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LIFELONG LEARNINGS IN MEDICAL STUDENTS AND ITS ASSOCIATED FACTORS

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DEDICATIONS & ACKNOWLEGEMENTS

Dedications

This thesis goes to :

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my beloved small family, you have consistently strived to create a nurturing and loving home, and I am deeply appreciative of your support over the years.

To my person :

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LIST OF ABBREVIATIONS

| AAMC | The American Association of Medical Colleges |
|-------------|--|
| СМЕ | Continuing Medical Education |
| JeffSLL-HPS | the Jefferson Scale for Lifelong Learning – Health Professions Student Version |
| ELLI | the Effective Lifelong Learning Inventory |

INTRODUCTION

Lifelong learning is a skill that can be defined as the individuals' ability to recognize their own learning needs, and their sustained motivation to actively engage in the search for knowledge [1]. This concept is known to be an important aspect of the medical profession, as it has been established that it plays a leading role in the prevention of work distress in physicians and nurses, and constitutes a major pilar of professionalism in healthcare [2-3].

Indeed, health professionals are always urged to stay informed with the most recent developments in health care, through what is referred to as "Continuing Medical Education (CME)". Currently, a great number of efforts are being made to improve the effectiveness of CME opportunities, like encouraging health professionals and physicians to actively participate in lifelong learning, all in the benefit of improving populations' health. [4]

When it comes to studying medicine, the responsibility for lifelong learning should be insisted upon ever since the first years of medical school. The American Association of Medical Colleges (AAMC) emphasizes on medical schools to ensure that before graduation, a medical student should have demonstrated an understanding of the need to engage in lifelong learning to stay abreast of relevant scientific advances [5]. On the other hand, the American Medical Association has dedicated an online platform to help medical doctors and other health professionals keep updated and provide advice on how to keep learning while practicing [6].

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If lifelong learning is largely recognized as a basic skill for future doctors and health professionals in developed countries, where both medical studies and practice are highly regulated and sufficiently controlled, little is known about the implementation of such a skill in low-and-middle-income countries. In Morocco, engaging in CME is encouraged by the health competent authorities, but not yet regulated nor made compulsory for physicians to keep their license, as it's the case in developed countries [7].

Moreover, participating in CME events and trainings is not easy for all health professionals mainly because of financing and time limitations. Hence, preparing future doctors to be effective and autonomous lifelong learners seems crucial to limited resources countries like Morocco, especially given the lack of motivation among physicians and health professionals to pursue a voluntary-based and mostly self-financed CME.

In order to implement a culture of lifelong learning among medical students, it is important to understand their predisposition to develop such a skill, and to understand the multiple factors that could influence developing it. In 3 recent studies, some factors were found to be associated to Lifelong learning orientations, such as Empathy, self-efficacy, family loneliness, or learning contexts [8-10]. One would suggest that Lifelong learning tendency could also be associated with one's passion about their study/practice field, one's motivation in pursuing a great career and one's mindset regarding their ability to influence their intelligence (growth mindset). However, to our knowledge, these associations have hardly been reported in the scientific literature regarding medical students.

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The aim of the present study was to examine Lifelong Learning abilities in medical students of Tangier's Faculty of Medicine, and analyze their correlations with possible associated factors. Understanding these factors would be helpful not only in implementing Lifelong learning skills in medical students, but also in preparing them to apply these skills autonomously and effectively in their future professional life.

METHODS

1. Participants and setting:

This is a cross-sectional study that was conducted during the month of April 2023 at the public faculty of medicine and pharmacy of Tangier. It targeted all medical students from 1st to 7th year, of the named faculty.

2. Study design:

Data was collected through an anonymous paper questionnaire, in French which was distributed with the help of students' representatives, to all medical students available at their hospital training sites for those in clinical years (from 3rd to 7th year), and during the practical work sessions for those in pre-clinical years (1st and 2nd year). A total of 718 students consented to take part of the study and returned their filled-in questionnaire.

The questionnaire was made of 4 sections:

- *The first section* collected general demographic and academic information (age, sex, nationality, study level, self-perceived academic performance).
- **The second section** explored the students' passion regarding medicine, their conviction of becoming a good doctor and the perceived stress associated with medical studies. All of these items were self-assessed on a numeric scale ranging from 1 to 10.

