

Contributions to the cross-cultural validation of “A survey of pharmacist knowledge, attitudes, utilization and barriers toward artificial intelligence”: translation and back translation

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Introduction: The use of Artificial Intelligence (AI) is rapidly transforming various fields, and pharmacy is no exception. AI is increasingly being used to automate, optimize, and personalize various tasks in pharmacy practice, from drug discovery to dispensing to patients. In Community Pharmacy, in addition to these possibilities, it allows for personalized and focused patient care through the selection of more appropriate and personalized therapies, with a lower probability of prescription errors and drug interactions, as well as monitoring of therapy adherence. Despite these potential benefits, its implementation in the pharmaceutical field, as well as in other areas of healthcare, should be carefully considered, as ethical and regulatory issues may pose obstacles. Likewise, the perspective and experience of each professional, which remain highly personal, especially in patient care, should not be overlooked. Therefore, it is increasingly important to know the knowledge, attitudes, utilization, and barriers concerning AI. Firstly, knowledge, as this concept encompasses the level of awareness and understanding that individuals or organizations have regarding AI technologies. Attitudes, which refers to the perceptions, feelings, and predispositions towards AI. It includes both positive and negative sentiments, such as excitement about AI's potential benefits, concerns about ethical implications, and fears about job displacement. Finally, the barriers or obstacles that hinder the adoption and effective utilization of AI. Barriers can be technical, such as lack of expertise or inadequate infrastructure; financial, such as high costs of implementation; or cultural, such as resistance to change or lack of trust in AI systems.

Objectives: This study aimed to translate and validate a survey instrument designed to explore the attitudes of Community Pharmacy professionals towards the implementation of Artificial Intelligence (AI) in their field. **Methods:** According to the COSMIN methodology, the initial translation of the construct from its original language, English, into European Portuguese was executed by two independent translators possessing comprehensive understanding of the questionnaire concepts. Both translators are bilingual healthcare professionals, who perform functions in a hospital environment and with European Portuguese being their native language. In the subsequent step, the two acquired versions were juxtaposed, leading to the formation of a consensus version endorsed by specialists, considering the new context where the construct will be applied,

without excluding the original version. In cases where there are discrepancies between the two translations, the expert panel discusses the alternatives and decides on the most suitable option. The questionnaire translation process culminates with back-translation, wherein the consensus version obtained is rendered back into the original language, English, by a bilingual translator. The resultant back-translation should closely mirror the original questionnaire, signifying the efficacy of the content translation process. Additionally, reliability testing methods like test-retest reliability and internal consistency checks help verify the stability and consistency of the survey results. To assess consensus among different questionnaire versions, techniques such as inter-rater reliability, the Delphi method, and agreement indices are essential. These processes ensure that the survey items are interpreted consistently across different respondents and that any subjective judgments are reliably measured. **Results:** The results of the translated version questionnaire maintain the intended constructs and adequately capture attitudes toward AI implementation among Community Pharmacy professionals. **Conclusions:** Understanding the attitudes and perceptions of pharmacy professionals towards AI implementation is crucial for informing policy decisions, designing targeted interventions, and facilitating the successful integration of AI technologies into pharmacy practice. It is intended that this questionnaire contributes to the growing body of literature on AI in healthcare and serves as a foundation for further investigations into this evolving field. Future work includes the validation of the PT-EU questionnaire.

Keywords: Artificial intelligence, Community Pharmacy, Translation and validation

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