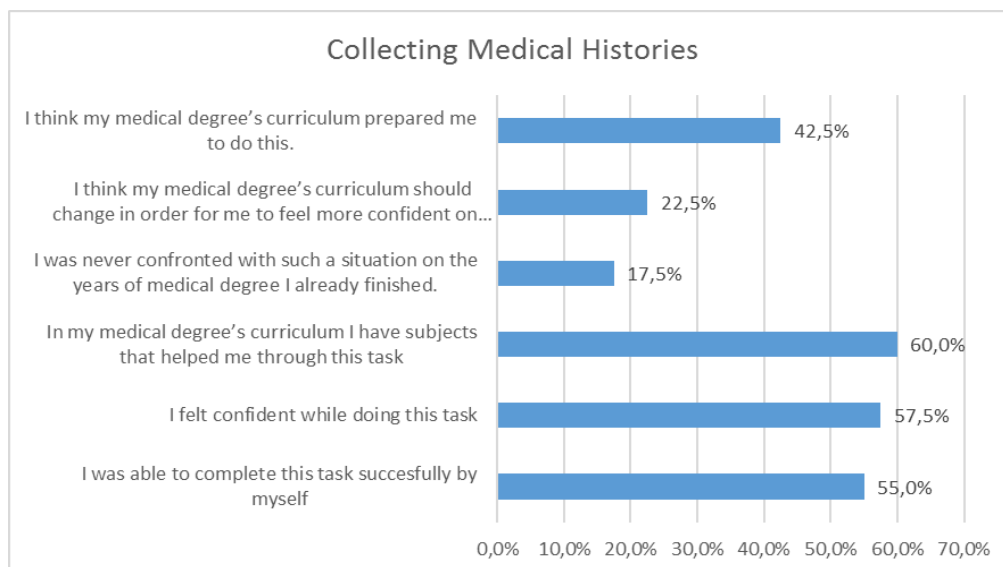
Table 7: Association between the time spent volunteering and the degree of confidence while doing triage.

Period	Confident		TOTAL:	X^2 (p)
	No	Yes		
1 month or more	8 (23.5%)	10 (29.4%)	18 (52.9%)	4.163 (¹⁴)
less than 1 month	2 (5.9%)	14 (41.2%)	16 (47.1%)	
TOTAL:	10 (29.4%)	24 (70.6%)	34 (100%)	

¹³ It was not possible to obtain p value since 1 cell (25%) was expected to have a value < 5. Minimum count expected is 3.53.

¹⁴ It was not possible to obtain p value since 1 cell (25%) was expected to have a value < 5. Minimum count expected is 4.71.

On a total of 40 students (n=40) who claimed to have taken medical histories while volunteering, the answers on Graphic 15 were obtained:



Graphic 13: Answers from students who collected “Medical Histories” as volunteers

Those students who felt confident history-taking could complete the task successfully by themselves. ($\chi^2=4.639$; $p= 0.031$)

Table 8: Association between feeling confident while collecting medical histories and successfully completing the task by themselves.

Confident	Successfully		TOTAL:	χ^2 (p)
	No	Yes		
No	11 (27.5%)	6 (15.0%)	17 (42.5%)	4.639 (0.031)
Yes	7 (17.5%)	16 (40.0%)	23 (57.5%)	
TOTAL:	18 (45.0%)	22 (55.0%)	40 (100%)	

Those who felt their medical curriculum prepared them to history taking didn't recognize subjects on their medical curriculum helped them through that task. ($\chi^2=19.710$)

Table 9: Association between having subjects that resembled collecting medical histories and feeling their medical curriculum prepared them to do so

Prepared	Subjects		TOTAL:	χ^2 (p)
	No	Yes		
No	16 (40%)	7 (17.5%)	23 (57.5%)	19.710 (¹⁵)
Yes	0 (0%)	17 (42.5%)	17 (42.5%)	
TOTAL:	16 (40%)	24 (60%)	40 (100%)	

¹⁵ It was not possible to obtain p value since 0 cells were expected to have a value < 5. Minimum count expected is 6.80.

Those who felt confident history taking recognized some subjects on their medical curriculum helped them through that task. ($X^2 = 4.365$; $p = 0.037$)

Table 10: Association between having subjects that resembled the collecting medical histories and feeling confident while doing so

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	10 (25.0%)	6 (15.0%)	16 (40.0%)	4.365 (0.037)
Yes	7 (17.5%)	17 (42.5%)	24 (60.0%)	
TOTAL:	17 (42.5%)	23 (57.5%)	40 (100%)	

Those who claimed their medical curriculum should change for them to feel more prepared didn't state they were never confronted with such a situation. ($X^2 = 0.328$)

Table 11: Association between thinking the curriculum should change and stating never being confronted with such situation, for collecting medical histories.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	25 (62.5%)	6 (15%)	31 (77.5%)	0.328 (¹⁶)
Yes	8 (20.0%)	1 (2.5%)	9 (22.5%)	
TOTAL:	33 (82.5%)	7 (17.5%)	40 (100%)	

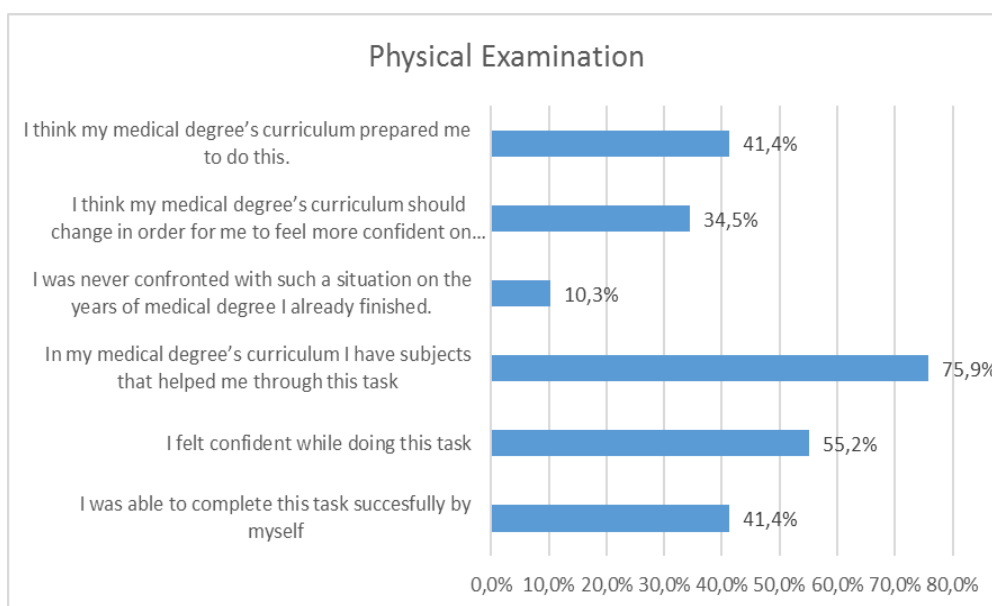
Students who spent more time volunteering didn't feel increasingly confident while history-taking ($X^2 = 0.175$; $p = 0.676$)

Table 12: Association between the time spent volunteering and the degree of confidence while collecting medical histories

Period	Confident		TOTAL:	X^2 (p)
	No	Yes		
1 month or more	10 (25.0%)	12 (30.0%)	22 (55.0%)	0.175 (0.676)
Less than 1 month	7 (17.5%)	11 (27.5%)	18 (45.0%)	
TOTAL:	17 (42.5%)	23 (57.5%)	40 (100%)	

¹⁶ It was not possible to obtain p value since 1 cell was expected to have a value < 5. Minimum count expected is 1.58.

On a total of 29 students (n=29) who claimed to have performed physical exams while volunteering, the answers on Graphic 16 were obtained:



Graphic 14: Answers from students who performed “Physical Examination” as volunteers

There is no statistical correlation between feeling confident performing physical examination and successfully completing the task by themselves ($\chi^2 = 6.564$)

Table 13: Association between feeling confident while performing a physical exam and successfully completing the task by themselves.

Confident	Successfully		TOTAL:	χ^2 (p)
	No	Yes		
No	11 (37.9%)	2 (6.9%)	13 (44.8%)	6.564 (¹⁷)
Yes	6 (20.7%)	10 (34.5%)	16 (55.2%)	
TOTAL:	17 (58.6%)	12 (41.4%)	29 (100%)	

¹⁷ It was not possible to obtain p value since 0 cells were expected to have a value < 5. Minimum count expected is 5.38.

Those who felt confident history taking didn't recognize subjects on their medical curriculum that helped them through that task. ($X^2= 6.237$)

Table 14: Association between having subjects that resembled performing physical exam on patients and feeling confident while doing so

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	6 (20.7%)	1 (3.4%)	7 (24.1%)	6.237 (¹⁸)
Yes	7 (24.1%)	15 (51.7%)	22 (75.9%)	
TOTAL:	13 (44.8%)	16 (55.2%)	29 (100%)	

Those who claimed their medical curriculum should change for them to feel more prepared performing physical examinations didn't state they were being confronted with such a situation on their curriculum. ($X^2=0.002$)

Table 15: Association between thinking the curriculum should change and stating never being confronted with such situation.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	17 (58.6%)	2 (6.9%)	19 (65.5%)	0.002 (¹⁹)
Yes	9 (31.0%)	1 (3.4%)	10 (34.5%)	
TOTAL:	26 (89.7%)	3 (10.3%)	29 (100%)	

Those who felt their medical curriculum prepared them to physical examination didn't recognize subjects on their medical curriculum helped them through that task ($X^2= 6.513$)

Table 16: Association between having subjects that resembled performing physical exam on patients and feeling their medical curriculum prepared them to do so

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	7 (24.1%)	10 (34.5%)	17 (58.6%)	6.513 (²⁰)
Yes	0 (0%)	12 (41.4%)	12 (41.4%)	
TOTAL:	7 (24.1%)	22 (75.9%)	29 (100%)	

¹⁸ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 3.14.

¹⁹ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 1.03.