- *The third section* was intended for measuring students' mindset using the French translation of the Three-Item Carol Dweck Growth Mindset Scale [11]. This scale is a tool for measuring mindset regarding One's intelligence, and contains 3 total items. The response to each of the items is based on a 6-point Likert like scale (1 = strongly agree to 6 = strongly disagree). The total score is computed as the means of the inverted values of all three items' scores, and ranges from 1 (representing the highest level of mindset) to 6 (representing the lowest level of mindset) [Appendix 1].
- The fourth section contained the French version of the Jefferson Scale for Lifelong Learning Health Professions Student Version (JeffSLL-HPS). It is a specific and valid instrument that measures health professions students' (HPS) orientation toward lifelong learning (LLL) [12]. The response options are presented along a 4-point Likert scale (1= strongly disagree; 4 = strongly agree) for each item. The sum of the 14 items yields a total score with a range of 14 56. Higher JeffSLL-HPS scores indicate a greater orientation toward lifelong learning [Appendix 2]. Permission to use the JSLL-HPS in the current study, was granted by its original authors, and copyright holders.

3. Data extraction and statistical analysis:

Data was extracted to a Microsoft Excel spreadsheet where the JeffSLL-HPS and the Three-Item Carol Dweck Growth Mindset Scale scores were calculated, and then transferred and analyzed using SPSS 26.0. Categorical variables were presented using percentages while quantitative variables were expressed using means and standard deviations. Independent t-test and ANOVA were performed in order to determine the associations between the mean lifelong learning scores and the studied factors. p<0.05 was considered as the significant level.

4. Ethics:

This study was carried out in compliance with the Declaration of Helsinki and the Moroccan laws in terms of the protection of the rights of individuals. The Study was approved by the University Hospital Ethics Committee of Tangier. All participants provided their informed consent to participate.

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RESULTS

1. Participants' Characteristics

A total of 718 medical students answered the questionnaire. Their personal characteristics are defined below.

1.1. Age & Sex

The participants' age ranged from 17 to 35 years, with a means of 20.19 ± 1.978 years. As shown in Figure 1; 437 the participants were females (60.9%), whereas 281 were males (39.1%).



Figure 1. Participants' distribution by gender

1.2. Nationality

As shown in Figure 2, 674 of our participants were Moroccans (94.4%), whereas 40 of them were foreigners studying in Morocco, representing 5.6% of the total participants' number.



Figure 2. Participants' distribution by nationality

1.3. Level of medical studies

Figure 3 depicts the breakdown of participants' level of studies in the medical Faculty. 395 participants were enrolled in the first 2 years of medical studies (55%), whereas 323 of them were enrolled in the clinical studies (3rd to 7th year), representing 45% of all participants.



Figure 3. Participants' distribution by level of medical studies

1.4. Academic performance

Students' academic performance were rated based on both final grades of high school and that of last year in medical school (on a scale from 0 to 20). The first's mean score was 17.27 \pm 1.10 meanwhile the seconds was 13.84 \pm 1.64.

1.5. Access to learning resources

652 students (91.6%) reported having a permanent internet connection access at home, while 60 (8.4%) confirmed that they did not. But when it came to credible medical resources, only 404 (56.7%) reported that they had accessibility, while 308 (43.3%) mentioned the opposite (Figure 4).



Figure 4. Participants' distribution by access to credible medical resources

2. Participants' beliefs and attitudes regarding medical studies

2.1. Passion about the medical field

Participants' mean score (on a scale from 1 to 10) regarding being passionate about the medical field was 7.93 ± 1.84 , with a maximum of 10 and a minimum of 1.

2.2. Conviction of becoming a good physician

When asked to self-assess their conviction of becoming a good physician on a scale from 1 to 10, the participants' score was 8.17 ± 1.67 with a maximum of 10 and a minimum of 1.

2.3. Stress during medical studies

When promoted to self-assess their stress during medical studies on a scale from 1 to 10, the participants' score was 7.43 ± 2.39 with a maximum of 10 and a minimum of 1.

3. Participants' Mindset

Analysis of the Carol Dweck three-item growth mindset scale revealed a mean score of a growth mindset at 3.14 ± 1.18 with a maximum of 6 and a minimum of 1. It is important to mention that the higher the value the least the adaptation of a growth mindset with 1 being the lowest individual score and 6 being the highest.

4. Jefferson Scale for Lifelong learning

Analysis of the Jefferson Scale for Lifelong learning – Health Professions Student version

(Jeff SLL – HPS) found a mean score of lifelong learning orientation of 40.07 \pm 5.58. Table 1

provides the mean score by item of the scale.

