

Clustering the Engagement of Brazilian Nurses in Political Advocacy

Aline Figueira (✉ alinebelletti@gmail.com)

Federal University Foundation of Rio Grande

Edison Luiz Barlem

Federal University Foundation of Rio Grande

Aline Brum

Federal University Foundation of Rio Grande

Larissa Mattos

Federal University Foundation of Rio Grande

Jamila Barlem

Federal University Foundation of Rio Grande

Aline Toescher

Federal University Foundation of Rio Grande

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Abstract

Background: The political advocacy highlights that the union among nurses, other health professionals, users and managers is able to promote improvements to the health of people and communities.

Objective: To analyze the level of nurses' engagement in political advocacy by performing cluster analysis.

Method: The study was attended by 184 nurses working in primary, secondary and tertiary care in a city in Brazil, through the application of the Policy Advocacy Engagement Scale. The data analysis consisted of descriptive statistics, cluster analysis, analysis of variance and chi².

Ethical considerations: The approval for the study was received by the local Ethics Committee.

Result: The clustering performed in this study pointed out the factor defense of care for families and communities with higher average, indicating that political defense is effective in organizational environments and even that professional qualification provides greater engagement in political advocacy.

Conclusion: The results reveal that nurses play an active role in political advocacy, seeking to promote positive changes in health, especially those working in tertiary care, the nurse group that obtained the highest means in this study.

Background

Political advocacy is characterized by interventions implemented by health workers in order to change ineffective policies in institutions, communities and government.^{1–2} The difference between health advocacy and political advocacy lies in the fact that the first advocates on the behalf of specific individuals, while the latter seek global changes at the government or management level to improve the wellbeing of a considerable number of individuals.³

Political activity refers to being part of groups, associations and entities and participating in activities aimed at influencing health policies to improve health care.⁴ In this approach, human behavior is guided by their behavioral beliefs and, as a result, the sum of efforts and collective perceptions strengthens the engagement in political advocacy, besides making health professionals more prone to political advocacy if they perceive it as effective to improve the population's health.⁵

Committing to the defense of health-related rights and seeking to transform dysfunctional policies that increase the well-being of users is a moral duty of those who provide care and are committed to their work in the field of health.¹ As members of the multiprofessional health team, nurses should perceive the importance of defending users in situations of avoidable harm, a fact that encourages them to leave the comfort zone and enter the political sphere, with the objective that their actions impact public policies, while also providing real examples to contribute to the defense of users' rights and interests.⁶

Several factors stimulate the capacity of nurses to be politically active and influence the development of health policies, in particular, professionals need to plan collective activities that culminate in the strengthening of groups, producing and sharing relevant knowledge on political issues affecting health care and their own profession.⁷ The political influence of nurses becomes apparent from their ability to impact health-related issues through their competencies and political knowledge, exercise of power, advocacy, efficient communication, and collaboration with the remaining health team members.⁸

Accordingly, the engagement of nurses in political advocacy is essential to implementing change with an integral, committed, ethical, political and socially oriented vision for the human being and the society at large.⁹ Their actions have the ability to improve the quality of care, as well as benefiting a large number of people, from the identification of health determinants and dimensions that contribute to political advocacy.³

Studies make reference to the engagement in political advocacy at a global level, a fact not evidenced in South America, especially in Brazil.^{10,11} Thus, the present study was justified due to the presence of gaps in relation to scientific production on political advocacy in Brazil, especially on the engagement of nurses in political advocacy.^{1,9} In this sense, the objective of this study was *to analyze the level of engagement of nursing professionals in political advocacy, based on the clustering of data obtained.*

Method

The city where the study was conducted has approximately 210,000 inhabitants and is an oceanic transport hub, with a port that handles most of the Brazilian imports and exports. The city has also one federal and one private university, both with a large variety of programs, especially in the health field, attracting students from various regions in the state and Brazil.

With regard to health, in accordance with the Brazilian Unified Health System, the Primary Care in the city has 24 units with Family Health Strategy (FHS), five Basic Health Units (BHU), two Mixed Units and two 24 hour- services.¹² In terms of secondary care services, the city has one Emergency Unit (UPA), one mobile emergency service (SAMU), and four Psychosocial Health Centers (CAPS).

