

Portuguese pharmacists perceived needs of education in anticoagulation

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1. Background and Objectives

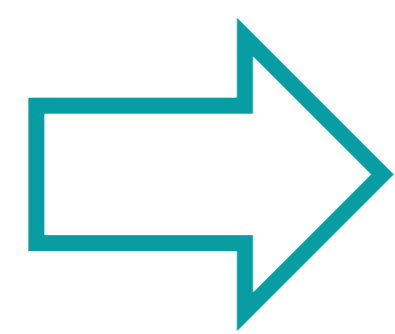
- ✓ Atrial fibrillation is the most common cardiac arrhythmia globally, responsible for one third of strokes, and often resulting in death or incapacity; [1]
- ✓ In recent years, therapeutic treatment options have expanded with the introduction of novel oral anti coagulants (NOACs) and subsequent expansion of their indications; [2] [3]
- ✓ The perception of pharmaceutical practice can not be considered adequate to match the needs of the patients group. It is a little in-depth theme in Portuguese educational institutions, and there is still little postgraduate training offer;
- ✓ However, the extent to which pharmacists have increased their knowledge and confidence in this therapeutic area remains unclear.

The **Objectives** of this project were: to identify and assess pharmacist's knowledge gaps in the areas of anticoagulation (AC), and to compare and contrast knowledge gaps by area of practice; and by country's provision of pharmacy services; additionally, we intended to explore pharmacists' preferences of format of training;

2. Methods



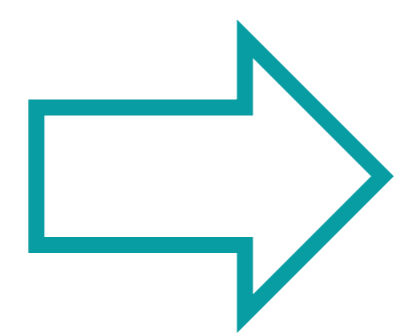
Step 1 - A survey was developed following literature review, by iPACT, originally in English



Step 2 - The survey comprised a total of 25 questions divided into 3 domains



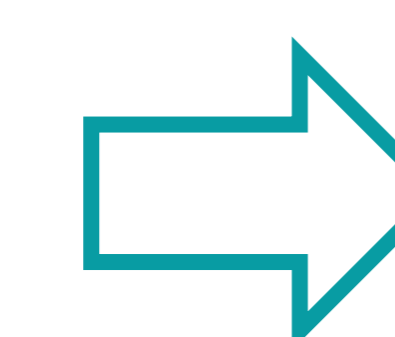
Step 3 - The original version was subsequently translated using simplified Guillemín's guidelines into 11 languages, including Portuguese



Step 4 - In Portugal, the survey was disseminated via the Portuguese Pharmaceutical Society's newsletter, over 19 weeks



Step 5 - Statistical analysis in SPSS® version 24, comprised descriptive univariate and bivariate statistics, (IC95%). Validation of the survey used PCA, followed by CFA, and Cronbach's alfa estimates.



Step 6 - Identify pharmacist's knowledge gaps in the areas of anticoagulation

3. Results

- ✓ **Sample Characterization:** After 9 months, 181 responses were obtained in Portugal out of a total of 3,324 participants worldwide (5.5%). The portuguese sample represents 1.2% of registered pharmacists.
- ✓ **Scale Validation:** PCA indicated the confidence scale could have 1 or 2 factors, depending on the country. CFA considering the 1 factor solution indicated the confidence scale's reliability ranged between 0.8 and 0.9 for all countries, where no differences between languages were detected, hence this was adopted.

References

- [1] Chugh, S. S., Havmoeller, R., Narayanan, K., Kim, Y., Jr, J. H. M., & Zheng, Z. (2014). Worldwide Epidemiology of Atrial Fibrillation: A Global Burden of Disease 2010 Study. National Institute of Health, 129(8), 837–847. <http://doi.org/10.1161/CIRCULATIONAHA.113.005119>. Worldwide
- [2] Lauffenburger, J. C., Farley, J. F., Gehi, a. K., Rhoney, D. H., Brookhart, M. A., & Fang, G. (2015). Effectiveness and Safety of Dabigatran and Warfarin in RealWorld US Patients With Non-Valvular Atrial Fibrillation: A Retrospective Cohort Study. Journal of the American Heart Association, 4(4), e001798–e001798. <http://doi.org/10.1161/JAHA.115.001798>
- [3] Yao, X., Abraham, N. S., Alexander, G. C., Crown, W., Montori, V. M., Sangaralingham, L. R., ... Noseworthy, P. A. (2016). Effect of Adherence to Oral Anticoagulants on Risk of Stroke and Major Bleeding Among Patients With Atrial Fibrillation. Journal of the American Heart Association, 5(2), e003074. <http://doi.org/10.1161/JAHA.115.003074>