²⁰ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 2.90.

Those who claimed their medical curriculum should change for them to feel more prepared didn't state they were never confronted with such a situation for physical examination ($X^2=0.022$)

Table 17: Association between thinking the curriculum should change and stating never being confronted with such situation, for physical examination.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	17 (58.6%)	2 (6.9%)	19 (65.5%)	0.002 (²¹)
Yes	9 (31.0%)	1 (3.4%)	10 (34.5%)	
TOTAL:	26 (89.7%)	3 (10.3%)	29 (100%)	

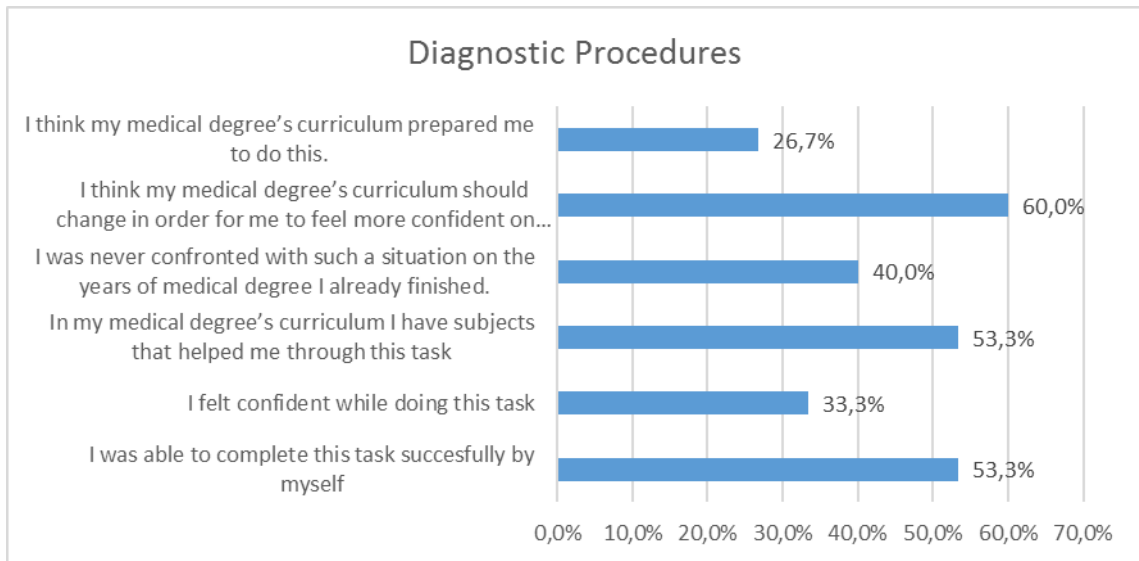
Students who spent more time volunteering didn't feel increasingly confident while history-taking ($X^2 = 0.909$; $p=0.340$)

Table 18: Association between the period volunteering and the degree of confidence while performing physical examination

Period	Confident		TOTAL:	X^2 (p)
	No	Yes		
1 month or more	8 (27.6%)	7 (24.1%)	15 (51.7%)	0.909 (0.304)
Less than 1 month	5 (17.2%)	9 (31.0%)	14 (48.3%)	
TOTAL:	13 (44.8%)	16 (55.2%)	29 (100%)	

²¹ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 1.03.

On a total of 15 students (n=15) who claimed to have performed diagnostic procedures while volunteering, the answers on Graphic 17 were obtained:



Graphic 15: Answers from students who performed “Diagnostic Procedures” as volunteers

There is no significant association between those who felt more confident applying diagnostic procedures and those who could complete the task successfully by themselves. ($\chi^2 = 1.759$)

Table 19: Association between feeling confident applying diagnostic procedures and successfully being able to do so by themselves.

Confident	Successfully		TOTAL:	χ^2 (p)
	No	Yes		
No	7 (46.7%)	4 (26.7%)	11 (73.3%)	1.759 (²²)
Yes	1 (6.7%)	3 (20.0%)	4 (26.7%)	
TOTAL:	8 (53.3%)	7 (46.7%)	15 (100%)	

²² It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 1.87.

There is also no association between those who felt their medical curriculum prepared them to apply diagnostic procedures and recognizing some subjects on their medical curriculum helped them through that task. ($X^2=0.603$)

Table 20: Association between having subjects that resembled applying diagnostic procedures and feeling their medical curriculum prepared them to do so

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	7 (46.7%)	5 (33.3%)	12 (80.0%)	0.603 (²³)
Yes	1 (6.7%)	2 (13.3%)	3 (20.0%)	
TOTAL:	8 (53.3%)	7 (46.7%)	15 (100%)	

Those who felt confident performing diagnostic procedures didn't recognize subjects on their medical curriculum that helped them through that task. ($X^2=6.234$)

Table 21: Association between feeling confident applying diagnostic procedures having subjects that resemble the task.

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	8 (53.3%)	0 (0%)	8 (53.3%)	6.234 (²⁴)
Yes	3 (20.0%)	4 (26.7%)	7 (46.7%)	
TOTAL:	11 (73.3%)	4 (26.7%)	15 (100%)	

²³ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 1.40

²⁴ It was not possible to obtain p value since 2 cells (50%) were expected to have a value < 5. Minimum count expected is 1.87

There is also no correlation between students that considered curriculum should change for them to feel more prepared applying diagnostic procedures, and stating that in their medical curriculum they were never confronted with such a situation. ($X^2=6.667$)

Table 22: Association between thinking the curriculum should change and stating they were never confronted with a situation resembling this task.

Change	Never		Total	X^2 (p)
	No	Yes		
No	6 (40.0%)	0 (0%)	6 (40.0%)	6.667 (²⁵)
Yes	3 (20.0%)	6 (40.0%)	9 (60.0%)	
Total	9 (60.0%)	6 (40.0%)	15 (100.0%)	

Students who spent more time volunteering didn't feel increasingly confident doing diagnostic procedures ($X^2=1.519$)

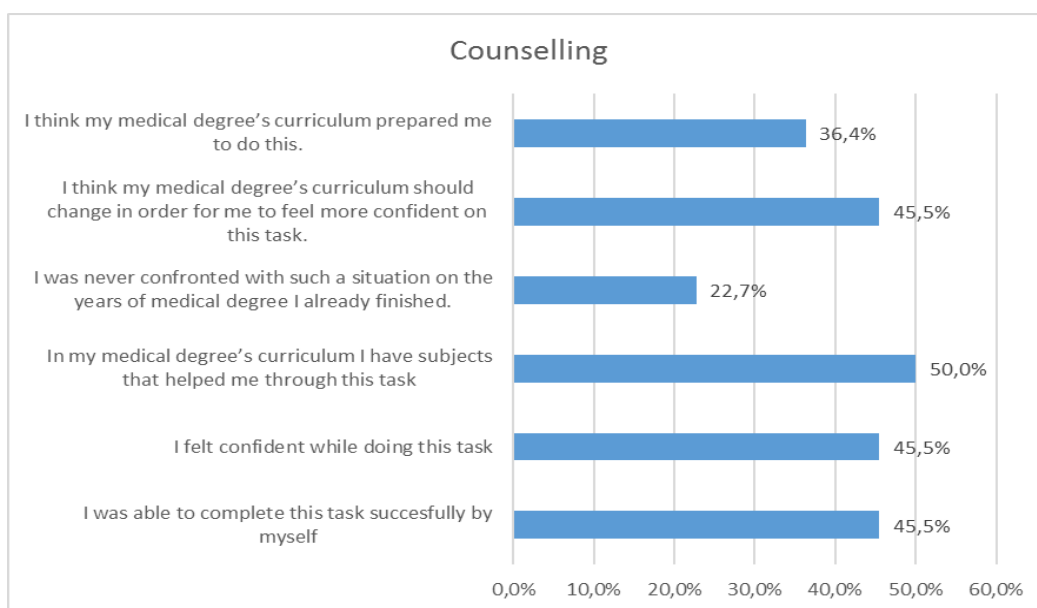
Table 23: Association between the time spent volunteering and the degree of confidence while applying diagnostic procedures

Period	Confident		Total	X^2 (p)
	No	Yes		
1 month or more	9 (60.0%)	2 (13.3%)	11 (73.3%)	1.519 (²⁶)
less than 1 month	2 (13.3%)	2 (13.3%)	4 (26.7%)	
Total	11 (73.3%)	4 (26.7%)	15 (100%)	

²⁵ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 2.40

²⁶ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.07

On a total of 22 students (n=22) who claimed to have performed counselling while volunteering, the answers on Graphic 18 were obtained:



Graphic 16: Answers from students who performed "Counselling" as volunteers

There is no statistical correlation between feeling confident while counselling and being able to successfully complete that task by themselves. ($\chi^2 = 1.564$)

Table 24: Association between feeling confident counselling and successfully being able to perform the task by themselves.

Confident	Successfully		TOTAL:	χ^2 (p)
	No	Yes		
No	8 (36.4%)	4 (18.2%)	12 (54.5%)	1.564 (²⁷)
Yes	4 (18.2%)	6 (27.3%)	10 (45.5%)	
TOTAL:	12 (54.5%)	10 (45.5%)	22 (100%)	

²⁷ It was not possible to obtain p value since 1 cell (25%) was expected to have a value < 5. Minimum count expected is 4.55

Those who felt their medical curriculum prepared them to counselling didn't recognized subjects on their medical curriculum that helped them through that task. ($X^2= 12.571$)

Table 25: Association between feeling prepared to do counselling and recognizing subjects that resemble the task.

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	11 (50.0%)	3 (13.6%)	14 (63.6%)	12.571 (²⁸)
Yes	0 (0%)	8 (36.4%)	8 (36.4%)	
TOTAL:	11 (50%)	11 (50%)	22 (100%)	

Those who felt confident counselling didn't recognized subjects on their medical curriculum that helped them through that task. ($X^2=6.600$)

Table 26: Association between feeling confident counselling and recognizing subjects that resemble this task.