Table 1. Jefferson Scale for Lifelong Learning – Health Professions Student Version (Jeff SLL-HPS), mean scores by item:

| Item | Means | SD |
|---|-------|------|
| 1. Searching for the answer to a question is, in and by itself, rewarding. | 3.49 | 0.66 |
| 2. Lifelong learning is a professional responsibility of all healthcare providers. | 3.57 | 0.65 |
| 3. I enjoy reading articles in which issues of healthcare/medicine are discussed | 2.83 | 0.83 |
| 4. I routinely attend student study groups | 2.11 | 0.89 |
| 5. I read healthcare/medical literature in journals, websites or textbooks at least | | |
| once every week | 2.03 | 0.90 |
| 6. I routinely search electronic resources to find out about new developments in | | |
| healthcare/medicine | 2.21 | 0.91 |
| 7. I believe that I would fall behind if I stopped learning about new developments | | |
| in healthcare/medicine | 2.89 | 0.94 |
| 8. One of the important goals of health professions' education is to develop students' | | |
| lifelong learning skills | 3.45 | 0.70 |
| 9. Rapid changes in health science/medicine require constant updating of knowledge | | |
| and development of new professional skills | 3.51 | 0.67 |
| 10. I always make time for learning on my own, even when I have a busy class schedule and | | |
| other obligations | 2.46 | 0.93 |
| 11. I recognize my need to constantly acquire new professional knowledge. | 3.11 | 0.76 |
| 12. I routinely attend optional sessions, such as professional meetings, guest lectures, or | | |
| clinics where I can volunteer to improve my knowledge and clinical skills | 2.28 | 0.99 |
| 13. I take every opportunity to gain new knowledge/skills that are important to | | |
| my discipline. | 2.76 | 0.88 |
| 14. My preferred approach in finding an answer to a question is to consult a credible | | |
| resource such as a textbook or electronic resource. | 3.36 | 0.77 |
| Total score | 40.07 | 5.58 |
| | | 0.00 |

5. Factors associated to lifelong learning tendencies in medical students

Table 2 Summarizes the results of univariate analysis exploring the potential associations between lifelong learning abilities as reflected by the Jefferson scale, and the participants different characteristic.

5.1. Lifelong learning and personal characteristics

Age was negatively associated with Lifelong learning levels, with older students having lower lifelong learning orientation scores (p<0.0001). Sex was also significantly associated to lifelong learning tendencies with females having greater scores (p=0.032). Clinical students had significantly lower lifelong learning tendencies scores compared to preclinical students. The mean difference was 2.59 points (p<0.0001). There also was an association between students studying medicine in their native country, and others coming from another country to do so, a mean difference of 2.20 points on JeffSLL-HPS was identified in favor of local students (p=0.016).

5.2. Lifelong learning and academic performance/ Access to resources

Great academic performance in high school wasn't correlated with greater tendencies to lifelong learning (p=0.20), meanwhile it was apparent that when it came to academic performance in medical studies, students who got better grades had more orientation to lifelong Learning (p<0.0001). There was no statistical significance however between JeffSLL-HPS scores and internet connection accessibility at home. Nevertheless, that wasn't the case when it came to medical resources accessibility, where students who had access to those scored more on lifelong learning (p<0.0001).

5.3. Lifelong learning and Passion towards medicine

Passion towards medicine and conviction of becoming a good physician both showed a positive correlation with lifelong learning tendencies (p<0.0001).

5.4. Lifelong learning and Mindset

When it came to growth mindset, participants who scored less on Carol Dweck's growth mindset scale (meaning that they adopted more of a growth mindset) were more likely to have lifelong learning abilities (p<0.0001).