3. Results

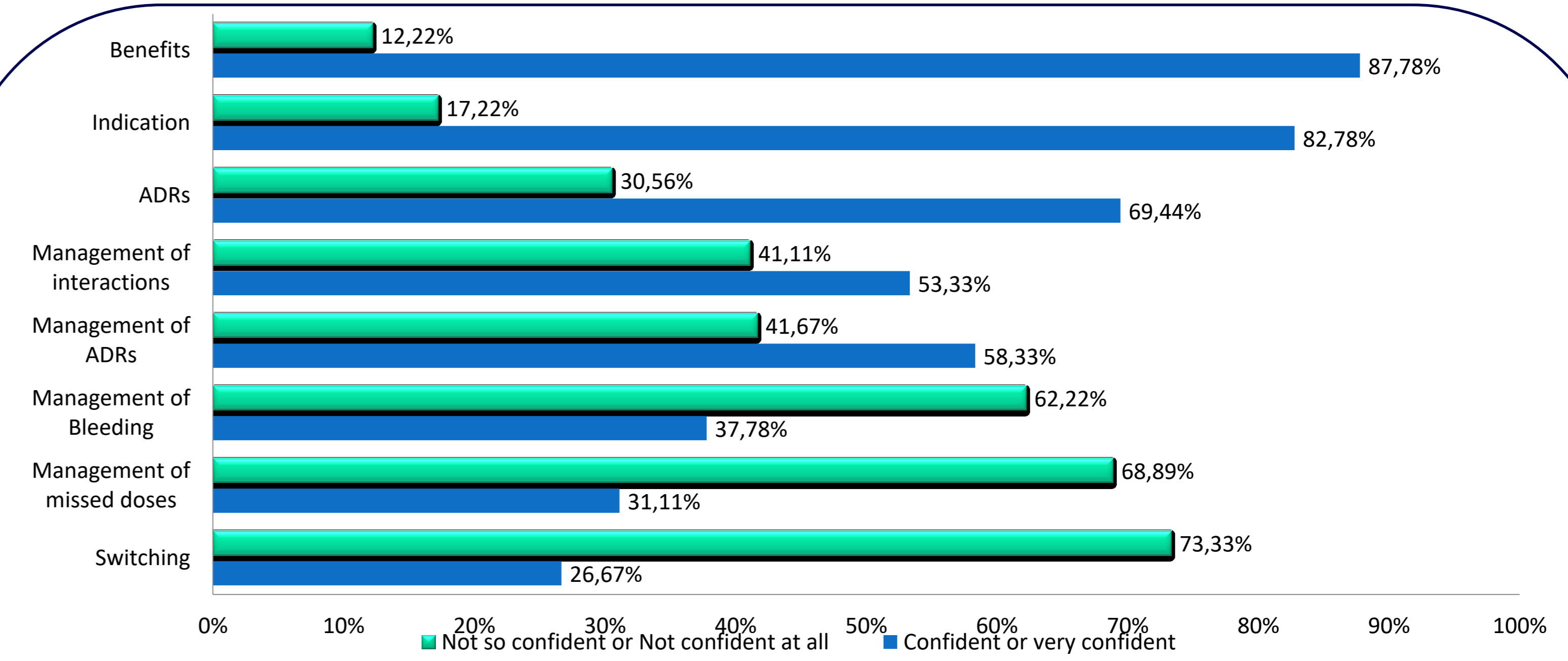


Figure 1: Distribution of confidence levels by areas of knowledge

- ✓ Portuguese pharmacists were more confident discussing benefits and indication; conversely, switching, management of missed doses and of bleeding may be top priorities for education.

