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# The decision about retirement: A scale to describe representations and practices of medical doctors and nurses



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#### ABSTRACT

*Objective*: To test the psychometric properties of a newly designed instrument to describe the REpresentations and Practices About REtirement (the PREPARE instrument).

Methods: Participants were nurses and doctors working in the two public hospitals of Porto, aged 55–65 years, in 2011. Among the 367 eligible participants, 231 (65.9%) participated in the study. The PREPARE instrument consists of four sections: 9, 5 and 12, respectively. A principal component analysis was performed to evaluate the scale's dimensionality, followed by a confirmatory factor analysis to test the fit using different indexes (TLI – Tucker–Lewis Index and CFI – Confirmatory fit index).

Results: Principal confirmatory analysis and confirmatory factor analysis identified 3, 1 and 2 factors for section 1, 2 and 3. All confirmatory factor analysis models had a value of CFI and TLI higher than 0.9. Section 1 showed a first factor related with items about the importance of personal competences, a second factor related with items about the importance of relationships with patients, and third factor related with items about the importance of following ethical and directive rules; section 2 showed a general factor about the features you valued most in the other health professional group; and, finally, in section 3, the first factor was related with items about satisfaction with the work environment and the second factor with items about satisfaction with professional career.

Conclusion: The PREPARE instrument has the basic requirements of a valid and reliable measurement of a scale to describe medical doctors and nurses representations and practices about the decision regarding retirement

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#### Introduction

The number of persons needing health care is expected to substantially increase in the coming years considering the estimated demographic trend in Portugal, <sup>1</sup> implying of the need for additional healthcare professionals.

Abbreviations: PREPARE, Professional REpresentations and Practices About REtirement; HSJ, São João Hospital J; HSA, Santo António Hospital; PCA, principal components analysis; CFA, confirmatory factor analysis; TLI, Tucker–Lewis Index; CFI, Confirmatory fit index; RMSEA, route mean square error of approximation; SRMR, standardized root mean square residual; PAV1, healthcare knowledge competences; PAV2, patient care competences; PAV3, professional competences; PAV0, the features you valued most in the other health professional group; WSC1, satisfaction with the work environment; WSC2, satisfaction with professional career; GME, graduate medical education; GP, general practitioner.

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Several studies have shown that the work capacity of health professionals declines with increasing age.<sup>2</sup> Also, many health professionals over 55 years of age are planning to retire early due to a lack of job satisfaction, an excessive workload and increasing bureaucracy.<sup>3</sup> Studies have found approximately one-third to half of health professionals plan to retire before the official retirement age.<sup>4</sup> The intention to retire has been found to predict actual retirement.<sup>5</sup> All these factors combined lead to an increased risk of losing a valuable group of health professional, thereby jeopardizing the health of communities.

In an effort to respond to this prediction of a shortage of experienced health professionals, target interventions could focus on increasing their job satisfaction and decreasing bureaucracy. An study in Netherlands showed that occupational health intervention program prevented early retirement.<sup>6</sup> However, the success of these interventions needs to consider underlying reasons for job satisfaction and also the decision-making process in the representations of retirement of healthcare professionals faced with

the number years of employment. Thus, it is important to know why they extend their employment time or, on the contrary, terminate it through retirement. McMullin said that after qualifying as medical doctor he "became less inclined to sit and listen" however once he retired "things changed again. Suddenly my financial worries were over ...Most of my children had left ...I had time once more" to practice.<sup>7</sup>

In our study we focused on two major areas that can influence the decision of retirement: job satisfaction and the most value competencies by the medical doctors and nurses.

Previously developed questionnaires have focused on job satisfaction in 10 sub-domains and 3 general domains.<sup>8</sup> Autonomy, personal time, relationships with patients, patient care issues, relationships with colleagues, relationships with staff, relationships with community, income, administrative support, and resources and general domains of satisfaction with current job, career and specialty.<sup>8</sup> In our work we centered on two of the general domains of job satisfaction (current job and career) that can influence the decision of retirement.

The Accreditation Council for Graduate Medical Education defined six general competencies of graduate medical education (GME): patient care; medical knowledge; practice-based learning and improvement; professionalism; interpersonal skills and communication; and systems-based practice. In our work we centered in three competencies (patient care, healthcare knowledge and professionalism) that can influence the decision of retirement, the general domains of job satisfaction can measure indirectly interpersonal skills.