In terms of tertiary care, the city has two general hospitals, one of which serves exclusively by SUS, being a federal public hospital, regional reference of medium complexity, certified as Teaching Hospital by the Ministry of Health. The second institution is a philanthropic hospital, also a teaching hospital, that provides care to SUS patients and also patients with health care plans/insurance, and private patients. It is an integrated hospital complex including four facilities: General Hospital; Psychiatric Hospital; Cardiology Hospital; and Cancer Hospital.¹²

The data collection happened through the application of the Policy Advocacy Scale instrument in nurses working in these locations from the delivery of the questionnaires and the informed consent forms, in the period from November 2017 to March 2018. The quality control and minimum number of participants was followed by a mathematical formula to measure the minimum sample size, which consisted of a

minimum of 164 participants¹³, with a safety margin of 10% due to the three different contexts and possible losses in the analysis. Thus, at the end the data collection, a number of 184 nurses was obtained, which met the criteria established by the minimum sample size.

The Statistical Package for Social Sciences (SPSS) version 25.0 was used in data analysis. Differences were compared and assessed and the same database was used to make corrections when necessary. Data analysis included descriptive statistics followed by cluster analysis. Analysis of variance and the Chi-squared test used to compare between clusters for numerical and categorical variables, respectively.

Cluster analysis is a multivariate classification technique intended to assign elements of a sample into groups so that elements belonging to the same group are homogeneous in regard to the characteristics under analysis and elements from different groups are heterogeneous in regard to the same characteristics.^{13,14}

Cluster analysis is about grouping a dataset so that data in a particular group (cluster) is more similar, in terms of specifying variables, than data in other clusters. Cluster analysis approximates similar groups and distances them according to their respective differences. It allows characterizing and classifying the profile of a given population based on predictor variables selected by the method. Two-step cluster analysis is the method used in this study. It consists of a scalable algorithm designed to analyze large databases. It initially pre-clusters data, using the sequential clustering approach that generates sub-clusters, which are reorganized in the second step, where clusters are finally generated.^{15,16}

ANOVA is a method used to test the equality of three or more population means based on analysis of sample variances. Because the sample data were assigned into groups according to a characteristic (a factor)¹⁷, ANOVA was used to compare numerical variables among clusters 1, 2, 3 and 4.

The Chi-squared test or cross-tabulation was used to compare categorical variables. The Chi-squared test is a test of the hypothesis designed to find a dispersion value for two nominal categorical variables and assess association between qualitative variables.¹⁸

Results

Cluster analysis

The study sample was composed of 184 nurses, 72 (39.1%) of whom worked in primary care, 67 (36.4%) worked with secondary care, and 45 (24.5%) worked with tertiary care. Most nurses were women, 160 (87.0%), while 24 (13.0%) were men. The sample was organized into four clusters, as presented in Figure 1.

When analyzing Figure 1, it is possible to observe that the two largest clusters generated represent similar proportions of the sample, with clusters 1 and 4 consisting of 60 (32.6%) and 65 (35.3%) nurses, respectively. Cluster 1 is characterized by nurses working in secondary care, with an estimated average of

59 months of professional experience; while cluster 4 is composed of nurses working in primary care with an average of 111 months of professional activity.

Clusters 2 and 3 are both composed of a smaller number of nurses, however, representing different situations. Cluster 2 is composed of 14 (100%) nurse managers, seven (50%) of whom work in primary care, with 156 months of professional experience, on average, which is the highest mean in terms of professional experience.

Cluster 3 is composed of 45 (24.5%) nurses who provide tertiary care (100%), with 140 months of professional experience, on average.

The results of the variance analysis provide some potential explanation for the different associations between factors linked to the engagement of nurses in political advocacy, which are presented in Table 1, while the comparison among the categorical variables among the clusters is shown in Table 2.

Table 1 – Behavior of the 4 clusters according to the variables selected for comparison

4.7	Participants	60 ± 32.6	14 ± 7.6	45 ± 24.5	65 ± 35.3
		a	b	c	d
4.8	Average age	34 ± 8.14	41 ± 9.1	40 ± 7.4	36 ± 8.9
		a	b	c	a, b, c
4.9	Experience	59 ± 61.3	157 ± 111.6	140 ± 89.5	111 ± 100.3
		a	a, b, d	b, c	b, d
4.4			4.5	4.6	
4.10	Mean of political advocacy among clusters	3.5 ± 0.73	3.51 ± 0.59	4.04 ± 0.77	3.46 ± 0.54
		a	a, b, c	b	c

The results are expressed in M (mean ± standard deviation). Data were analyzed using ANOVA and groups were compared using the Post Hoc Tukey test. Differences were considered statistically significant when $p < 0.05$. Groups with the same letters in the same lines do not differ from each other.

