

Opportunities for ISPOR Student Network Activities to Complement the Current Academic Curricula: Results from the 2015 Outcomes Research Curriculum Survey

Priyanka Gaitonde, Student Chapter President, University of Maryland, Baltimore, MD, USA; **Carmen J. Lyttle Nguessan**, Student Chapter President, Florida A&M University, Tallahassee, FL, USA; **Elizabeth Cannon-Dang**, Student Chapter President, Thomas Jefferson University, Philadelphia, PA, USA; **Anuj Shah**, Student Chapter President, University of Arkansas for Medical Sciences, Little Rock, AR, USA; and **Elisabeth Oehrlein**, ISPOR Student Network Chair, University of Maryland School of Pharmacy, Baltimore, MD, USA

Introduction

During the fall of 2015, the ISPOR Student Network Survey Committee conducted a new survey among student members that examined educational gaps where the Student Network might provide webinars and training to complement the existing academic curricula. The curricular needs of graduate students studying health economics and outcomes research (HEOR) are very broad, with topics ranging from health policy to economics to epidemiologic methods and beyond. Given the diversity of topic areas, individual academic departments may have difficulty introducing students to each of these topics or covering advanced or emerging topics. Therefore, the objective of the survey was to identify research methods or topic areas important for HEOR that are not currently covered through departmental curriculum at universities across the world.

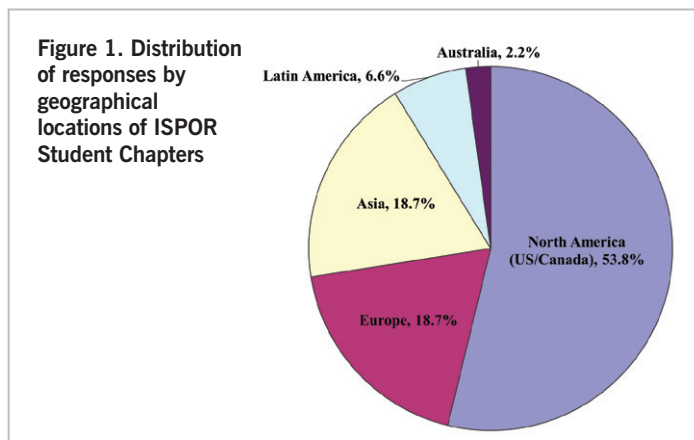
Methods

The ‘Outcomes Research Curriculum Survey’ was administered for the first time to the student chapter members. The Survey Committee constructed a 16-item survey, which was distributed to all ISPOR student members via an email link. Responses followed a Likert scale format (not familiar, little familiarity, somewhat familiar, very familiar) and/or were open ended. Topics where the sum of frequencies for “not familiar” and “little familiarity” was $\geq 50\%$ were considered as “unfamiliar.” The survey was open for a 30-day period (from November 2 to December 2, 2015).