This study aims to test the psychometric properties of the new instrument to describe medical doctors and nurses REpresentations and Practices About REtirement (the PREPARE instrument) in a Portuguese sample of health professionals.

Until now there has been a lack of effective screening instruments to measure the medical doctors and nurses representations and practices about retirement that will make easier the offer of early interventions for health professionals.

#### Methods

#### **Participants**

Eligible participants were health professionals, both nurses and doctors, who work in the two main public hospitals in Porto (São João Hospital (HSJ) and Santo António Hospital (HSA)), aged between 55 and 65 years old.

Health professionals self-completed the questionnaires in Portuguese (including items on socio-demographic characteristics, compliance with government action in regard to the general policy of pensions and the PREPARE instrument). The questionnaires were delivered to the head of the department (doctor) and the respective head of the nurses that were responsible for the distribution to the health professionals. It was established that completed questionnaires would be collected in eight days.

#### Data collection

#### PREPARE scale development

A pilot-study was conducted using semi-structured interviews in order to know the perception of health professionals, doctors and nurses aged between 55 and 65 and from the analysis of the interview we created the PREPARE instrument.

From this pilot-study the PREPARE instrument was designed with 3 main areas: dealing with the most important competences the participant identifies in his/her health professional group (9

items), the features valued most in the other health professional group (5 items) and job satisfaction scale for health professionals (12 items).

The "dealing with the most important competences the participant identifies in his/her health professional group" domain had three sub-domains: "healthcare knowledge competences" (PAV1), "patient care competences" (PAV2), and "professionalism competences".

The "job satisfaction" domain had two sub-domains: "satisfaction with the work environment" (WSC1) and "satisfaction with professional career" (WSC2).

All items have a 4-points Likert scale going from not important to very important (section 1 and 2) and from very unsatisfied to very satisfied (section 3).

#### Statistical analysis

The nurses and medical doctors' characteristics were compared using association Chi-square test and the Mann–Whitney test for the categorical and continuous variables, respectively.

A principal components analysis (PCA) was performed to understand the underlying structure of the different scales of the instrument. Principal components analysis was performed using the Oblimin rotation (since we expected theoretical a correlations between domains). Principal components were selected if their eigenvalue was higher than one or considering the scree plot. The items with absolute factor loading of 0.4 or higher were interpreted as having strong correlation with the principal correlation.

This analysis was followed by confirmatory factor analysis (CFA) to test the fit of the factor structure obtained from the PCA. The CFA models was assessed using different indexes: (i) the Tucker–Lewis Index (TLI), (ii) the Comparative fit index (CFI) (Bentler, 1990), (iii) the Route mean square error of approximation (RMSEA), and (iv) the Standardized root mean square residual (SRMR). The CFI and TLI indexes range from 0 to 1, with higher values indicating a better model fit. The RMSEA and SRMR indexes range from 0 to 1, with lower values indicating a better model fit. A good model fit is indicated by a CFI and TLI values of 0.90 or higher and values of RMSEA and SRMR close to 0.06. 10

The internal reliability of the scale was tested using the Cronbach's alpha coefficient.

To test the construct validity of the instrument we estimated the Pearson correlation between all domains of all subscales, and the mean values of each subscale were also compared according to several positions concerning the decision to retire by using the two independent sample *t*-test.

The score of each subscale was calculated by adding all items of that subscale.

The research protocol was approved by the two local ethical committee (Ethical committee of HSJ and HSA) and the study procedures complied with the Helsinki Declaration. All participants signed an informed consent form to participate in the study.

#### Results

Among the 367 health professionals identified as in the eligible age range in 2011, 231 (65.9%) participated in our study. Of the 231 professionals who responded to the survey the majority were physicians (69.3%). The responders of the two health professional groups (nurses versus doctors) had statistically significant differences in terms of sex (76.1% men versus 35.7% women), level of education (0% versus 22.9% completed PhD), parents' education, median age (56 versus 58 years) and contractual relationship. There were no differences with respect to the hospital (62% HSA versus 68.1% HSJ) (Table 1).

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