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	9 (40.9%)	2 (9.1%)	11 (50.0%)	6.600 (²⁹)
Yes	3 (13.6%)	8 (36.4%)	11 (50.0%)	
TOTAL:	12 (54.5%)	10 (45.5%)	22 (100%)	

²⁸ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 4.00

²⁹ It was not possible to obtain p value since 0 cells were expected to have a value < 5. Minimum count expected is 5.00

Related to counselling, there is no statistical correlation between students that considered curriculum should change and those stating that in their medical curriculum they were never confronted with such a situation. ($\chi^2 = 0.078$)

Table 27: Association between feeling the curriculum should change and stating they were never confronted with a situation that resembled this task, for counselling.

Change	Never		TOTAL:	χ^2 (p)
	No	Yes		
No	9 (40.9%)	3 (13.6%)	12 (54.5%)	0.078 (³⁰)
Yes	8 (36.4%)	2 (9.1%)	10 (45.5%)	
TOTAL:	17 (77.3%)	5 (22.7%)	22 (100%)	

Students who spent more time volunteering didn't feel increasingly confident counselling. ($\chi^2 = 0.006$)

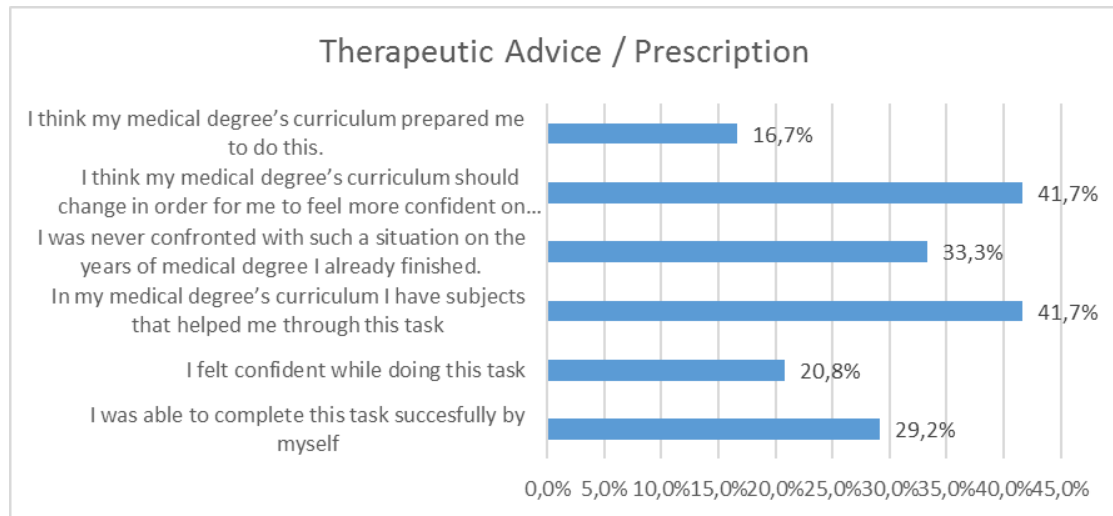
Table 28: Association between the time spent volunteering and the degree of confidence while counselling

Period	Confident		TOTAL:	χ^2 (p)
	No	Yes		
1 month or more	7 (31.8%)	6 (27.3%)	13 (59.1%)	0.006 (³¹)
less than 1 month	5 (22.7%)	4 (18.2%)	9 (40.9%)	
TOTAL:	12 (54.5%)	10 (45.5%)	22 (100%)	

³⁰ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 2.27.

³¹ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 4.09.

On a total of 24 students (n=24) who claimed to have done therapeutic advice/prescription while volunteering, the answers on Graphic 19 were obtained:



Graphic 17: Answers from students who performed “Therapeutic Advice/ Prescription” as volunteers

There is no statistical correlation between feeling confident while doing therapeutic advice and being able to successfully complete that task by themselves. ($X^2 = 0.359$)

Table 29: Association between feeling confident prescribing and successfully being able to perform the task by themselves.

Confident	Successfully		TOTAL:	X^2 (p)
	No	Yes		
No	14 (58.3%)	5 (20.8%)	19 (79.2%)	0.359 (³²)
Yes	3 (12.5%)	2 (8.3%)	5 (20.8%)	
TOTAL:	17 (70.8%)	7 (29.2%)	24 (100%)	

Those who felt their medical curriculum prepared them to do therapeutic advice didn't recognize subjects on their medical curriculum that helped them through that task. ($X^2 = 6.720$)

Table 30: Association between feeling prepared to prescribe and recognizing subjects that resemble the task.

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	14 (58.3%)	6 (25.0%)	20 (83.3%)	6.720 (³³)
Yes	0 (0%)	4 (16.7%)	4 (16.7%)	
TOTAL:	14 (58.3%)	10 (41.7%)	24 (100%)	

³² It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 1.46

³³ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 1.67

Those who felt confident doing therapeutic advice didn't recognize subjects on their medical curriculum that helped them through that task. ($\chi^2=0.873$)

Table 31: Association between feeling confident prescribing and recognizing subjects that resemble this task.

Subjects	Confident		TOTAL:	χ^2 (p)
	No	Yes		
No	12 (50.0%)	2 (8.3%)	14 (58.3%)	0.873 (³⁴)
Yes	7 (29.2%)	3 (12.5%)	10 (41.7%)	
TOTAL:	19 (79.2%)	5 (20.8%)	24 (100%)	

There is no correlation between students that considered curriculum should change and those who stated that in their medical curriculum they were never confronted with such a situation. ($\chi^2 = 0.343$)

Table 32: Association between feeling the curriculum should change and stating they were never confronted with a situation that resembled this task, for therapeutic advice/prescription.

Change	Never		TOTAL:	χ^2 (p)
	No	Yes		
No	10 (41.7%)	4 (16.7%)	14 (58.3%)	0.343 (³⁵)
Yes	6 (25.0%)	4 (16.7%)	10 (41.7%)	
TOTAL:	16 (66.7%)	8 (33.3%)	24 (100%)	

There is also no correlation between students who spent more time volunteering and feeling increasingly confident doing therapeutic advice. ($\chi^2=0.007$)

Table 33: Association between the time spent volunteering and the degree of confidence while prescribing

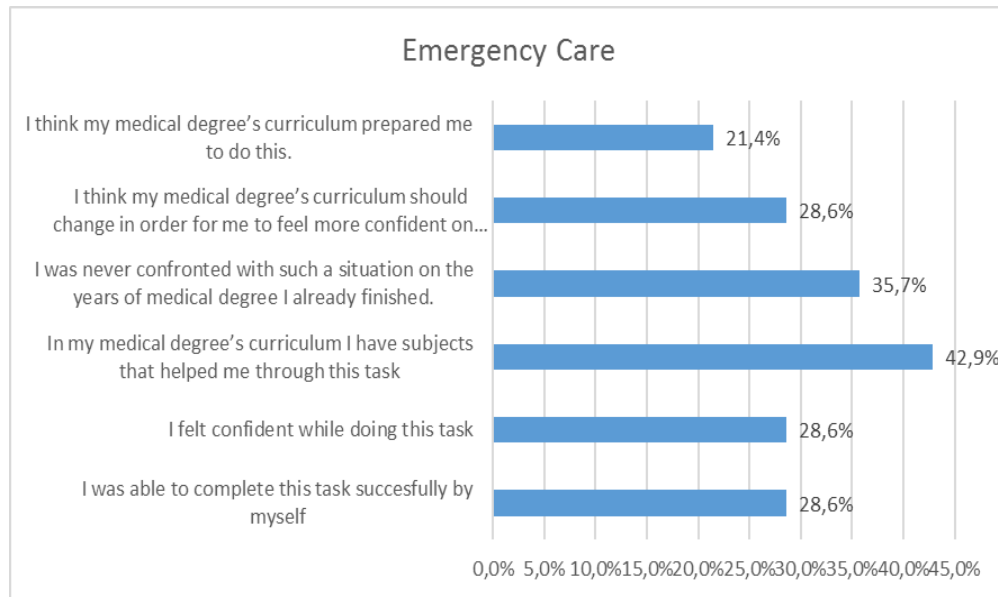
Period	Confident		TOTAL:	χ^2 (p)
	No	Yes		
1 month or more	11 (45.8%)	3 (12.5%)	14 (58.3%)	0.007 (³⁶)
less than 1 month	8 (33.3%)	2 (8.3%)	10 (41.7%)	
TOTAL:	19 (79.2%)	5 (20.8%)	24 (100%)	

³⁴ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 2.08

³⁵ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 3.33

³⁶ It was not possible to obtain p value since 2 cell (50%) were expected to have a value < 5. Minimum count expected is 2.08

On a total of 14 students (n=14) who claimed to have done therapeutic advice/prescription while volunteering, the answers on Graphic 20 were obtained:



Graphic 18: Answers from students who performed “Emergency Care” as volunteers

There is no statistical correlation between feeling confident while doing emergency care and being able to successfully complete that task by themselves. ($\chi^2 = 1.260$)

Table 34: Association between feeling confident doing emergency care and successfully being able to perform the task by themselves.

Confident	Successfully		TOTAL:	χ^2 (p)
	No	Yes		
No	8 (57.1%)	2 (14.3%)	10 (71.4%)	1.260 ⁽³⁷⁾
Yes	2 (14.3%)	2 (14.3%)	4 (28.6%)	
TOTAL:	10 (71.4%)	4 (28.6%)	14 (100%)	

³⁷ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.14

Those who felt their medical curriculum prepared them to do emergency care didn't recognized subjects on their medical curriculum that helped them through that task. ($X^2=5.091$)

Table 35: Association between feeling prepared to do emergency care and recognizing subjects that resemble the task.

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	8 (57.1%)	3 (21.4%)	11 (78.6%)	5.091 (³⁸)
Yes	0 (0%)	3 (21.4%)	3 (21.4%)	
TOTAL:	8 (57.1%)	6 (42.9%)	14 (100%)	

Those who felt confident doing emergency care didn't recognized subjects on their medical curriculum helped them through that task. ($X^2=7.467$)

Table 36: Association between feeling confident doing emergency care and recognizing subjects that resemble this task.