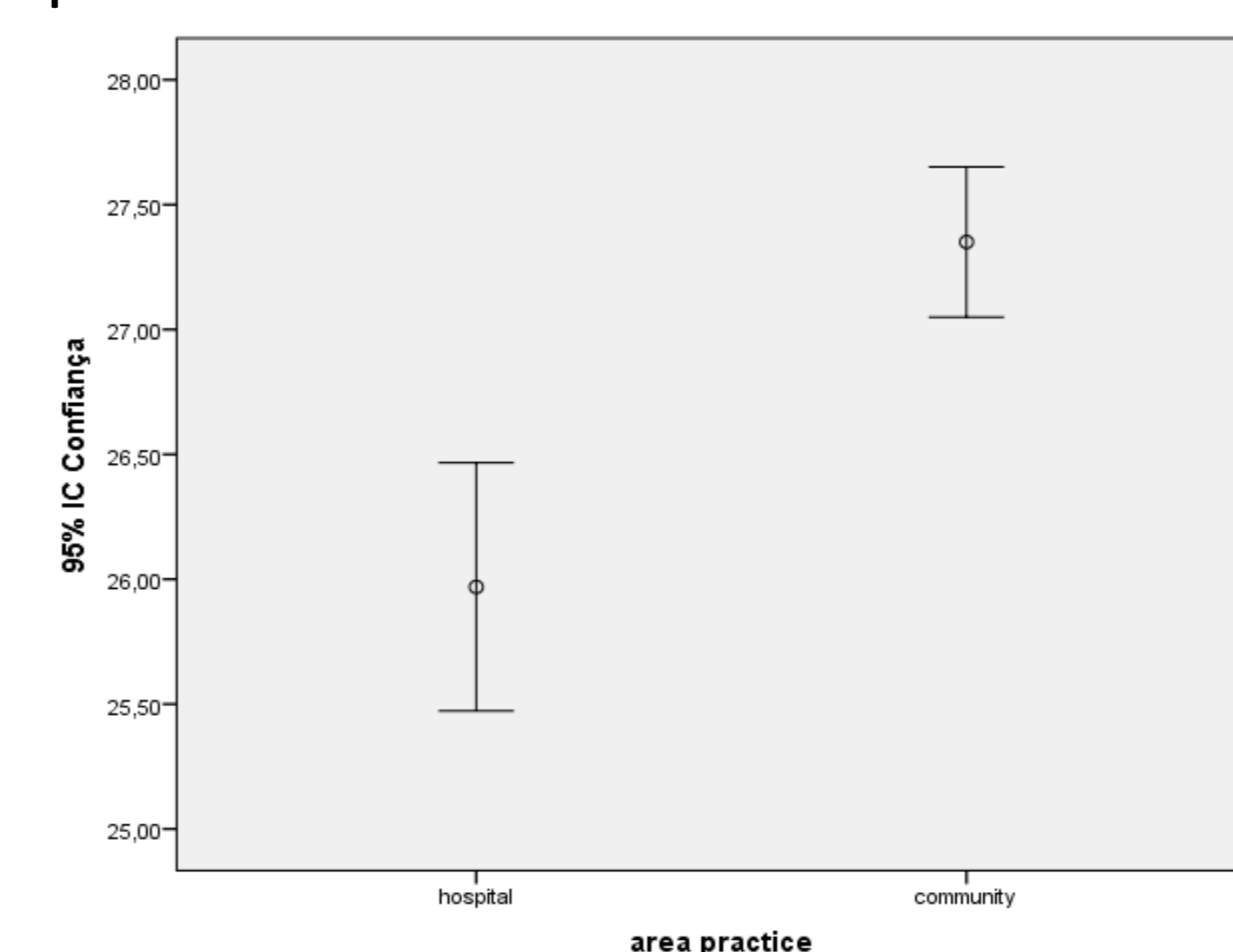


Figure 2: Comparison of mean confidence level when advising patients on oral anticoagulants by area of practice

- ✓ Hospital pharmacists were significantly more confident than community pharmacists ($p < 0,001$).

