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ASSESSMENT OF GAPS IN BASIC AND ADVANCED LIFE SUPPORT SKILLS FOR CURRICULUM DEVELOPMENT IN UNDERGRADUATE AND POSTGRADUATE EDUCATION

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Sudden cardiac arrest is a leading cause of death. Guidelines compliance of rescuers have been associated with better outcomes after cardiac arrest, that's why structured training in basic and advanced life support (BLS/ALS) is essential for medical staff [1]. Therefore educational programmes for teaching BLS/ALS to medical personnel are highly advisable [5]. However, the current medical curriculum in Ukraine for both undergraduate and postgraduate education lacks such training and there is no understanding of gaps regarding the curriculum offered by different institutions. A recent European Resuscitation Council note recognizes the wide variation in BLS training among European undergraduates and recommends mandatory CPR training in medical schools. To develop an effective training programme, it is necessary to conduct an analysis of medical personnel's knowledge of BLS/ALS [3].

The aim of this study was to evaluate the self-assessment and knowledge of BLS/ALS algorithms (European Council of Resuscitation, 2021) among students compared to doctors in the Chernivtsi region, and to determine if any differences exist in order to improve the curriculum. As part of the Erasmus+ project SaveLife, a survey was conducted to identify the educational needs of healthcare professionals. The questionnaire comprised 41 closed-ended statements that addressed different aspects of BLS/ALS. Respondents rated their confidence or knowledge on a 5-point Likert scale, where 5 represented the highest level. The study involved 56 Ukrainian participants, including 18 (32.1%) students and interns (group I) and 38 (67.9%) doctors (group II). Of the students surveyed, 88.9% were under 25 years old. Among the doctors surveyed, 68.4% were in the 25-44 age group, while only 31.6% were over 44 years old.

In the self-assessment section, students had a slightly lower mean score (mean±SD) of 3.43±0.28 compared to doctors who scored 3.56±0.30 ($p<0.07$). This difference was caused by the lower self-confidence of students in assessing the responsiveness of children (3.44±0.62 and 3.89±0.76, in groups I and II respectively, $p<0.04$).

The doctors scored the highest in the 'Initial Assessment', 'Chest Compressions', and 'Ventilation' sections, with mean scores of 4.23, 4.04, and 3.95, respectively. The section on 'Post-Resuscitation Care' scored 3.86, while the 'Cardiac Rhythms and Medications', 'Emergency Defibrillator', and 'Emergency

Response' sections demonstrated weaker knowledge with scores of 3.52, 3.46, and 3.20, respectively.

The students provided a similar list to the previous one, but with lower scores and a different order of stronger and weaker knowledge.

The students provided the three best answers for the 'Chest Compressions', 'Ventilation', and 'Initial Assessment' sections, with mean scores of 3.93, 3.89, and 3.82, respectively. The 'Emergency Defibrillator' section scored 3.56, while the weakest knowledge was demonstrated in the 'Emergency Response', 'Cardiac Rhythms and Medications', and 'Post-Resuscitation Care' sections, with scores of 3.47, 3.38, and 3.51, respectively.

In the 'Initial Assessment' section, there was a significant difference between the groups in their responses, with group II scoring 4.23 ± 0.22 and group I scoring 3.82 ± 0.15 ($p < 0.001$). For the 'Emergency Response' section, there was no significant difference between the groups, but the scores were significantly lower overall (3.20 ± 1.17 for group II and 3.47 ± 0.20 for group I, $p > 0.05$). For the 'Emergency Response' section, there was no significant difference between the groups, but the scores were significantly lower overall (3.20 ± 1.17 for group II and 3.47 ± 0.20 for group I, $p > 0.05$). In the 'Chest compressions' section, doctors scored an average of 4.04 ± 0.23 while students scored 3.93 ± 0.21 ($p < 0.05$). In the 'Ventilation' section, both the doctors and students had similar values of 3.95 ± 0.24 and 3.89 ± 0.19 , respectively ($p > 0.05$). In the 'Post-resuscitation Care' section, students scored significantly lower than the referent group with scores of 3.51 ± 0.26 and 3.86 ± 0.25 , respectively ($p < 0.001$). In particular, students were less aware of the use of point-of-care ultrasound to diagnose treatable causes of cardiac arrest, such as cardiac tamponade and pneumothorax, and pacing in unstable adult patients with symptomatic bradycardia refractory to medical therapy.