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	8 (57.1%)	0 (0%)	8 (57.1%)	7.467 (³⁹)
Yes	2 (14.3%)	4 (28.6%)	6 (42.9%)	
TOTAL:	10 (71.4%)	4 (28.6%)	14 (100%)	

Relating to emergency care, students that considered curriculum should change didn't state that they were never confronted with such a situation. ($X^2= 0.498$)

Table 37: Association between feeling the curriculum should change and stating they were never confronted with a situation that resembled this task, for emergency care.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	7 (50.0%)	3 (21.4%)	10 (71.4%)	0,498 (⁴⁰)
Yes	2 (14.3%)	2 (14.3%)	4 (28.6%)	
TOTAL:	9 (64.3%)	5 (35.7%)	14 (100%)	

³⁸ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.29

³⁹ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.71

⁴⁰ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.43

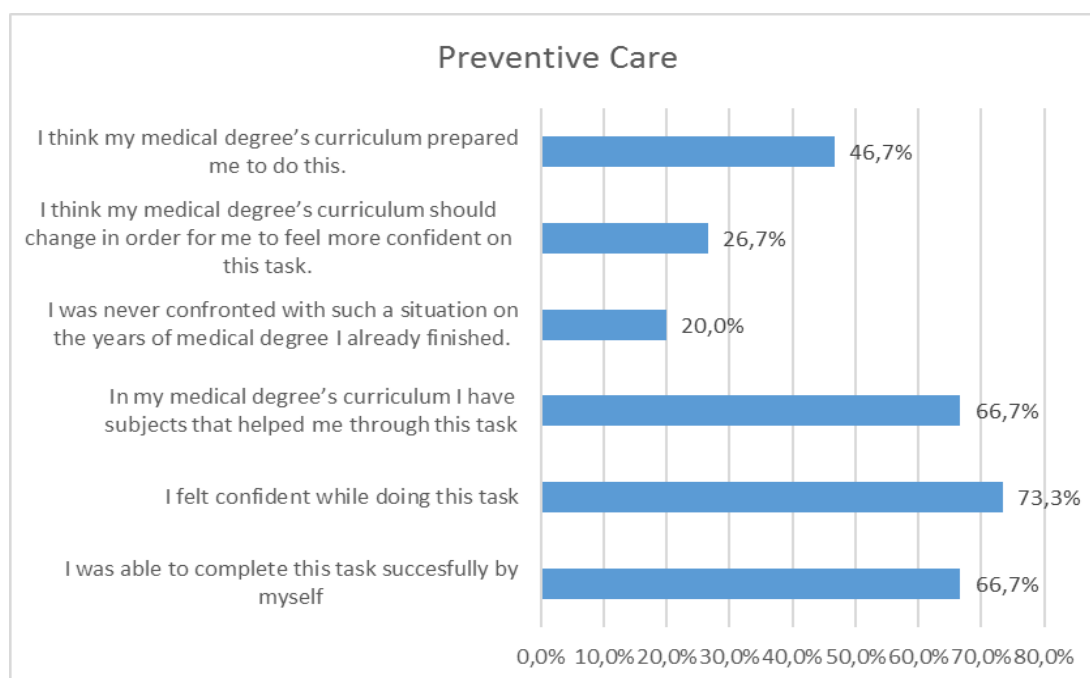
Students who spent more time volunteering didn't feel increasingly confident doing emergency care. ($\chi^2=2.363$)

Table 38: Association between the time spent volunteering and the degree of confidence while doing emergency care.

Period	Confident		TOTAL:	χ^2 (p)
	No	Yes		
1 month or more	7 (50.0%)	1 (7.1%)	8 (57.1%)	2.363 (⁴¹)
less than 1 month	3 (21.4%)	3 (21.4%)	6 (42.9%)	
TOTAL:	10 (71.4%)	4 (28.6%)	14 (100%)	

⁴¹ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 1.71

On a total of 15 students (n=15) who claimed to have done therapeutic advice/prescription while volunteering, the answers on Graphic 21 were obtained:



Graphic 19: Answers from students who performed “Preventive Care” as volunteers

There is no statistical correlation between feeling confident while doing preventive care and being able to successfully complete this task by themselves. ($X^2=2.963$)

Table 39: Association between feeling confident doing preventive care and successfully being able to perform the task by themselves.

Confident	Successfully		TOTAL:	X ² (p)
	No	Yes		
No	4 (26.7%)	2 (13.3%)	6 (40.0%)	2.963 (⁴²)
Yes	2 (13.3%)	7 (46.7%)	9 (60.0%)	
TOTAL:	6 (40.0%)	9 (60.0%)	15 (100%)	

⁴² It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 2.40

Those who felt their medical curriculum prepared them to do preventive care didn't recognized subjects on their medical curriculum that helped them through that task. ($X^2=2.269$)

Table 40: Association between feeling prepared to do preventive care and recognizing subjects that resemble the task.

Prepared	Subjects		TOTAL:	X^2 (p)
	No	Yes		
No	5 (33.3%)	4 (26.7%)	9 (60.0%)	2.269 ⁽⁴³⁾
Yes	1 (6.7%)	5 (33.3%)	6 (40.0%)	
TOTAL:	6 (40.0%)	9 (60.0%)	15 (100%)	

Those who felt confident doing preventive care didn't recognized subjects on their medical curriculum helped them through that task ($X^2=2.963$)

Table 41: Association between feeling confident doing emergency care and recognizing subjects that resemble this task.

Subjects	Confident		TOTAL:	X^2 (p)
	No	Yes		
No	4 (26.7%)	2 (13.3%)	6 (40.0%)	2.963 ⁽⁴⁴⁾
Yes	2 (13.3%)	7 (46.7%)	9 (60.0%)	
TOTAL:	6 (40.0%)	9 (60.0%)	15 (100%)	

Relating to emergency care, students that considered curriculum should change didn't state that they were never confronted with such a situation. ($X^2=0.085$)

Table 42: Association between feeling the curriculum should change and stating they were never confronted with a situation that resembled this task, for preventive care.

Change	Never		TOTAL:	X^2 (p)
	No	Yes		
No	9 (60.0%)	2 (13.3%)	11 (73.3%)	0.085 ⁽⁴⁵⁾
Yes	3 (20.0%)	1 (6.7%)	4 (26.7%)	
TOTAL:	12 (80.0%)	3 (20.0%)	15 (100%)	

⁴³ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 2.40

⁴⁴ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 2.40

⁴⁵ It was not possible to obtain p value since 3 cells (75%) were expected to have a value < 5. Minimum count expected is 0.80

Students who spent more time volunteering didn't feel increasingly confident doing emergency care. ($\chi^2=0.045$).

Table 43: Association between the time spent volunteering and the degree of confidence while doing preventive care.

Period	Confident		TOTAL:	χ^2 (p)
	No	Yes		
1 month or more	3 (20.0%)	5 (33.3%)	8 (53.3%)	0.045 (⁴⁶)
less than 1 month	3 (20.0%)	4 (26.7%)	7 (46.7%)	
TOTAL:	6 (40.0%)	9 (60.0%)	15 (100%)	

For most tasks, there are more students thinking their curriculum should change for them to feel more prepared (n=5; 62.5%) than that their curriculum prepared them (n=3; 37.5%).

Table 44: Number of students that think their curriculum should change and number of students who think it prepared them.

	TASKS		
I think my medical degree's curriculum should change in order for me to feel more confident on this task.	5	0,625	62,5%
I think my medical degree's curriculum prepared me to do this.	3	0,375	37,5%
TOTAL:	8	1	100%

Despite that, there are more students thinking they have subjects on their curriculums helping them through performed tasks (n=7; 87.5%) than thinking they were never confronted with those situations (n=1; 12.5%).

Table 45: Number of students that think they have subjects that helped them and number of students who think they were never confronted with such a situation.

	TASKS		
In my medical degree's curriculum I have subjects that helped me through this task	7	0,875	87,5%
I was never confronted with such a situation on the years of medical degree I already finished.	1	0,125	12,5%
TOTAL:	8	1	100%

⁴⁶ It was not possible to obtain p value since 4 cells (100%) were expected to have a value < 5. Minimum count expected is 2.80

To the question “Based on your experience as a medical volunteer on a chaotic situation what subject do you think your school’s curriculum has that was the most valuable on this situation?” the answers on table 47 were obtained:

Table 46: Subjects that students of each university think are valuable on their curriculum. In grey the answers from students who worked exclusively as “non-medical” volunteers.

University	Answers	Number of students
Departamento de Ciências Biomedicas e Medicina da Universidade do Algarve	Physical Exam and History Taking	1
Faculdade de Ciências da Saúde da Universidade da Beira Interior	Course of Practical Skills	1
	Public Health	1
	ICU	1
Universidade Nova de Lisboa	Clinical Practice/Internships	2
	Basic Life Support	1
Universidad de Navarra	Clinical Practice/Internships	4
	Humanitarian Medicine	1
	Phatology and Physiopathology	1
	Emergency	1
Euskal Herriko Unibertsitatea / Universidad del País Vasco	Basic Surgery	1
	Physiopathology and Phatology	1
	Psychology	1
University of Barcelona	Infectious Diseases	1
The George Washington University School of Medicine	Clinical Practice/Internships	1
UConn School of Medicine	ABCDE	1
David Geffen School of Medicine		
Universidad de la Republica	Rural Family Medicine	1
University of Liverpool: Liverpool Medical School	Communication Skills	1
University of Cambridge	-	-
Barts and the London	Clinical Practice/Internships	1
Edinburgh Medical School	Resus Task	1
Swansea Medical School	Physical Exam and History Taking	1
	Course of Practical Skills	1
University of Leicester	Clinical Practice/Internships	1
University of Dublin, Trinity College	Course of Practical Skills	1

University of Oxford	Communication Skills	1
University of Zurich	Clinical Practice/Internships	1
	Physical Exam and History Taking	1
University of Basel	Clinical Practice/Internships	1
Jordan University of Science and Technology	Course of Practical Skills	2
	Clinical Practice/Internships	1
	Ethics	1
	Psychiatry	1
	Psychology	1
	Laboratorial classes	1
	IFMSA's projects	1
University of Sydney	Physical Exam and History Taking	1
	Cultural Learning	1
	Communication Skills	1

On the total of answers, the most referred subject as valuable was “clinical practice/internships” (n=12, 27.9%), followed by Course of Practical Clinical Skills (n=5, 11.6%) and Physical-exam and History-taking (n=4, 9.3%).

