Radiographer's expectations for role development: a national survey in view of radiography students in final year of graduation

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Purpose

Currently, the radiography finalist students show to be poorly informed about their professional role development, giving it reduced importance. However, increasingly, it is possible to understand the relevance of the ongoing profession development. Thus, we intend, through this study, instill this reality to the Portuguese radiography students.

According to the Vroom theory, the motivation process should be explained in terms of goals and choices of each person and their expectations in achieving these goals, i.e., people feel motivated to perform their duties when they expect to be able to get the desired results. This theory also states that there are 3 basic dimensions (expectation, valence and instrumentality) that act at the level of individual and influencing its performance level (Neves, 2002).

The expectation is characterized as the probability of a certain action lead to a desired result, the valence to the value or weight that an individual assigns to rewards obtained as a result of its performance and, finally, the instrumentality is the perception that obtaining a result is associated with a reward (Neves, 2002).

The practical application of the Vroom theory suggests that when the expectation, the valence and instrumentality are high, the level of motivation will also be high resulting in improved performance and job satisfaction.

The main goal of this research was to identify the expectations of radiography finalist students and determine the importance that they attributed regarding of the professional role development.

Thus, it was our intention to investigate the role development expectations of graduate radiographers with a view to predicting the potential impact of a misalignment of these expectations on quality of the service delivery and staff retention.
Methods and Materials

The current research is a descriptive, non-experimental study, seen that identifies the characteristics of a phenomenon in order to get an overview of a situation or a population and therefore, consisting of a quantitative study.

Sample and Data Collection

Data was acquired in the 6 Portuguese public health schools and the sample is a non-probabilistic by convenience, since it is constituted by individuals that meet the inclusion criteria and due to its presence in the right place (public health schools) and at the precise moment (radiography students in final year of graduation).

The sample size was composed of 84 radiography students in their final year of graduation with ages between 21 and 38 years.

Variables

In this study the independent variables are: gender, age, civil status and public health schools under study. The dependent variables are the expectation, valence and instrumentality.

Instrument

A self-applied "Role development expectation" questionnaire development by Williamson and Mundy (2009) in Cardiff University (UK) was adapted and validated for the Portuguese language by the back-translation method with permission of the authors and assigned to radiography students in final year of graduation in the Portuguese health schools.

The questionnaire items are in the five-point Likert scale format (1 = strongly disagree; 2 = disagree; 3 = no opinion; 4 = agree and 5 = strongly Agree) and have 20 attitude questions in relation to main themes of research (expectation, valence and knowledge).

Of the 20 items constituting this instrument, 7 were designed to measure radiography students' expectations regarding the professional role development (PRD), 7 for the valence and perceived value by students of the PRD, and 6 items to get an overview of the influence of professional rhetoric about the students expectations of the PRD opportunities.

Statistical Analysis
The process of statistical analysis was performed on the Statistical Package for Social Sciences (SPSS) V.20 software, through descriptive statistics, Spearman’s rho correlation and *Kruskal-Wallis* test.
Results

Sociodemographic Characteristics

Through the figure 1, it can be seen that the present study consisted of students of both sexes, with 21.43% (N = 18) were male and 76.47% female, and the average age is 22:31 years.

![Gender chart]

**Fig. 1**: Gender

**References**: Department of Radiology, Health School - University of Algarve

With regard to marital status, it can be seen that most respondents, i.e. 97.6% (N = 82) of the sample has to be single, and only one respondent is married.

Regarding the percentages of respondents in each Public Health School, in a total of 84 respondents, these were mostly of the School of Health Technology of Coimbra and the Health School - University of Algarve with 35.71% (N = 30) and 21.43% (N = 18), respectively.
Regarding other educational institutions, the Health School - Dr. Lopes Dias and the c showed a percentage of 9.52% (N = 8) of respondents, and finally, the School of Health Technology of Porto and Health School - University of Aveiro with 11.90% (N = 10).

In relation to the classification of individual access to the radiology graduate, the results indicate that 2.381% (N = 2) of respondents were access to the graduate with average values between 9.5 to 12.9 (0 to 20 scale), more than half of sample, i.e., 54.76% (N = 46) entered the course with a score between 13 and 15.9 values, and finally, 42.86% (N = 36) enrolled in the graduation with a grade of entry values between 16 and 18.9.

Practically the whole sample, more precisely, 91.7% (N = 77) access to the Radiology graduate thought National Competition for Access to Higher Education, and only 6% of the sample (N = 5) entered through a change course and only 2 students thought special tender.

This is of course related to the number of available positions for each of the access forms.

**Descriptive Statistics of Expectations, Valence and Instrumentality**

Through Table 1, it is possible to visualize the various values of average response for each item of the instrument for data collection, as well as the standard deviation and percentages of responses divided by 5 levels of Likert scale.

The mean responses were higher corresponding to items 3, 8, and 18, which means, for the same items, respondents selected options mostly of agreement with the statements in question. Also highlighted are the lowest grades, associated with items number: 2, 5, and 20, which have been chosen mainly reveal options disagreement with them.
Table 1: Average, Standard Deviation and Percentage of responses for each of the 20 items of the instrument.

