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The Correlation Between USMLE and COMLEX Testing Scores

Jay Patel
University of Pittsburgh - Johnstown

Kathleen Kane MD
Lehigh Valley Health Network, kathleen_e.kane@lvhn.org

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The Correlation between USMLE and COMLEX Testing Scores in Applicants to Emergency Medicine Residencies

Jay Patel and Kathleen E. Kane, MD

Lehigh Valley Health Network, Allentown, Pennsylvania

Background

- The Comprehensive Osteopathic Medical Licensing Examination of the United States (COMLEX-USA) and the United States Medical Licensing Examination (USMLE) are a series of standardized medical licensing examinations used by osteopathic (DO) and allopathic (MD) medical schools, respectively.

Medical Licensing Examinations in the United States	
USMLE	COMLEX-USA
Step 1 – Assesses sciences basic to practice of medicine and mechanisms underlying health, disease, and modes of therapy	Level 1 – Assesses basic science knowledge and mechanisms of medicine and health
Step 2 – Tests ability to apply medical knowledge, skills, and understanding of clinical science	Level 2 - Tests medical problem solving skills and clinical concepts and principles

- Due to the similarities between the two examinations and overall program curricula, a large number of residency programs accept both COMLEX-USA and USMLE scores, however they have no standardized means of comparing DO and MD applicants
- In 2012, the American Council for Graduate Medical Education (ACGME) announced plans to assimilate with two osteopathic medicine-focused organizations, the American Osteopathic Association (AOA) and the American Association of Colleges of Osteopathic Medicine (AACOM), in order to create a single accreditation system responsible for overseeing all medicine residencies in the United States by 2015
- Studies in the past have tried to find the correlation between USMLE Step 1 and COMLEX-USA Level 1 and USMLE Step 2 and COMLEX-USA Level 2, however the results varied from study to study. One study that only used a sample size of 90 EM residents found that a correlation did not exist between USMLE Step 1 and COMLEX-USA Level 1(Sarko *et al* 2010), while another study that used 580+ internal medicine residents did find a correlation of 0.85 between COMLEX-USA Level 1 and USMLE Step 1(Chick *et al* 2010).
- A study with a relatively large sample size of emergency medicine applicants has never been done before

Primary Question

What is the correlation factor between COMLEX-USA and USMLE scores of osteopathic emergency medicine residency applicants, if one does exist?

Secondary Questions

- How does the correlation factor among applicants differ from year to year (both application year and examination year)?
- If and how is the correlation factor of USMLE and COMLEX-USA scores related to various demographics such as age, gender, and the osteopathic medical school attended?
- How do the USMLE and COMLEX-USA scores of Lehigh Valley Health Network EM residency applicants compare to those of other EM residencies across the nation?

Methods

A database was created by collecting data from Electronic Residency Application Service (ERAS) of past osteopathic medical school applicants that had taken equivalent parts of the USMLE and COMLEX-USA (i.e. COMLEX-USA Level 1 with USMLE Step 1, COMLEX-USA Level 2 with USMLE Step 2, or COMLEX-USA Levels 1 & 2 with USMLE Steps 1 & 2). Only the applicants that applied between July 1, 2006 and December 31, 2013 were used. Information other than age, gender, examination year, and the name of osteopathic medical school attended was de-identified. To make sure data from ERAS was recorded correctly into the database, 10% of the sample size was reviewed and checked for quality assurance.

Sample Size

- The sample is comprised of 556 eligible applicants
- Of those applicants, 359 or 64.6% were male and 197 or 35.4% were female
- Includes applicants from 27 different osteopathic medical schools
- The age of applicants ranges from 23 to 54 with 28 being the average

Future Direction

- The compiled database will be plotted and analyzed
- To analyze the database of matched scores yearly means, standard deviations, and Pearson correlation coefficients will be compared
- To determine if the correlation factor is changing from either one application year to another or from one examination year to another, a time series analysis will be performed on the correlation coefficients
- To determine if the age of the applicant is linked with the correlation factor of USMLE and COMLEX-USA scores, a t-test will be used. On the other hand, a chi-square test will be used for gender.
- Future analysis could include data from emergency medicine applicants of 2014
- If a strong correlation factor exists between the scores, the next step could be to determine a formula or equation that could be used to convert COMLEX-USA scores to USMLE and vice versa

REFERENCES
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