Public health (n=1, 2.3%), Course of Practical Skills (n=5, 11.6%), ICU (n=1, 2.3%), Basic Life Support (n=1, 2.3%) and the Resus Task (n=1, 2.3%) were referred as valuable by at least one student who did exclusively non-medical tasks.

To the question, “Based on your experience as a medical volunteer on a chaotic situation what subjects do you think your school’s curriculum lacks and that would be valuable on this situation?” the answers on Table 48 were obtained:

Table 47: Subjects that students of each university think are lacking on their curriculum. In grey the answers from students who worked exclusively as “non-medical” volunteers.

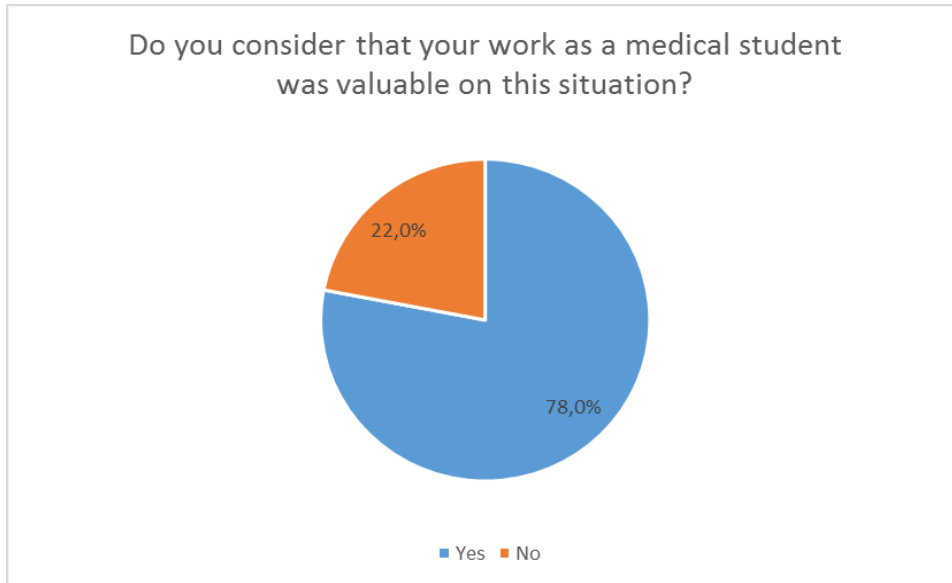
University	Answers:	Number of students:
Departamento de Ciências Biomedicas e Medicina da Universidade do Algarve	Triage	1
Faculdade de Ciências da Saúde da Universidade da Beira Interior	Low Resources Scenarios	1
Universidade Nova de Lisboa	Practicing Clinical Cases	1
	Advanced Life Support	1 + 1
	Disaster Medicine	1
	Basic Skills/Procedures Course	1
	Emergency response	1
Universidad de Navarra	Humanitarian Aid	1
	Cultural Barriers	2
	Low Resources Scenarios	1
	First Aid	1
	More Clinical Practice	1
	Cardiology	1
	Rheumatology	1
	Traumatology	1
	Basic Care	1
	Emergency response	2
	Emergency care on catastrophes	1
Euskal Herriko Unibertsitatea / Universidad del País Vasco	Self care	1
	Management of critical situations	1
University of Barcelona	International Cooperation and Health	1
	Social Medicine	1
	Dermatology	1
The George Washington University School of Medicine	Emergency Response	1
UConn School of Medicine	Triage	1
David Geffen School of Medicine	Counselling and emotional support in various situations	1
Universidad de la Republica	Emergency Response	1
University of Liverpool: Liverpool Medical School	How to deal with language barriers	1
University of Cambridge		
Barts and the London	Global Health	1
Edinburgh Medical School	Global Health	1

Swansea Medical School	Emergency response	1
	Tropical/Infectious Diseases	1
	How to deal with language barriers	1
University of Leicester	Counselling and emotional support in various situations	1
	Wound Dressing	1
	First Aid	1
University of Dublin, Trinity College	Wound Dressing	1
University of Oxford	Low Resources Scenarios	1
	First Aid	1
	Wound Dressing	1
University of Zurich	Practicing Clinical Cases	1
University of Basel	Wound Dressing	1
	Handling drugs	1
	Triage	1
Jordan University of Science and Technology	More Clinical Practice	2
	Counselling and emotional support in various situations	1
	Community Medicine	1
	Ethics	1
	Disaster Medicine	2
	Basic Life Support	1
	Fist Aid	1
	Self care	1
	Field Training/Internships	2
	Emergency response	3
	Emergency care on catastrophes	1
	Basic Skills/Procedures Course	3
Public Health	1	
University of Sydney	Low Resources Scenarios	1

In the total of answers, the most referred lacking subject was Emergency Response (n=9, 13.6%), followed by First Aid (n=4, 6.1%), Aiding in low resources scenarios (n=4, 6.1%), Wound dressing (n=4, 6.1%) and a Basic Skills/Procedure Course (n=4, 6.1%).

Aiding in low resources scenarios (n=4, 6.1%), Advanced life support (n=2, 3.0%), Disaster Medicine (n=3, 4.5%), Emergency Response (n=9, 13.6%), International Cooperation and Health (n=1, 1.5%), Social Medicine (1.5%) and Global Health (n=2, 3.0%) were referred as lacking by at least one student who did only non-medical tasks.

To the question “Do you consider that your work as a medical student was valuable on this situation?”, most students felt it was. (n=39; 78%).



Graphic 20: Percentage of students who consider their work as medical students who were volunteers valuable and percentage of students who didn't feel useful.

Discussion

Relative to triage only, when asked to select all that apply, the most selected option was “I felt confident while doing this task” (n=24; 70.6%). And the least selected option was “I think my medical degree’s curriculum prepared me to do this.” (n=10; 29.4%). On this task, there are more students thinking their medical degree’s curriculum should change for them to feel more confident on the task (n=14; 41.2%) than students feeling that their medical degree’s curriculum prepared them to do so. (n=10; 29.4%). There are also more students stating they were never confronted with such a situation on the years of medical degree they already finished (n=15; 44.1%) than students thinking they have on their medical degree’s curriculum subjects that helped them thought this specific task (n=12; 35.3%). More than half of the students who did triage, felt confident while doing this task (n=11; 73.3%) and could complete it successfully by themselves (n=10; 66.7%)

Relatively to the task medical histories when asked to select all that apply, the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=24; 60%) and the least selected option was “I was never confronted with such a situation on the years of medical degree I already finished” (n=7; 17.5%). Differently from triage, on this task there are more students thinking their medical degree’s curriculum prepared them to do so. (n=17; 42.5%) than students thinking it should change for them to feel more confident on the task (n=9; 22.5%). More than half of the students who collected medical histories, felt confident while doing this task (n=23; 57.5%) and could complete it successfully by themselves (n=22; 55%).

On the task performing physical examination the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=22; 71%). And the least selected option was “I was never confronted with such a situation on the years of medical degree I already finished.” (n=3; 9.7%). As in the task “taking medical histories”, on this task there are more students thinking their medical degree’s curriculum prepared them to do so. (n=12; 38.7%) than students thinking it should change for them to feel more confident on the task (n=10; 32.3%).

About the task diagnostic procedures, the most selected option was “I think my medical degree should change for me to feel more confident on this task” (n=9; 60%). And the least selected option was “I think my medical degree’s curriculum prepared me to do this.” (n=4; 26.7%). There are more students stating they have subjects that helped them through the task (n=8; 53.3%) than students stating they were never confronted with such a situation (n=6; 40%). More than half of the students who did diagnostic procedures think they could complete it successfully by themselves (n=8; 53.3%).

On the task counselling the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=11; 50%). And the least selected option

was “I was never confronted with such a situation on the years of medical degree I already finished” (n=5; 22.7%). Despite that, on this task, there are more students thinking their medical degree’s curriculum should change for them to feel more confident on the task (n=10; 45.5%) than students feeling that their medical degree’s curriculum prepared them to do so. (n=8; 36.4%).

About the task therapeutic advice/prescription the most selected options were “In my medical degree’s curriculum I have subjects that helped me through this task” (n=10; 41.7%) and “I think my medical degree’s curriculum should change for me to feel more confident on this task” (n=10; 41.7%). And the least selected option was “I think my medical degree’s curriculum prepared me to do this.” (n=4; 20.8%). Despite that, there are more students stating they have subjects that helped them through the task (n=10; 41.7%) than students stating they were never confronted with such a situation (n=8; 33.3%).

Relative to the task Emergency care, when asked to select all that apply, the most selected option was “In my medical degree’s curriculum I have subjects that helped me through this task” (n=6; 42.9%). And the least selected option was “I think my medical degree’s curriculum prepared me to do this.” (n=3; 21.4%). On this task, there are more students thinking their medical degree’s curriculum should change for them to feel more confident on the task (n=4; 28.6%) than students feeling that their medical degree’s curriculum prepared them to do so. Despite that, there are more students stating they have on their medical degree’s curriculum subjects that helped them thought this specific task than thinking they were never confronted with such a situation on the years of medical degree they already finished (n=5; 35.7%).