In the section on 'Emergency Defibrillation', students scored similarly to the referent group, with scores of 3.56 ± 0.22 and 3.46 ± 0.33 , respectively ($p > 0.05$). The section on 'Cardiac Rhythms and Medications' received similar scores from both groups (3.38 ± 0.74 and 3.53 ± 0.88 for student and doctor groups, respectively, $p > 0.05$). The lowest scores were given for the false statement "Administer 0.5 mg of adrenaline intravenously as soon as possible to adult patients in cardiac arrest with a non-shockable rhythm" by respondents in both groups.

Thus, doctors scored significantly higher than students in chest compressions, initial assessment, and particularly in post-resuscitation care. However, there was no significant difference in self-assessment scores between the two groups. These findings may suggest a need for more training with appropriate equipment, such as point-of-care ultrasound. Therefore, it is necessary to shift the focus of training to these skills [2]. There is an urgent need to integrate BLS/ALS

courses into the students' curriculum to enhance their knowledge and improve their resuscitation skills [4]. Proper training, aimed at the weakest areas of BLS/ALS algorithms, is mandatory for both undergraduate and postgraduate medical education, with different emphasis on knowledge and skills in the curriculum depending on the learners' experience.

References:

1. Alghamdi YA, Alghamdi TA, Alghamdi FS, Alghamdi AH. Awareness and attitude about basic life support among medical school students in Jeddah University, 2019: A cross-sectional study. *J Family Med Prim Care*. 2021 Jul;10(7):2684-2691. doi: 10.4103/jfmprc.jfmprc_2557_20. Epub 2021 Jul 30. PMID: 34568155; PMCID: PMC8415673.
2. Khan TH. How to train our healthcare professionals in resuscitation: A suggested plan. *Anaesth. pain intensive care* 2020;24(4):377-382.
3. Krzyżanowski K, Ślęzak D, Dąbrowski S, Żuratyński P, Mędrzycka-Dąbrowska W, Buca P, Jastrzębski P, Robakowska M. Comparative Analysis of the Effectiveness of Performing Advanced Resuscitation Procedures Undertaken by Two- and Three- Person Basic Medical Rescue Teams in Adults under Simulated Conditions. *International Journal of Environmental Research and Public Health*. 2021; 18(9):4834. <https://doi.org/10.3390/ijerph18094834>
4. Saba, Pier Sergio; Canonico, Mario Enrico; Gambaro, Alessia; Gazale, Giovanni; Piga, Stefania; Santomauro, Maurizio; Roscio, Giancarlo. Systematic basic and advanced resuscitation training in medical students and fellows: a proposal from the Working Group on Cardiovascular Urgences and Emergencies of the Italian Society of Cardiology. *Journal of Cardiovascular Medicine* 24(Supplement 2):p e128-e133, May 2023. | DOI: 10.2459/JCM.0000000000001421
5. Vausedvan B et al. Assessment of level of knowledge of basic life support algorithm among medical and nursing students in a tertiary care teaching hospital Bindhu. *Int J Community Med Public Health*. 2016 Dec;3(12):3520-3525 <http://www.ijcmph.com> pISSN 2394-6032 | eISSN 2394-6040

PROSPECTS OF SIMULATION-BASED LEARNING FOR FUTURE DENTISTS

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Simulation-based learning is a priority in higher medical education, utilizing virtual or real models to simulate realistic situations or processes for the purpose of