References: Department of Radiology, Health School - University of Algarve

The radiography students stated an expectation for role development opportunities with 66.7% (figure 2) indicating that these expectations would be realized within 2 (25%) and 5 (44%) years of graduation (figures 3 and 4).
Fig. 2: Item 1- There is an expectation that radiographers will actively seek to develop-extend their roles.

References: Department of Radiology, Health School - University of Algarve
Fig. 3: Item 4: I expect to be in the same role 2 years after graduation

References: Department of Radiology, Health School - University of Algarve
Regarding the question "11- Role extension interest me" there is a high agreement with the views of respondents, as most evidenced agree with that statement, while 34.52% (N = 29) revealed agree and almost half revealed strongly agree with 45.24% (N = 38) of responses (see table 1).

In relation to the item "13- I am prepared to move departments in order to develop my role" it appears that the majority of respondents agree with the possibility of change department as a way to expand their roles. This fact is proven by the percentages that indicate that 66.67% (N = 56) of the sample agree and 21.43% (N = 18) strongly agrees with the aforementioned item (see table 1).

Regarding the question "16- I will NOT be happy in my work if my expectations for role development are not met" (table 1), there is no doubt that the sample agrees since 55.95% chose the option "I agree" and 32.14% (N = 27) selected the "Strongly Agree". Instead, only 7.143% (N = 6) of respondents disagree with the statement presented.
Concerning to the item "20- The profession of radiography has a high public profile" (table 1) the results indicate that almost half of the sample (45.24%) disagree with the fact that the Radiographer profession have a high social recognition. Instead, the present reliability values were low and only 14.29% (N = 12) sample agrees with it and 1.190% (N = 1) strongly agrees.

Spearman's rho correlations

A significant and strong positive correlation \( (r=0.791, p=0.000) \) between job satisfaction and expectation for role development in 5 year after graduation was seen (table 2). Thought the same table, we can see a significant and moderate positive correlation \( (r=0.536, p=0.000) \) between job satisfaction and expectation for role development in 2 year after graduation was seen too. All other correlations were moderate or weak or nonexistent.

<table>
<thead>
<tr>
<th></th>
<th>6- I would be happy to be doing the same job in 2 years' time</th>
<th>7- I would be happy to be doing the same job in 5 years' time</th>
</tr>
</thead>
<tbody>
<tr>
<td>5- I expect to be in the same role 5 years after graduation.</td>
<td>Correlation Coefficient</td>
<td>.536**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>84</td>
</tr>
<tr>
<td>Correlation is significant at the 0.01 level (2-tailed).-</td>
<td>Correlation Coefficient</td>
<td>.791**</td>
</tr>
<tr>
<td></td>
<td>Sig. (2-tailed)</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>N</td>
<td>84</td>
</tr>
</tbody>
</table>

Table 2: Correlations and significance levels between items 5, 6 and 7

References: Department of Radiology, Health School - University of Algarve

Kruskal-Wallis test

There were no significant differences between the health schools for the expectation, valence and Instrumentality (table 3 and 4).

<table>
<thead>
<tr>
<th></th>
<th>Expectation</th>
<th>Valence</th>
<th>Instrumentality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chi-Square</td>
<td>10,293</td>
<td>5,156</td>
<td>9,855</td>
</tr>
<tr>
<td>df</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.067</td>
<td>.397</td>
<td>.079</td>
</tr>
</tbody>
</table>

a. Kruskal Wallis Test
b. Grouping Variable: Public Health Schools

Table 3: Qui-Square test

References: Department of Radiology, Health School - University of Algarve
Table 4: Statistical Kruskal-Wallis test to compare the mean rank responses between dimensions: expectations, instrumentality and valence

References: Department of Radiology, Health School - University of Algarve

Main differences between UK and Portuguese Study

The data presented in Table 5 reflect the major differences regarding the radiographer profession between Portugal and the United Kingdom, regarding the recognition, importance attributed to their performance in terms of health care, their autonomy and many more factors, which have earned the amount due in Portugal.
<table>
<thead>
<tr>
<th>Items</th>
<th>UK (n=37)</th>
<th>Portugal (n=84)</th>
</tr>
</thead>
<tbody>
<tr>
<td>I expect to be in the same role 2 years after graduation</td>
<td>93,7% disagree</td>
<td>25% disagree</td>
</tr>
<tr>
<td>I expect to be in the same role 5 years after graduation</td>
<td>75,7% disagree</td>
<td>44,04% disagree</td>
</tr>
<tr>
<td>Radiographers should be forced into extended roles.</td>
<td>51,3% disagree</td>
<td>28,57% disagree</td>
</tr>
<tr>
<td>Role extension interest me</td>
<td>0% disagrees</td>
<td>2 students disagree</td>
</tr>
</tbody>
</table>

**Table 5**: Main differences between UK and Portuguese Study

**References**: Department of Radiology, Health School - University of Algarve
Conclusion

There is an expectation and value assigned for role development opportunities. Expectation is seen to be intrinsically linked with job satisfaction suggesting that misalignment of this would have a potentially negative impact on motivation and retention of the future radiography workforce. However, there is a lack of social recognition of the radiographer, suggesting the need to promote measures to increase the profession recognition.
References


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Fig. 5

References: Department of Radiology, Health School - University of Algarve