Relative to the task Preventive care, when asked to select all that apply, the most selected option was “I felt confident while doing this task” (n=11; 73.3%). And the least selected option was “I was never confronted with such a situation on the years of medical degree I already finished.” (n=3; 20%). On this task there are more students thinking their medical degree’s curriculum prepared them to do so (n=7; 46.7%) than students thinking their medical degree’s curriculum should change in order for them to feel more confident on the task (n=4; 26.7%) There were are also more students stating they have on their medical degree’s curriculum subjects that helped them thought this specific task (n=10; 66.7%) than thinking they were never confronted with such a situation on the years of medical degree they already finished (n=3; 20.0%).

Through most tasks, there are more students stating their curriculum should change for them to feel more prepared than considering it prepares them already for the tasks they were confronted with on refugee camps. Despite that, there are also more students thinking they have subjects helping them through performed tasks than thinking they were never confronted with those situations.

Students suggested adding practical skills to the curriculum: emergency response, aiding in low resources scenarios, first aid and wound dressing and even a basic skills/procedure course.

The two previous results allied with this fact lead us to consider that maybe what is lacking on medical curriculum is not the theoretical knowledge but the practical component. And analyzing curricula from the countries I obtained more answers from (Jordan, Portugal, Spain and UK), this hypothesis was confirmed.

Going through the curriculum on Jordan University of Science and Technology³⁷ (JUST), on a total of 15 subject on the first year only four have a practical component and none as clinical training. Laboratorial classes were referred by some students as helpful through these scenarios. For the second year, on a total of 11 subjects and an optional course, 6 have a practical component but again none as clinical training. For the third year, on a total of 9 subjects and 2 optional courses, 6 have a practical component but none as clinical training. Medical Ethics and Psychology were referred by students of JUST has a valuable subject of this university for preparation to work on these scenarios.

Table 48: JUST's curriculum for the first three years.

		Practical Component	Clinical Training
1st year	Arabic Language		
	Applied studies in Arabic Language	x	
	Biology		
	Physics		
	Chemistry		
	Biology Lab.	x	
	Organic Chemistry		
	Introduction to Computer Science		
	General Anatomy	x	
	Cell Biology and Tissues	x	
	General Physiology		
	English Language I		
	General Biochemistry		
	Military Sciences		
Computer Programing			
2nd year	Molecular Genetics	x	
	General Pathology	x	
	General Pharmacology		
	General Microbiology	x	
	Research Methodology and Biostatistics		
	English Language II		
	Respiratory System	x	
	Cardio-vascular System	x	
	Haemopoietic and Lymphatic System	x	
	Immunology		
	Introduction to Public Health		
Optional Course			
3rd year	Gastro-intestinal system	x	
	Endocrine system	x	
	Musculo-skeletal system	x	
	Neuroscience I	x	
	Neuroscience II	x	
	Genito-urinary System	x	
	Medical Ethics		
	Health Administration		
	Behavioral Psychology		
	Optional Course		
Optional Course			

Clinical training starts on the fourth year, on 4 of the 5 subjects, the only other subject of the fourth-year curriculum: Clinical & Communication Skills, has a practical component. On the fifth year, all the subjects have clinical training. Psychiatry was one of the subjects referred by one student as helpful while volunteering. The same happens on the sixth and final year.

Table 49: JUST's curriculum for the last three years.

		Practical Component	Clinical Training
4th year	General Surgery I		x
	General Medicine I		x
	Pediatrics I		x
	Community Medicine		x
	Clinical & Communication Skills	x	
5th year	Obstetrics & Gynecology I		
	Family Medicine and Primary Health Care		x
	Psychiatry		x
	Ear nose and throat		x
	Orthopedics		x
	Anesthesia		x
	Neurology		x
	Ophthalmology		x
	Dermatology		x
	Diagnostic Radiology		x
	Forensic Medicine and Toxicology		x
6th year	General Surgery II		x
	General Medicine II		x
	Pediatrics II		x
	Obstetrics & Gynecology II		x
	Elective Internship		x

Volunteers studying on this university, referred that they felt on the JUST curriculum lacked specially practical subjects like “emergency response”, “emergency care on catastrophes”, “first aid” a “basic skills/procedure course” or subjects that allow students more engagement with the community as “community medicine”, “counselling and emotional support” and “public health” and being an university placed in a front row country to the refugee crisis with so many refugee camps, some students feel they could have some “field training/internships” quoting students own words while answering the survey: *“In our university we lack a basic course on emergency preparation and emergency disaster situations which makes student lack the necessary skills needed to use during such situations”* (20-year-old female; 3rd year JUST); *“I think our school has a pretty good medical curriculum, but it is slow on the practical part, as medical students we should be knowledgeable with basic medical procedures like injections and sutures and first aid, etc...which sadly we don't have.”* (21-year-old male, 1st year JUST); and even *“My school is in Jordan which is a country of*

refugees so I think the school should improve the public health and community courses and maybe we should practice it in the fields” (24-year-old female, 3rd year JUST). A student from the second year referred ethics as a lacking subject but as we see in the curriculum that’s a matter of the year the student is in and not a problem on the universities curriculum, since “medical ethics” it’s part of the third-year curriculum for JUST.

Analyzing the documents on medical curriculum from the Spanish Society on Medical Education for Spanish students, we are confronted with three major branches that must take part on the curriculum of Spanish students, “basic biomedical sciences”, “behavioral and social sciences and medical ethics” and “clinical sciences and skills” for the first one these documents state that each medical school is responsible for the subjects that incorporate in their curriculum but those should “create understanding of the scientific knowledge, concepts and methods fundamental to acquiring and applying clinical science”³⁸ and typical examples are given. For behavioral and social sciences and medical ethics, this document tells us that each medical school is responsible for the subjects that incorporate in their curriculum but those should “enable effective communication, clinical decision making and ethical practices”³⁸ This document also states that this behavioral and social sciences may vary accordingly to local needs or even traditions. About clinical sciences and skills this document gives explains that those skills are phocused on “history taking and physical examination , procedures and investigations, emergency practices and communication and team leadership skills.”³⁸ with the responsibility of health promoting, disease prevention and patient care and participating in patient care in the community experience while team working with other health professionals.³⁸

Table 50: Possible Curriculum for a Spanish University

Basic Biomedical Sciences	Anatomy
	Biochemistry
	Physiology
	Biophysics
	Molecular Biology
	Cell Biology
	Genetics
	Microbiology
	Immunology
	Pharmacology
	Pathology
Behavioral and Social Sciences and Medical Ethics	Medical Psychology
	Medical Sociology
	Biostatistics
	Epidemiology
	Hygiene and Public Health
Clinical Sciences and Skills	Community Medicine
	Internal Medicine (and subspecialties)
	Surgery (and subspecialties)
	Anesthesiology
	Dermatology and Venereology
	Diagnostic Radiology
	Emergency Medicine
	General Practice/Family Medicine
	Geriatrics
	Gynecology & Obstetrics
	Laboratory Medicine
	Neurology
	Neurosurgery
	Oncology & Radiotherapy
	Ophthalmology
	Orthopedic Surgery
	Otorhinolaryngology
	Pediatrics
	Pathological Anatomy
	Physiotherapy & Rehabilitation Medicine
Psychiatry	

Students from Spanish universities, referred the most valuable subjects on their curriculum's as being: Clinical Practice/Internships, Humanitarian Medicine, Pathology and Pathophysiology, Emergency, Basic Surgery, Psychology and Infectious Diseases, despite humanitarian medicine not being referred on this documents from the Spanish Society on Medical Education³⁹ because it's possibly a specific subject from the University of Navarra: "Medicina y Ayuda Humanitaria" (Medicine and Humanitarian Help) that students can choose to have between the 4th and 6th years. ⁴⁰ Curiously Humanitarian Aid was also referred as lacking by a 4th year medical, 22 year old female student also from the university of Navarra, probably because this Medicine and Humanitarian Help is an optative and not integrated on the curriculum as we can see on the study plan.⁴⁰ Other subjects referred as lacking are: Cultural Barriers, Low Resources Scenarios, First Aid, Cardiology, Rheumatology, Traumatology, Basic Care, Emergency Response, Emergency Care on Catastrophes, Self-Care, Management of Critical Situations, International Cooperation and Health, Social Medicine and Dermatology. As happened before, with JUST, some of the referred subjects as lacking are already in the curriculum. This probably means students feel this subjects are not being well addressed on their universities or should have more time or more practice or even what they find on the field is completely different from what they learn. Since for instance dermatology was referred as lacking by a 23 year-old male, 5th year medical student from University of Barcelona and Dermatology it's placed on the 5th year of this university curriculum .⁴¹ Cardiology was referred as lacking by a 4th year, 21-year-old, male student from University of Navarra, and is precisely a 4th year subject at this university. Dermatology was referred has lacking by a 5th year, 23-year-old male medical student from University of Barcelona, accordingly to his curriculum he should have been confronted at least with the theoretical basis for this subject.

Referred subjects by students to be added to this curriculum were "International Cooperation and Health", "Social Medicine".