| | Factor | | Means | SD | p value | Pearson Correlation |
|--------|---|--------------------|-------|-------|---------|------------------------|
| | Age | | 20.19 | 1.978 | 0.000 | -0.202 |
| | High school final grade | | 17.27 | 1.107 | 0.20 | 0.088 |
| ve | Last year in medical school final grade | | 13.84 | 1.645 | 0.000 | 0.309 |
| litati | Passion towards medical studies | | 7.93 | 1.847 | 0.000 | 0.397 |
| uant | Conviction of becomin | g a good physician | 8.17 | 1.679 | 0.000 | 0.292 |
| 0 | Stress during medical | studies | 7.43 | 2.399 | 0.785 | -0.010 |
| | Carol Dweck's growth mindset scale | | 3.14 | 1.184 | 0.000 | -0.225 |
| | | | | | | |
| | 0 | | 20.51 | 5 520 | 0.022 | |
| | Sex | Men | 39.51 | 5.538 | 0.032 | |
| | | Women | 40.43 | 5.598 | | |
| | Nationality | Moroccan | 40.20 | 5.580 | 0.016 | |
| | | Foreigner | 38.00 | 5.625 | | |
| ative | Study level | Preclinical | 41.23 | 5.115 | 0.000 | |
| ualit | | Clinical | 38.64 | 5.817 | | |
| ð | Internet accessibility | Yes | 40.14 | 5.468 | 0.352 | |
| | | No | 39.12 | 6.737 | | |
| | Resources | Yes | 40.79 | 5.804 | 0.000 | |
| | accessibility | No | 39.15 | 5.194 | | |

Table 2. Factors correlations with lifelong learning tendencies by item:

DISCUSSION

The present cross-sectional study yielded expected and yet, interesting results regarding lifelong learning skills and their associated factors. Through the 718 surveyed medical students, we found an overall lifelong learning score of 40.07 ± 5.58 , a result that is closely similar to the one of a recently published studies in Malaysian and Peru [9, 13]. This could lead us to assume that medical students' lifelong learning tendencies don't differ a lot in middle-income countries even while in different continents.

When closely examining the individual items' scores of the Jefferson scale of lifelong learning, we find that items 4, 5, 10 & 12 (Cf. table 1) scored less than the other items. This could be explained by the fact that they measured repetitive habits of practicing voluntary lifelong learning activities at the present time, which was obviously not the case in the majority of our participants. On the other hand, many of the other Jefferson scale's items which scored higher were measuring students' conviction of their need to lifelong learning, such as item 2. Similar results were found in previous American study using the same scale on medical students. [14]. Furthermore, a survey conducted on practicing physicians using the physicians' version of the Jefferson scale of lifelong learning, found the same means distribution through the scale's items [15].

There was a statistically significant difference in lifelong learning tendencies levels between the two sexes with females tending to have higher tendencies than males; which is in agreement with most literature findings on the subject [16]. The main explanation, researchers provide for these gender differences is based on the difficulties generally encountered by women when pursuing educational opportunities. Women would place a greater focus on lifetime

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learning activities in order to compensate for the disparities they have experienced throughout their educational careers [17].

Age and level of medical studies were proven to be also correlated with orientation to lifelong learning which decreases as students advance through both of them. Similar results were reported in the Malaysian study as well [13]. This phenomenon could be due to the fact that medical students are generally more motivated to learn when they embark on the journey of studying medicine. However, we should note that in literature we still find conflicting results. A meta-analysis found that the tendencies towards lifelong learning were higher in practicing health professionals than trainees (students and residents) [18]. Another study by Wetzel & al noted that clinical students scored significantly higher in orientation toward lifelong learning than preclinical ones [14].

Contrary to the Emirian study [8] that found no significant difference in lifelong learning tendencies between their national and international students, our study concluded a slightly higher scores in local students (Moroccans). However, we should remind that non-Moroccans represented a relatively small sample of the whole studied population (only 5.6%).

Babenko et al. had suggested that motivation plays an important role in stimulating medical students' engagement in lifelong learning activities [19]. This was confirmed by our study results pointing out that students' passion about their study field, and their conviction of becoming a good physician, were all was positively correlated with their lifelong learning tendencies levels. In fact, we note that passion had the highest Pearson Correlation's score among all other numeric factors. This comes without a surprise giving the fact that half the items

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of the JeffSLL-HPS scale (item 1, 2, 7, 8, 9, 11, & 14) relate to "learning beliefs and motivation" [13]. Academic performance was also highly correlated with our participants' tendency to pursue lifelong learning, which can be explained by the fact that high performers are usually goal oriented and would make the effort to maintain their usual level of achievement overtime, which necessarily goes through self-directed learning, and lifelong learning [20]. However, a British study didn't conclude the same result regarding academic achievement and lifelong learning tendencies as our study [21]. Worth to mention that their study targeted postgraduate medical students, and they had used a difference lifelong learning scale: "the Effective Lifelong Learning Inventory (ELLI)" [22].