Results

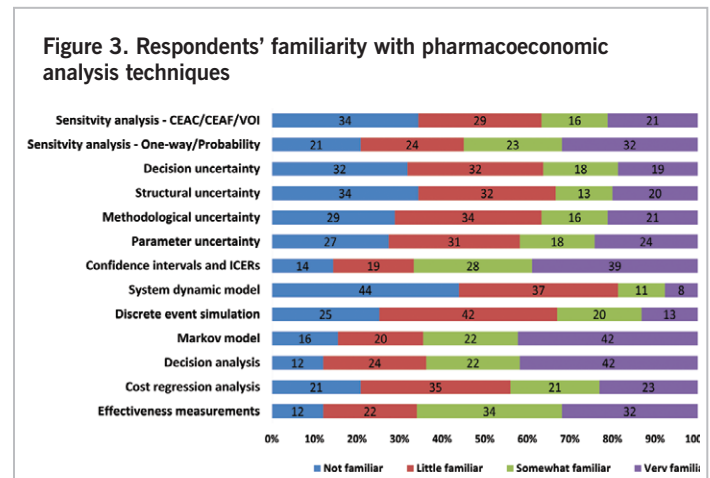
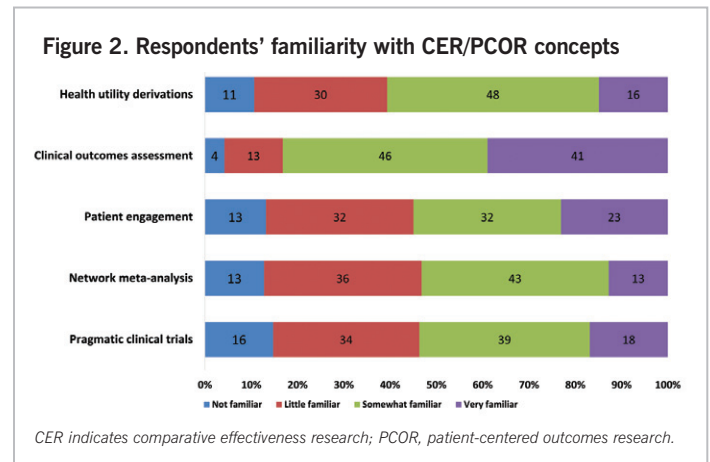
Participant information

Of approximately 900 eligible students, 88 completed the survey (response rate $\sim 10\%$). The percent distribution of responses by geographical location is presented in Figure 1. Among participants, 70.3% were PhD students, 13.2% were Masters students, and 8.8% were PharmD students. The remainder was from medical, economics, or other not-specified programs.



Familiarity with topics

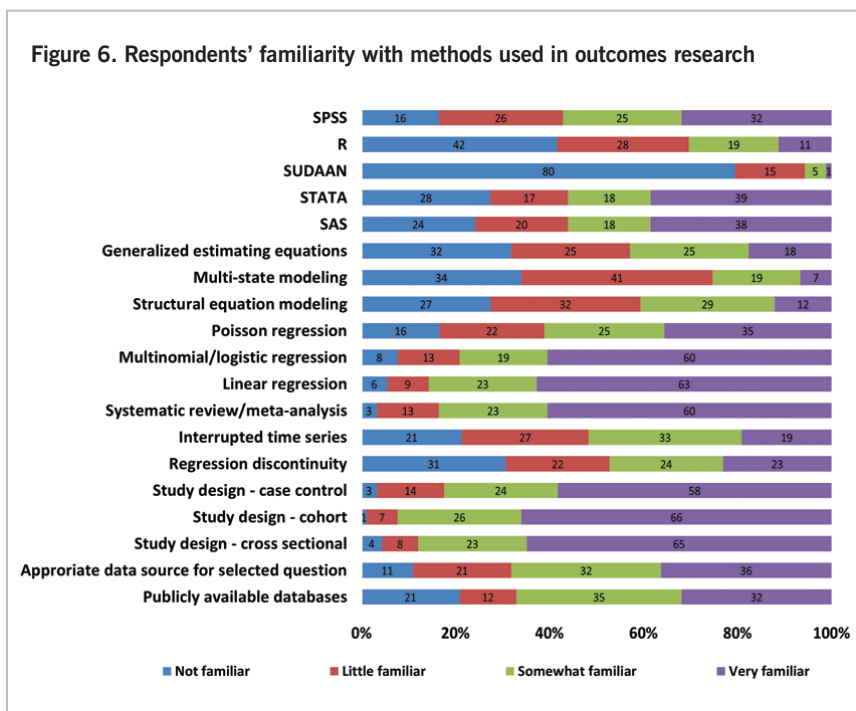
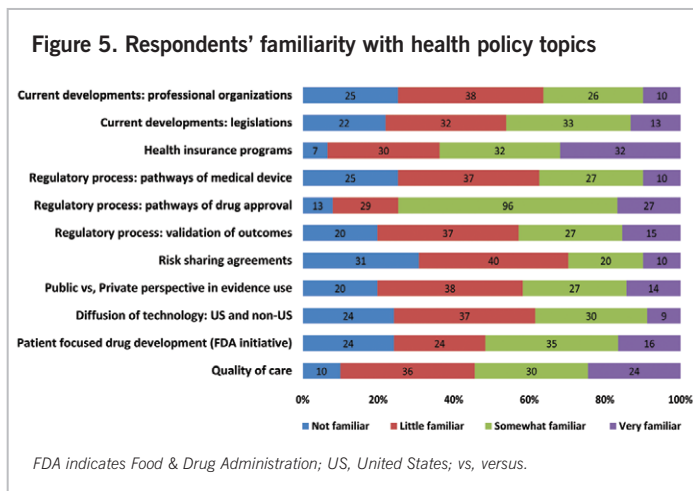
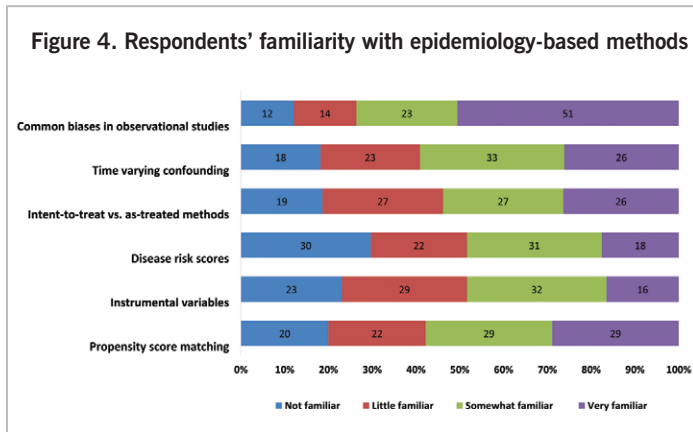
Among comparative effectiveness research (CER) / patient-centered outcomes research concepts, 49.4% respondents indicated a lack of familiarity regarding pragmatic clinical trials (Fig. 2).