On completion of the undergraduate medical program in Portugal ^{42,43}, graduates should be able to demonstrate understanding on the following topics:

Table 51: Core Topics on Portuguese Medical Curriculum's

Core Topics	The normal human body
	Abnormal structure and function
	The causes of disease at different phases of development
	Normal psychological development throughout the life cycle
	Psychological defense mechanisms
	Normal and abnormal psychological responses to illness and injury
	Normal growth and maturation of the fetus, newborn, infant, child and adolescent and of the effects of growth and development on the biological and clinical manifestation of disease
	The normal ageing process in terms of biologic, psychosocial and clinical

	<p>manifestations as well as knowledge of age-related diseases and varied causes of disability in old age</p> <p>Human sexuality</p>
Clinical Sciences	<p>The clinical, pathological, laboratory, and imaging manifestations of maladies that are most prevalent, especially in Portugal and of diseases that are illustrative of fundamental principles</p> <p>Family structures (including common patterns of living in community that differ from the traditional nuclear family) and dysfunctional patterns of family relationships (eg violence, abuse)</p> <p>Normal pregnancy, labor and delivery, their complications and abnormal physiological responses</p> <p>Infertility, fertility control and therapeutic abortions</p> <p>The differences between medical and non-medical definition of “disease” and “illness”: different variables involved in the process (difference between curing vs. healing);</p> <p>Efficacious prevention and treatment of common diseases and syndromes including: pharmacology; surgery; radiotherapy; psychotherapy; immunotherapy; gene-replacement therapy; nutritional therapy; physiotherapy; lifestyle modification such as smoking cessation and weight control</p> <p>The role, prevalence and limitations of alternative and complementary therapies in common use</p>
Epidemiology, Biostatistics and Population Health	<p>The important determinants of health and the personal, existential, psychological, spiritual, biological, environmental, social, economic and cultural factors that contribute to illness and to the provision of medical care;</p> <p>The distribution of diseases during the life cycle and the systematic approaches that may be used to prevent or modify them; Research techniques, including: experimental design for the measurement and analysis of causal relationships between variables; appropriate statistical methods to assess significance of findings; and qualitative methods;</p> <p>Health care delivery systems, including the various approaches to the organization, financing and delivery of health-care services.</p>
Humanities, History of Medicine, Ethics and Law	<p>The role of a physician as a professional and healer</p> <p>The nature of professionalism, its origins and present status, the relation between the medical profession and society, and the obligations required of a professional to maintain professional status;</p> <p>The major ethical and legal dilemmas that physicians encounter and the theories and principles that guide ethical decision-making, including: end-of-life decision-making; assisted reproduction; genetic testing and modification; maternal-foetal dilemmas; stem-cell research; abortion; research ethics; allocation of limited resources; ethical challenges to professionalism; exceptions to the obligation for truth-telling; respect for human dignity; informed choices; vulnerable persons; privacy and</p>

confidentiality; justice and inclusiveness; maximizing benefit; minimizing harm; balancing benefits and harms;
Differing values and different social and cultural settings including an understanding of their impact on clinical decision-making
The history of medicine and evolution of medical practice, including an understanding of the importance of research methods and traditions of healing (in particular the Hippocratic traditions) in health care;
The main determinants and obstacles to the healing process, including such issues as personal psychodynamics of the therapeutic encounter, environment, community, and spirituality
The physician “as a person” and how personal issues, embedded in the physician (for example vulnerability, illness) may affect the ability of the physician to deliver optimal care; the concept of self-care (including an understanding of the “wounded healer”)

Portuguese medical students referred as valuable on their curriculum’s the following subjects: Physical Exam and History Taking, Public Health, ICU, Clinical Practice/Internships, Basic Life Support and Course of Practical Skills which curiously was also referred as lacking by a 23 year old male student from Nova University *“Having some sort of nurse-like internship on the first years would also be valuable on my university it would fit on the second semester of the second year. I feel this practical knowledge it’s neglected.”* This Basic Skills/Procedure Course it’s a specific subject from Faculdade de Medicina da Universidade da Beira Interior. Other subjects referred as lacking were: Triage, Low Resources Scenarios, Practicing Clinical Cases, Advanced Life Support, Disaster Medicine, Basic Skills/Procedure Course and Emergency Response.

Patient safety is the core of UK teaching standards. “Just as good medical students and doctors make the care of their patients their first concern, so must the organizations that educate and train medical students and doctors.”⁴⁴ Medical school curriculums should, accordingly to this standard, provide to medical students:

Table 52: Core Topics on UK’s medical school’s curriculum

Curriculum Topics
Early contact with patients that increase in duration and responsibility as students’ progress throughout the programme
Experience in a range of different specialties
The opportunity to support and follow patients, the opportunity to gain knowledge and understanding of the needs of patients from diverse social, cultural and ethnic backgrounds
learning opportunities that integrate basic and clinical science (linking theoretical and practical knowledge)
The opportunity to choose areas of interest to study while demonstrating the learning outcomes required for graduates
Learning opportunities enabling them to develop generic professional capabilities
At least one student assistantship during which they assist a doctor in training with defined duties under appropriate supervision and lasting long enough to enable the medical student to become part of the team

For UK students, on their curriculum’s the most valuable subjects are: Communication Skills, Clinical Practice/Internships, The Resus Task, Physical Exam And History Taking and Course of Pratical Skills. Subjects referred as lacking were: How to deal with language barriers, Global Health, Emergency Response, Tropical/infectious Diseases, Counselling and Emotional Support in Various Situations, Wound Dressing and First Aid.

Universities should also perceive the growing importance of international health programs. On the article *International health in medical education: students’ experiences and views*, Broome, J et al. conclude that “Future doctors need teaching in refugees’ health, patients’ cultural differences, the multifactorial influences of health, policy-making, the interests of various stakeholders, problem solving skills and evidence-based medicine. International health education provides the opportunity to acquire knowledge and skills in all of these areas.”⁴⁵ and furthermore state that “It is time that the medical profession appreciated the value of international health and gave it the recognition it deserves.”⁴⁵.

On another study on the same thematics: *Career Influence of an International Health Experience During Medical School*, after an International Health Fellowship Program (IHFP), Ramsey AH, Haq C, Gjerde CL and Rothenberg D. concludes that “Most fellows felt that IHFP participation had a positive influence on their careers.”⁴⁶.

Medical students who specifically worked with refugees “reported greater awareness of communication issues, and sensitivity toward religious values, family patterns, gender roles and ethnomedical treatments” according to Griswold, Kim et al.⁴⁷

Accordingly, to Doctor Michael-John Von Hörsten⁴⁷ an experienced doctor working on chaotic situations and providing disaster response, the most important skills/qualities a medical student that wants to volunteer should have are: good general clinical judgement, on his experience “students who are exposed to more clinical environments where they have to make treatment decisions and deal with difficult cases a lot do better and students who have spent more time in broader disciplines like internal medicine, pediatrics, obstetrics/gynecology, general surgery do better as well.”; good practical clinical skills since “students are often required to be able to do general procedures in the clinics - therefore students that have had more practice with doing these generally cope better - especially when the pressure is on” and for him not only curriculum but also personal characteristics matters “students that can keep a level head in stressful circumstances, good organizational skills with ability to put good systems in place to run the clinic attention to detail able to prioritize needs well, to be able to decide what is and what isn't important and leadership skills. “His experience also matches the results of this study, “In general students do better who have been adequately exposed to the larger disciplines mentioned above. Students from countries that emphasize early clinical exposure do well. In resuscitation environments students, do better when they have been exposed to many previous resuscitations. Some countries training is very theoretical with minimal clinical exposure and these students generally have a much harder time. In general students, do better who have worked in medical environments where the need has exceeded the available resources - this is a typical feature of humanitarian work in general.” And when asked which changes, he thinks would be valuable in the medical curriculum of medical students, all around the world, for them to be prepared to act on chaotic situations the answer was similar to those of the students who answered the survey: “More emphasis on emergency medicine. More emphasis on practical clinical skills. More exposure to developing countries medicine. Training in disaster management is not covered at all in many curriculums. This is also an area that needs more cover.”

⁴⁷ See attachment 3

Study Limitations

These study results should be interpreted with caution once this study is not free from limitations.

I am fully aware the universe in study should be more representative of the population to be able to have students from every university who performed every task but it is difficult to find medical students volunteering at refugee camps and even in the universe I analyzed, 12% of the students (n=6) claimed they did only non-medical tasks as volunteers. I suggest further studies on why are there many skilled students volunteering in needed scenarios and not putting their skills to use, is a matter of lack of confidence from the student himself? Is it that the organizations they volunteered for don't do medical work or if they do don't accept medical students and only qualified doctors even for the basic tasks?

I even suggest a further study not with volunteers but with first year doctors since volunteering is the first "clinical experience" some students have while others choose not to do it. Facing the results I got from this study, I suggest comparing the answers with students who haven't volunteer but are dealing with clinical practice for the first time as first year doctors and evaluate if they feel their curriculum is preparing them to feel comfortable working by themselves.

Conclusions

In the light of this results I can now conclude that, in response to the objective I proposed myself to investigate, medical curriculums are partially preparing students to work on disaster relief, especially in what comes to theoretical knowledge.

I can also conclude that students don't feel prepared for most tasks, there are more students stating their curriculum should change for them to feel more prepared than considering it prepares them already and because for half of the tasks less than 50% of students who performed such tasks felt confident doing it.

Inquired students suggested adding practical skills to the curriculum, for instance as a course, and other students referred that they already have that course and it's one of the valuable subjects on their curriculum. My suggestion after this investigation it's on adding this practical skills course to the curriculum of all universities maybe using the basis of the ones who already have it implemented.

Since many universities provide projects for students to volunteer and specifically for the students who want to do disaster relief before finishing their degrees, I suggest that each university provides a specific Volunteer Course. This example was made based on students answers about the most valuable subject they have on curriculums and the ones lacking; and through the previous analysis of the curriculums already in place:

Table 53: Suggestion of a Volunteer Specific Course

Volunteer Specific Course
Medicine and Humanitarian Help/Ethics
Low Resources Scenarios
Basic/Advanced Life Support
First Aid Course
Wound Dressing Course
Emergency Internship
Public Health Internship
Infectious Diseases - country dependent
Culture and Communication - country dependent

This course would consist of one theoretical subject "Medicine and Humanitarian Help/Ethics", one subject that should have a theoretical component and involve some simulations "Low Resources Scenarios", various practical skills courses, two internships: one in Emergency and other in Public Health, and two theoretical subjects that would vary per country the volunteer program was: "Infectious Diseases" and "Culture and communication".

It's also important that more volunteering programs are created, universities can arrange those programs with specific organizations at the site so that they compromise to send to them students who were previously prepared by this course and truly want to volunteer. This way the skills medical students have wouldn't be wasted and they would be assured to be working as medical staff instead of other tasks. Also, organizations would gain by having more volunteers that could help the doctors at site.