Even with a larger standard deviation than usual, stress during medical studies showed a high mean score of 7.43 out of 10. Similar results were reported in many other studies, such as a paper by Mamo J & al. which compared psychological stress among non-medical & medical students, and found that the later had higher stress levels [23]. Still, as we mentioned earlier, stress showed no correlation to lifelong learning tendencies in our study.

According to Carol Dweck, an imminent psychologist researcher who developed the theory of implicit intelligence, there are two main types of mindsets; a fixed and a growth mindset [24]. Students with a growth mindset believe that they can develop their abilities and intelligence over time, when students with a fixed mindset believe that one is born with a fixed level of intelligence that cannot be improved through experience or effort [25]. It has been proven that these mindsets affect academic performance and achievement motivation in pupils and students [26-27]; Indeed, people with a fixed mindset tend to give up easily and avoid

challenges, whereas people with a growth mindset would embrace challenges and learn from criticism [25]. In our study, a significant correlation was found between lifelong learning tendencies in our participants and their level of growth mindset as reflected by their score on the Three-Item Growth Mindset Scale. A similar result was found in one previous study reported that students with a growth mindset and fulfilled psychological needs were more likely to engage in lifelong learning practices [19].

Lifelong learning tendencies didn't show to be significantly correlated to internet accessibility at home, which the supermajority of students reported having (91.6%). However, accessibility to credible medical resources showed to be positively correlated to Lifelong learning orientation. One possible explanation is that students who would seek access to these resources are more motivated to pursue lifelong learning in the first place. Note to mention here that the respondents' understandings of a "credible medical resource" was left subjective and no precise definition was given in the survey.

CONCLUSION

Our study showed that medical students of the faculty of medicine and pharmacy of Tangier had a good enough tendency to lifelong learning as reflected by the relatively high mean total score of the Jefferson scale. It also showed that students who were more passionate about their medical studies, those who have access to credible medical resources and those with a growth mindset were more prone to have the lifelong learning tendency. Hence, focusing on cultivating students' passion towards the medical profession, growth mindset adaptation and providing access to credible medical resources, may increase their orientations towards lifelong learning.

To our knowledge, this is the first study to explore lifelong learning in Moroccan medical students. It has showed interesting results, but it has some limitations that should be considered when interpreting the study's findings. On one hand, this study is of the cross-sectional type; and doesn't include a longitudinal follow up. The second limitation is that we targeted only one medical education institution; so forth the results should be interpreted with caution even if the educational environment is broadly similar among all medical faculties of the country.

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ABSTRACTS

ABSTRACT

Background: Lifelong learning is important in making sure that physicians stay up to date with the latest medical advancements, and thus providing their patients with the best possible care and treatment. This study aims to measure lifelong learning tendencies among medical students of FMPT and analyze their association with different factors.

<u>Methods</u>: This is a cross-sectional study conducted in 2022 targeting undergraduate medical students of Tangier. The French version of the Jefferson Scale for Lifelong Learning – Health Professions Student Version (JeffSLL-HPS) was used to measure lifelong learning tendencies scores. the French translation of the Three-Item Carol Dweck Growth Mindset Scale was used to measure mindset, in addition to various custom created items about other factors.

<u>Results</u>: The study consisted of n=718 medical students, with a mean age of 20.19 \pm 1.97 years. The majority were females (60.9%). The overall mean JeffSL-HPS score among the students was 40.07 \pm 5.58. Lifelong learning tendencies scores were significantly related to most of the factors we studied, of some we mention medical school study level (p=0.00), reason of pursuing a medical profession (p=0.00), medical resources accessibility (p=0.00). among the quantitative factors, passion towards medical studies (p=0.00) and good academic performance in medical school (p=0.00) were the most positively correlated.

<u>Conclusion</u>: Focusing on cultivating students' passion towards the medical profession, growth mindset adaptation, and providing access to credible medical resources, may increase their orientations towards lifelong learning.

Key Words: Lifelong learning, Medical students, Growth mindset, Morocco.

RESUMÉ

<u>Contexte</u>: L'apprentissage tout au long de la vie est important pour s'assurer que les médecins restent au fait des dernières avancées médicales et fournissent ainsi à leurs patients les meilleurs soins et traitements possibles. Cette étude vise à mesurer les tendances en matière d'apprentissage tout au long de la vie chez les étudiants en médecine de la FMPT et à analyser leur association avec différents facteurs.