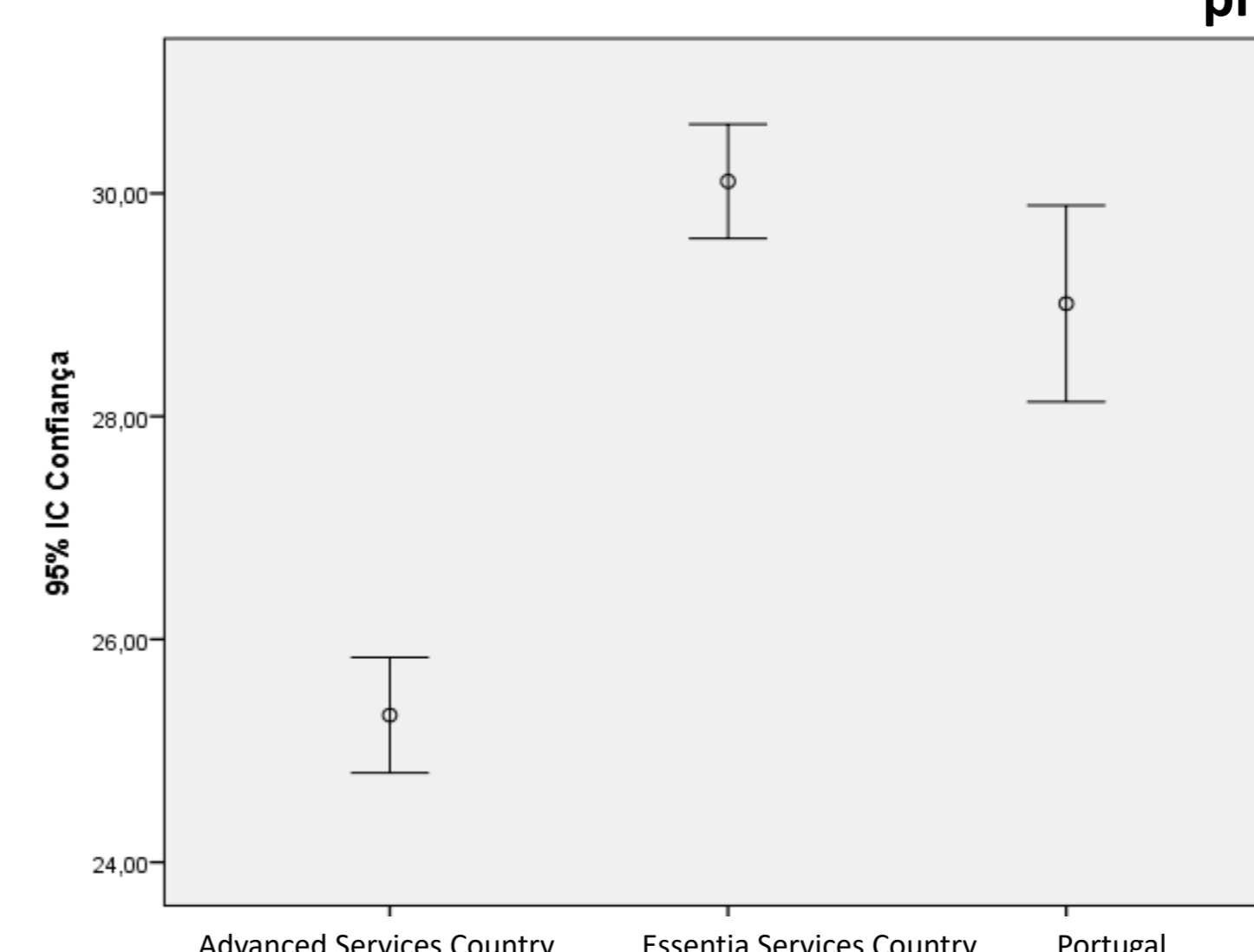


Figure 3: Comparison of mean confidence level when advising patients on oral anticoagulants by country clusters

- ✓ Portuguese pharmacists' confidence levels seems to be more similar to the one presented by pharmacists practicing in countries providing basic services only ($p = 0,403$).