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Attachments

Attachment 1: Images



Image 1: The bus on the inside



Image 2: Working inside the bus



Image 3: Testing the ECG machine



Image 4: Testing the monitor



Image 5: Portable ultrasound machine



Image 6: The inside of the ambulance



Image 7: Prescription method without translation



Image 8: The inside of clinic's facilities



Image 9: The inside of clinic's facilities



Image 10: The clinic's pharmacy



Image 11: The clinic and the bus



Image 12: "Pink Eye" Diagnose



Image 13: Leishmaniasis



Image 14: Leishmaniosis

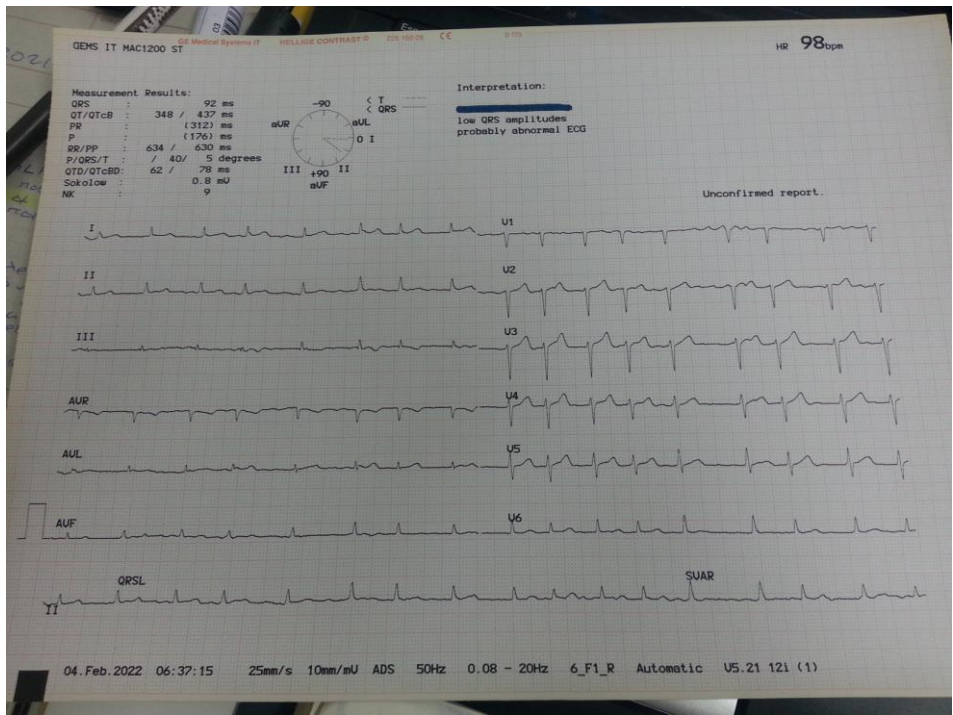


Image 15: Atrial Fibrillation

Attachment 2: Online Survey

Medical students working on disaster relief: analysis of their competences

My name is Maria Helena Silva, I am a 6th year medical student from Faculdade de Ciências da Saúde da Universidade da Beira Interior, Portugal and I was volunteering in Greece at the Oinofyta Refugee Camp, with Adventist Help, for one month and with Do Your Part another month.

Now I am doing my master final thesis on the medical school's curriculum place to prepare students to work on this kind of scenarios and do disaster relief.

If you are receiving this survey it's because, like me, you were a medical student volunteering with refugees. I would like you to help me by answering a questionnaire about your medical curriculum, the activities you did in the clinic and how prepared and confident you felt.

This survey has an initial questionnaire about personal information and information about your medical school and a second section with 18 questions, some of multiple choice and some open questions about your specific work while volunteering and a last section with three questions about your medical school's curriculum and the final assessment of all the experience.

Feel free to contact me if you have further questions or doubts on my email:

mariahelena.fs@outlook.com.

Thank you very much for your time and availability.

* Required

- Name
- Country of origin: *
- Gender: *

Male

Female

- Age: *
- Medical School: *
- Number of years medical degree consist on at this university? *
- Year of degree enrolling / finished when volunteering with refugees: *
- Country/camp where you volunteered: *
- Period of time volunteering: *

1. As a volunteer I got to do the following medical tasks (select all that apply): *

Check all that apply.

Triage

Medical history

Physical exam

Diagnostic procedures (e.g.: funduscopic exam, ultrasound, fetal Doppler, etc...)

Counselling

Therapeutic advice / Prescription

Emergency care

Preventive care

Other:

2. As a volunteer I got to do the following medical tasks BY MYSELF (select all that apply): *

Check all that apply.

Triage

Medical history

Physical exam

Diagnostic procedures (e.g.: funduscopic exam, ultrasound, fetal Doppler, etc...)

Counselling

Therapeutic advice / Prescription

Emergency care

Preventive care

Other:

If triage was one of the options you selected, answer the following question, if not mark the option "this question doesn't apply to my answers" and continue to number 4.

3. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

If collecting medical histories was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and proceed to number 6.

4. I was able to collect medical histories concerning the following specialties:

5. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

If physical exam was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and continue to number 8.

6. I performed physical examinations concerning the following systems:

7. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answer. If diagnostic procedures was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and continue to number 10.

8. I performed the following diagnostic procedures:

9. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished. I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

If counselling was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and continue to number 12.

10. I provided counselling and gave medical advice on the following areas:

11. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

If therapeutic advice / prescription was one of the options you selected, answer the following questions, if not mark the option "This question doesn't apply to my answers" and proceed to number 14.

12. I had to handle drugs of the following families:

13. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.
This question doesn't apply to my answers.

If emergency care was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and continue to number 17.

14. I had to provide emergency care on the following situations:

15. I did the following emergency procedures:

16. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

If preventive care was one of the options you selected, answer the following questions, if not mark the option "this question doesn't apply to my answers" and continue to number 19.

17. As preventive care I did the following procedures:

18. Select all that apply: *

Check all that apply.

I was able to complete this task successfully by myself.

I felt confident while doing this task.

In my medical degree's curriculum I have subjects that helped me through this task.

I was never confronted with such a situation on the years of medical degree I already finished.

I think my medical degree's curriculum should change in order for me to feel more confident on this task.

I think my medical degree's curriculum prepared me to do this.

This question doesn't apply to my answers.

19. Based on your experience as a medical volunteer on a chaotic situation what subject

do you think your school's curriculum has that was the most valuable on this situation? *

20. Based on your experience as a medical volunteer on a chaotic situation what subjects do you think your school's curriculum lacks and that would be valuable on this situation?

*

21. Do you consider that your work as a medical student was valuable on this situation? *

Yes

No

22. Free comentary:

Attachment 3: Questions from the interview to Doctor Michael-John Von Hörsten

1. As an experienced doctor working on chaotic situations and providing disaster response, what do you think are the most important skills/qualities a medical student that wants to volunteer should have?
2. According to your experience how much prepared are medical students, to be working on this kinds of fields?
3. In your opinion, and working with medical students from every corner of the world, which differences have you noticed on how well medical students are prepared to do disaster response, according to their countries/region curriculum?
4. Which changes, if any, do you think would be valuable in the medical curriculum of medical students, all around the world, in order for them to be prepared to act on chaotic situations?
5. Any advises and personal experience cases you want to share about medical students working on disaster response?

Attachment 4: Informed Consent

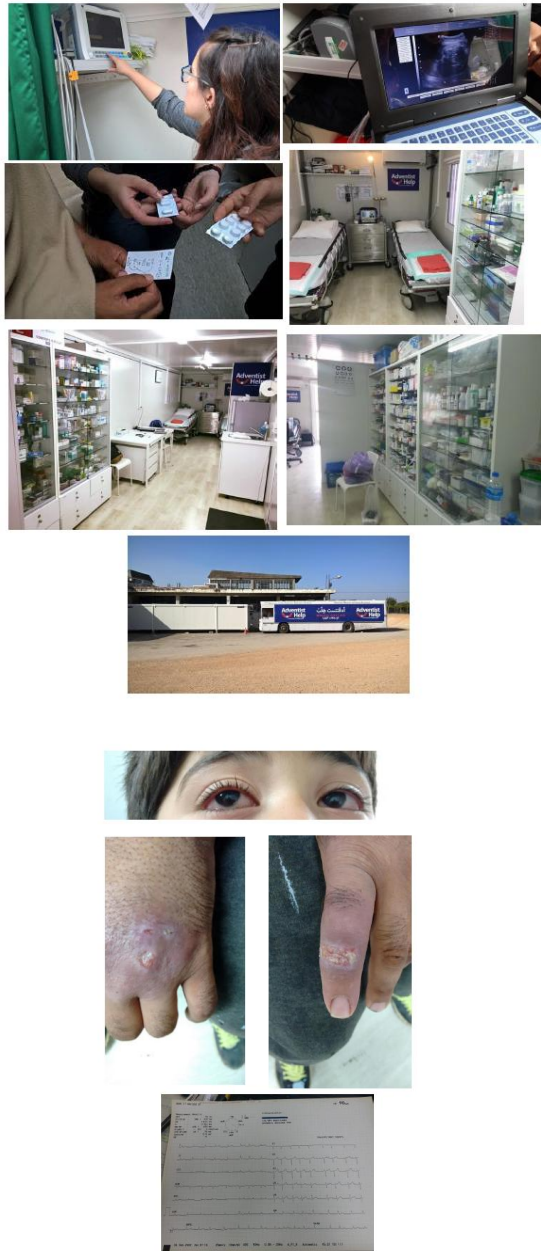
Informed Consent

I hereby declare that I gave consent to Maria Helena Ferreira da Silva, to use pictures and photographs from Adventist Help and my personal social media as coordinator of the project at the time, being those pictures related to her staying in Greece and cooperation with Adventist Help at the Oinofyta Refugee Camp.

I also declare that I was informed those photographs were going to be use on her master degree thesis, with the title *Medical students working on disaster relief* which involves public presentations and may involve publication.

As coordinator of the project at the time, I also give consent for her to use and publish photos she took on Adventist Help facilities at Oinofyta Refugee Camp that including the bus, the clinic and the ambulance, and pictures where no patient can be fully identified.





For all of the above being truth I sign this document giving my informed consent,

Adligenswil, 25th April 2017
Ul. [Signature]