<u>Méthodes</u>: Il s'agit d'une étude transversale menée en 2022 auprès d'étudiants en médecine de Tanger. La version française de l'échelle de Jefferson pour l'apprentissage tout au long de la vie - version pour les étudiants des professions de santé (JeffSLL-HPS) a été utilisée pour mesurer les scores des tendances à l'apprentissage tout au long de la vie. La traduction française de l'échelle de l'état d'esprit de croissance à trois éléments de Carol Dweck a été utilisée pour mesurer l'état d'esprit, en plus de divers éléments créés sur mesure concernant d'autres facteurs.

<u>**Résultats</u>**: L'étude a porté sur 718 étudiants en médecine, âgés en moyenne de 20,19 \pm 1,97 ans. La majorité d'entre eux étaient des femmes (60,9 %). Le score moyen global du JeffSL-HPS parmi les étudiants était de 40,07 \pm 5,58. Les scores des tendances à l'apprentissage tout au long de la vie étaient significativement liés à la plupart des facteurs que nous avons étudiés, parmi lesquels nous mentionnons le niveau d'études médicales (p=0,00), la raison de poursuivre une profession médicale (p=0,00), l'accessibilité aux ressources médicales (p=0,00). Parmi les facteurs quantitatifs, la passion pour les études médicales (p=0,00) et les bons résultats académiques à l'école de médecine (p=0,00) étaient les plus positivement corrélés.</u>

<u>Conclusion</u>: En s'attachant à cultiver la passion des étudiants pour la profession médicale, l'adaptation à l'état d'esprit de croissance et l'accès à des ressources médicales crédibles, il est possible d'améliorer leur orientation vers l'apprentissage tout au long de la vie.

Mots clés : Apprentissage tout au long de la vie, Étudiants en médecine, Esprit de croissance, Maroc.

ملخص

الخلفية:

التعلم مدى الحياة هو أمر من الأهمية بمكان بغية التأكد من مواكبة الأطباء لأحدث تطورات الميدان الطبي، وبالتالي تزويد مرضاهم بأفضل سبل الرعاية والعلاج الممكنة. تهدف هذه الدراسة إلى قياس ميول التعلم مدى الحياة بين طلاب الطب في كلية الطب والصيدلة بطنجة، وتحليل مدى ارتباطهم بمجموعة من العوامل المختلفة.

الأساليب:

أجريت هذه الدراسة المقطعية عام 2022، وقد استهدفت طلاب الطب في كلية الطب بطنجة. النسخة الفرنسية من مقياس جيفرسون للتعلم مدى الحياة - نسخة طلاب المهن الصحية (JeffSLL-HPS) تم توظيفها لقياس درجات ميول التعلم مدى الحياة، بينما استخدمت الترجمة الفرنسية لسلم عقلية النمو ثلاثي العناصر الخاص بكارول دويك لقياس هذا الجانب، بالإضافة إلى العديد من العناصر المنشأة حول عوامل أخرى.

النتائج:

شملت الدراسة 718 طالب طب، بمتوسط عمر 20.19 ± 1.97 سنة. وكانت غالبيتهم من الإناث (60.9٪). كان متوسط درجة JeffSL-HPS بين الطلاب 40.07 ± 5.58. درجات ميول التعلم مدى الحياة كانت مرتبطة بشكل كبير بمعظم العوامل التي درسناها، نذكر من بينها مستوى الدراسة في كلية الطب (0.00=P)، وسبب اختيار ممارسة مهنة الطب (0.00=P)، وإمكانية الوصول إلى الموارد الطبية (0.00=P). ومن بين العوامل الكمية، كان الشغف بالدراسات الطبية (0.00 = P) والأداء الأكاديمي الجيد في كلية الطب (0.00 = P) العاملين الأكثر ارتباطًا على نحو إيجابي.

الخلاصة:

التركيز على تنمية شغف الطلاب تجاه مهنة الطب، والتكيف مع عقلية النمو، وتوفير الوصول إلى الموارد الطبية الموثوقة، قد يزيد من توجهاتهم نحو التعلم مدى الحياة.

الكلمات المفتاحية: النعلم مدى الحياة، طلاب الطب، روح النمو، المغرب

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APPENDIXES

APPENDIX 1

Three-Item Growth Mindset Scale by C. Dweck

Instruction: How much do you agree with the following statements?

Item 1: You have a certain amount of intelligence, and you can't really do much to change it.

