Psychometric Properties of the Serbian Version of the Attitudes Towards Research Questionnaire

Vedrana PAVLOVIC[a,1], Andrija PAVLOVIC[b], Thomas KLIFOPOULOS[a], Nina RAJOVIC[a], Natasa MILIC[a,c] and Dejana STANISAVLJEVIC[a]

[a]*Institute for Medical Statistics and Informatics, Faculty of Medicine University of Belgrade*
[b]*Department of Humanities, Faculty of Medicine University of Belgrade*
[c]*Department of Internal Medicine, Division of Nephrology and Hypertension, Mayo Clinic, Rochester, MN*

Abstract. Participating in research plays an essential role in improving the practice of healthcare. This cross-sectional study enrolled 100PhD students who attended the course "Informatics for researchers" at Medical Faculty University of Belgrade. The total ATR scale demonstrated excellent reliability (α=0.899) with 0.881 for Positive attitudes to 0.695 for Relevance to life. PhD students in Serbia showed high degree of positive attitudes toward research. Faculty could administer ATR scale to determine students' standpoints towards research, to maximize the impact of the research course and enhance participation in research.

Keywords. Research, PhD medical students, ATR scale

1. Introduction

Rapid improvement in the field of medical technology in the 21st century has made evidence-based medicine a standard for clinical practice. Participating in research plays an essential role in improving the practice of healthcare [1].The PhD medical research study program is a critical component for the development of researchers and research projects in Serbia. The aim of the study was to test the psychometric properties of the Serbian version of the Attitudes Towards Research questionnaire (ATR).

2. Methods

This cross-sectional study enrolled 100 PhD students who attended the course "Informatics for researchers" in the 2022/23 academic year at Medical Faculty University of Belgrade. The course combines the fundamental concepts of research methodology with basic terms of biomedical informatics and statistical methods required to critically evaluate data in cross-disciplinary context. Demographic data

---

[1] Corresponding Author: Vedrana Pavlovic, Institute for Medical Statistics and Informatics, Faculty of Medicine University of Belgrade; E mail:vedrana.pavlovic@med.bg.ac.rs

were assessed for all participants. Attitudes towards research were determined using the ATR questionnaire that was originally created and re-tested [2]. Standard procedures were performed for the translation and adaptation of the ATR questionnaire in Serbian language, to achieve greater comprehension and accurate results from all participants [3]. The ATR scale has 30 items listed on a seven-point Likert scale, with 1 indicating strong disagreement and 7 indicating strong agreement. Negatively worded items were calculated in the opposite direction before any type of analysis was conducted. The ATR scale items were divided into five subscales: Research usefulness for the profession (9 items), Research anxiety (6 items), Positive attitudes towards research (7 items), Relevance to life (4 items), and Research difficulty (2 items). Adding up all of the statements within one factor determined its score. Institutional review board approval was obtained prior to data collection, as well as consent from Elena C. Papanastasiou, author of the questionnaire used in this study. Psychometric properties were analyzed for internal consistency.

3. Results

The median age was 29 years (26-33, 25th-75th percentiles), with 63% being female. The total ATR scale demonstrated excellent reliability (α=0.899).The ATR subscales' reliability ranged from 0.881 for "positive attitudes" to 0.695 for "relevance to life", with internal consistency estimates: Research usefulness alpha=0.859, Research anxiety alpha=0.790, Positive attitudes alpha=0.881, Relevance to life alpha=0.695, Difficulty of research alpha=0.713, Total score alpha=0.899 rated as Excellent. Average ATR total score was 156.3±19.0 (min-max: 114-200) indicating students recognition of the importance of research. Female students presented more positive research dispositions regarding research usefulness subscale score than male students (p=0.043).

4. Conclusions

PhD medical students in Serbia showed a high degree of positive attitudes toward research. The present study revealed ATR as a reliable and a valid tool for identifying PhD students' attitudes towards research in Serbian education. Faculty members could administer ATR scale to PhD students to determine students' standpoints towards research. Adjusting research courses based on these findings would maximize their impact and broaden the interest in scientific research.

References

[1]   Muhandiramge J, Vu T, Wallace MJ, Segelov E. The experiences, attitudes and understanding of research amongst medical students at an Australian medical school. BMC Medical Education. 2021;21(1):267, doi: 10.1186/s12909-021-02713-9.
[2]   Papanastasiou EC. Factor Structure of the Attitudes Toward Research Scale. Stat Educ Res J. 2005;4(1):16–26, doi: 10.52041/serj.v4i1.523.
[3]   Behr D, Shishido K. The SAGE Handbook of Survey Methodology. 1 Oliver's Yard, 55 City Road London EC1Y 1SP: SAGE Publications Ltd; The Translation of Measurement Instruments for Cross-Cultural Surveys; p.269-87. Available from: https://doi.org/10.4135/9781473957893.n19.