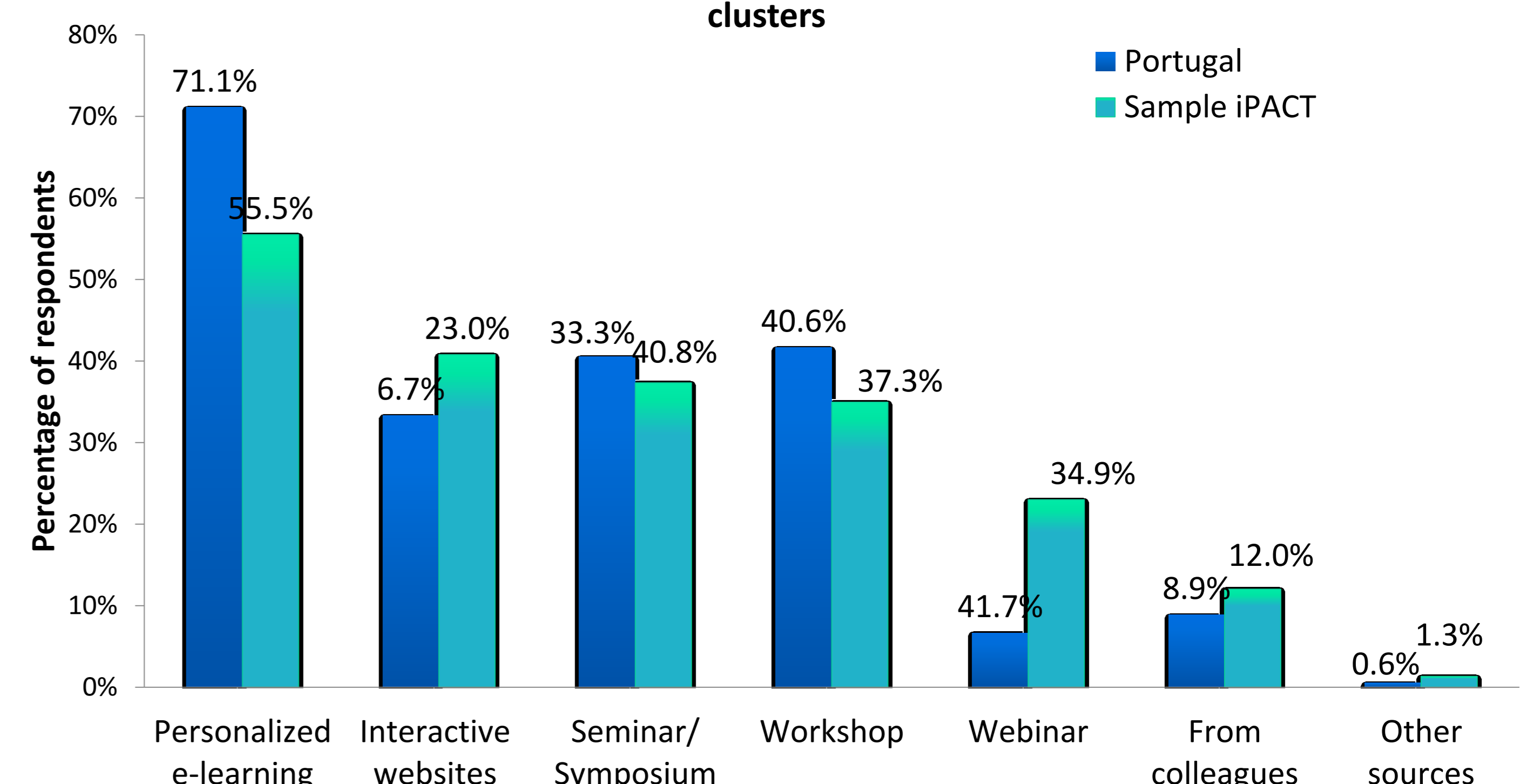


Figure 4: Preferred format of education expressed by Portuguese pharmacists

- ✓ The vast majority expressed a clear preference for e-learning (72,8%) as a method of continuing education in this area, similar to worldwide results.

5. Discussion and conclusion

- ✓ Portuguese pharmacists expressed low confidence levels for advising patients on AC, a finding perhaps expected considering the low offer of specific post-graduate education in this area.
- ✓ Consequently, it is essential to invest on education to better fill the knowledge gaps and indirectly increase medication safety. Ideally, an e-learning course to address the needs highlighted should emerge.
- ✓ Despite the limited sample size, impacting on generalizability of results, the socio-demographic characteristics were similar to the national data (Portuguese Pharmaceutical Society, 2016).

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