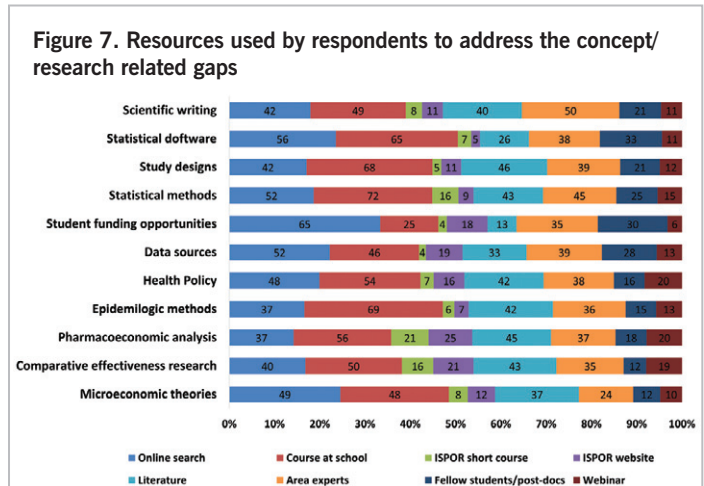
We noted that the respondents were unfamiliar with a majority of the pharmacoeconomic analysis techniques (Fig. 3), such as discrete event simulation (67.0%), structural uncertainty (66.7%), decision uncertainty (63.7%), methodological uncertainty (63.3%), parameter uncertainty (58.2%), cost regression analysis (56.0%), and advanced sensitivity analysis methods like cost effectiveness acceptability curve (CEAC), cost effectiveness acceptability frontier (CEAF), and value of information (VOI) (cumulative responses 63.3%).

Among epidemiologic methods for outcomes research, respondents were unfamiliar only with instrumental variable method (51.6%) and disease risk scores (51.6%) (deduced from Fig. 4).