Item 2: Your intelligence is something about you that you can't change very much.

Item 3: You can learn new things, but you can't really change your basic intelligence.

Response scale:

- 1. Strongly agree
- 2. Agree
- 3. Mostly agree
- 4. Mostly disagree
- 5. Disagree
- 6. Strongly disagree

Note. To compute a growth mindset score, values of all items are to be inversed.

APPENDIX 2

Jefferson Scale of Lifelong Learning (JeffSLL- Health Professions Student Version)

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| <u>Inst</u> | tructions: Please indicate the extent of your agreement with each of the following statements by circling the appropriate number. | ongly Disagree | agree | ее, | ongly Agree |
|-------------|--|----------------|-------|-----|-------------|
| | | Str | Dis | Agı | Str |
| 1. | Searching for the answer to a question is, in and by itself, rewarding | . 1 | 2 | 3 | 4 |
| 2. | Lifelong learning is a professional responsibility of all healthcare providers | . 1 | 2 | 3 | 4 |
| 3. | I enjoy reading articles in which issues of healthcare/medicine are discussed | . 1 | 2 | 3 | 4 |
| 4. | I routinely attend student study groups | . 1 | 2 | 3 | 4 |
| 5. | I read healthcare/medical literature in journals, websites or textbooks at least once every week. | . 1 | 2 | 3 | 4 |
| 6. | I routinely search electronic resources to find out about new developments in healthcare/medicine | . 1 | 2 | 3 | 4 |
| 7. | I believe that I would fall behind if I stopped learning about new developments in healthcare/medicine. | . 1 | 2 | 3 | 4 |
| 8. | One of the important goals of health professions' education is to develop students' lifelong learning skills | . 1 | 2 | 3 | 4 |
| 9. | Rapid changes in health science/medicine require constant updating of knowledge and development of new professional skills. | . 1 | 2 | 3 | 4 |
| 10. | I always make time for learning on my own, even when I have a busy class schedule and other obligations | . 1 | 2 | 3 | 4 |
| 11. | I recognize my need to constantly acquire new professional knowledge | . 1 | 2 | 3 | 4 |
| 12. | I routinely attend optional sessions, such as professional meetings, guest lectures, or clinics where I can volunteer to improve my knowledge and clinical skills | . 1 | 2 | 3 | 4 |
| 13. | I take every opportunity to gain new knowledge/skills that are important to my discipline. | . 1 | 2 | 3 | 4 |
| 14. | My preferred approach in finding an answer to a question is to consult a credible resource such as a textbook or electronic resource. | . 1 | 2 | 3 | 4 |

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HIPPOCRATIC OATH

As a member of the medical profession:

I solemnly pledge to dedicate my life to the service of humanity;

 The health and well-being of my patient will be my first consideration;

• I will respect the autonomy and dignity of my patient;

I will maintain the utmost respect for human life;

• I will not permit considerations of age, disease or disability, creed, ethnic origin, gender, nationality, political attiliation, race, sexual orientation, social standing, or any other factor to intervene between my duty and my patient;

• I will respect the secrets that are confided in me, even after the patient has died;

• I will practice my profession with conscience and dignity in accordance with good medical practice;

• I will foster the honour and noble traditions of the medical profession;

• I will give to my teachers, colleagues, and students the respect and gratitude that is their due;

• I will share my medical knowledge for the benefit of the patient and the advancement of healthcare;

• I will attend to my own health, well-being, and abilities in order to provide care of the highest standard;

• I will not use my medical knowledge to violate human rights and civil liberties, even under threat;

I make these promises solemnly, freely, and upon my honour.

Royaume du Maroc Université Abdelmalek Essaâdi Faculté de Médecine et de Pharmacie Tanger



المملكة المغربية جامعة عبد المالك السىعدي كلية الطب والصيدلة طنجة

أطروحة رقم: TM002

رئيس لجنة التحكيم

عضو

عضو

عضو

سنة : 2023

التعلم مدى الحياة بين طلبة الطب والعوامل المرتبطة به

أطروحة قدمت ونوقشت علانية يوم: 2023/09/25

من طرف السبد بو لعيش وجيه

لنيل دبلوم دكتور في الطب

الكلمات الرئيسية: التعلم مدى الحياة، طلبة الطب، روح النمو، المغرب

أعضاء لجنة التحكيم:

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> السيدة البهلول مريم أستاذة مبرزة في طب العيون