In health policy-related topics (Fig. 5), respondents were unfamiliar with evidence requirements and criteria for diffusion of new technology in United States (US) and non-US markets (61.5%),



public versus private perspectives on evidence creation and use (58.2%), risk-sharing agreements (70.3%), regulatory pathway for medical device (62.6%), validation of clinical outcomes in regulatory processes (57.1%), and current developments among professional organizations such as ASCO (American Society of Clinical Oncology), ACS (American Cancer Society), etc. (63.7%). Among various topics related to methodological considerations in outcomes research, respondents were unfamiliar with advanced statistical modeling techniques such as multi-state modeling (74.7%), structural equation modeling (59.3%), and generalized estimating equations (57.1%) (Fig. 6).



Overall, the most used resource to address concept/research-related gaps are courses at school as seen in Figure 7. Online search was mostly used for information on student funding opportunities (65%), statistical software (56.5%), and information on data sources (51.8%). Courses at school were mostly used for information on statistical methods (72.4%), epidemiologic methods (68.6%), statistical software (64.7%), study designs (67.8%), pharmacoeconomic analysis (55.9%), and health policy (54.1%). The ISPOR short courses and ISPOR website are mainly used as a resource for pharmacoeconomic analysis related topics (21.4% and 25% respectively).

When asked if the respondents had any recommendations for additional ISPOR short courses, the following topics were suggested: free course on discrete event simulation, latent transition analysis, drug policy and regulations (SWOT analysis), R software, incorporation of system dynamic modeling in health care, and machine learning for health technology assessment (HTA).

Discussion

The concepts of least familiarity were: advanced topics in pharmacoeconomics such as sensitivity analysis—CEAC, CEF and VOI, uncertainty analysis, system dynamic model, and cost regression analysis; epidemiological methods such as disease risk scores and instrumental variables, most of the health policy topics, and some method topics such as multi-state modeling, generalized

estimating equations, structural equations modeling, and R software for data analysis.

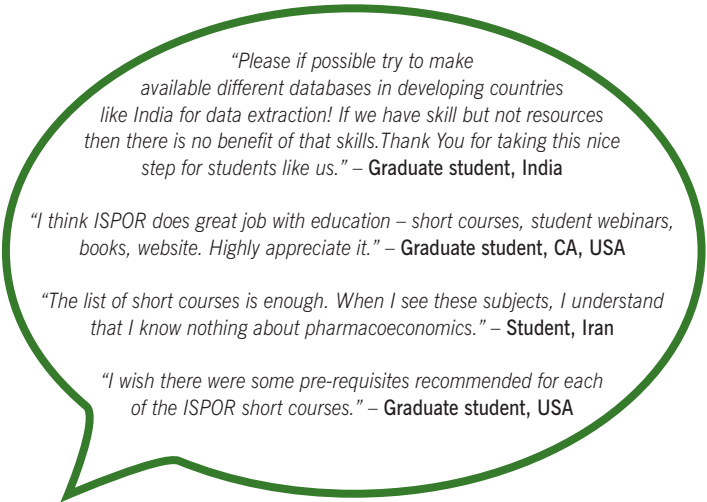
Results of this survey have highlighted some of the specialized outcomes research topics that will help inform the subject matter for ISPOR Student Network-led educational programming. As a result, the Student Network will use this data to make recommendations for increasing accessibility of the available resources such as ISPOR short courses and webinars, and provide suggestions for supplementary discussions in the courses taught at universities.

Conclusion

The Outcomes Research Curriculum Survey was administered for the first time this year and based on the response rate of a first-time survey and some of the qualitative responses to the open ended questions, we believe that this survey was well received and even appreciated by the ISPOR student members. The results of this survey indicate gaps in some of the pharmaco-economic analysis topics and mainly health policy topics. We believe that the Student Network will use the avenues such as ISPOR short courses and webinars to provide supplementary guidance on these topics in the upcoming year. ■

Figure 8: Quotes from Open-Ended Survey Questions

We have presented some selected additional comments from the respondent in Figure 8. These comments will be considered while drafting future iterations of this survey.



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