The comparisons between the clusters' categorical variables are shown in

Table 2 – Comparison of categorical variables among different clusters

	Total of valid answers	Cluster 1	Cluster 2	Cluster 3	Cluster 4	<i>p</i>
<i>Education</i>						
Bachelor's degree	74	25 (41.7)	5 (35.7)	10 (22.2)	34 (52.3)	0.000
Specialization	28	3 (5.0)	2 (14.3)	19 (42.2)	4 (6.2)	0.000
Residency	17	1 (1.7)	3 (21.4)	4 (8.9)	9 (13.8)	0.000
Master's degree	16	1 (1.7)	2 (14.3)	7 (15.6)	6 (9.2)	0.000
Doctoral degree	49	30 (50))	2 (14.3)	5 (11.1)	12 (18.5)	0.000

<i>Level of care</i>							
Primary care		72	–	7 (50)	–	65 (100)	0.000
Secondary care		67	60 (100)	7 (50)	–	–	0.000
Tertiary care		5	–	–	45 (100)	–	0.000
<i>Field</i>							
Care delivery		170	60 (100)	–	45 (100)	65 (100)	0.000
Administrative		14	–	14 (100)	–	–	0.000
<i>Structural characterization of the environment</i>							
Review	Yes	108	39 (65)		25 (55.6)	35 (60.3)	0.720
Board	No	76	21 (35)		20 (44.4)	30 (39.7)	
Continuing	Yes	146	53 (88.3)	12 (92.3)	33 (73.3)	48 (78.7)	0.158
Education	No	33	7 (11.7)	1 (7.7)	12 (26.7)	13 (21.3)	
Staff meeting	Yes	98		12 (85.7)	38 (84.4)	48 (76.2)	0.633
	No	24		2 (14.3)	7 (15.6)	15 (23.8)	
Institutional	Yes	150	46 (76.7)	13 (92.9)	42 (93.3)	49 (77.8)	0.070
dialogue	No	32	14 (23.3)	1 (7.1)	3 (6.7)	14 (22.2)	
Management	Yes	170	56 (93.3)	14 (100)	44 (97.8)	56 (88.9)	0.215
open dialogue	No	12	4 (6.7)	–	1 (2.2)	7 (11.1)	
Multiprofessional staff	Yes	159	53 (88.3)	11 (78.6)	42(93.3)	53(84.1)	0.379
open dialogue	No	23	7 (11.7)	3 (21.4)	3 (6.7)	10 (15.9)	
Nursing staff	Yes	174	57 (95)	14 (100)	43 (95.6)	60 (93.8)	0.804

open Dialogue	No	9	3 (5)	–	2 (4.4)	4 (6.3)
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Data are expressed in N-total or N (%), according to the cluster. Differences were considered statistically significant when $p < 0.05$ and analyzed using the Chi-squared test.²

Statistically significant differences ($p < 0.05$) were found between the clusters in all the variables selected, suggesting that the mean for each variable was different in each cluster, validating the clusters found. The results concerning the comparison of means show that the mean level of engagement in political advocacy is significantly different ($p < 0.05$) between clusters 1(3.50), 3(4.04) and 4(3.46). Cluster 3 presented a mean that is higher than those presented by clusters 1 and 4, while cluster 2 presents no significant differences when compared to the remaining groups.

Table 3 presents the general means of each factor and the respective means in each cluster.

Table 3 – Comparison of the mean of factors according to each cluster.

	Cluster	N	Mean	Factor total mean	P value
Factor 1	1 secondary	60 (32.6%)	2.88		
(patient advocacy)	care	14 (7.6%)	2.68	2.98	0.000
	2 managers/	45 (24.5%)	3.60		
	primary care	65 (35.3%)	2.71		
	3 tertiary care				
	4 primary care				
Factor 2	1	60	3.51		
(quality care advocacy)	2	14	3.94	3.68	0.009
	3	45	4.04		
	4	65	3.54		
Factor 3	1	60	3.81		
(advocacy for culturally	2	14	3.80	3.94	0.13
competent care)	3	45	4.35		
	4	65	3.80		
Factor 4	1	60	3.07		
(advocacy for preventive	2	14	3.25	3.46	0.000
care)	3	45	4.28		
	4	65	3.30		
Factor 5	1	60	4.02		
(advocacy for accessible	2	14	3.64	3.96	0.328
care)	3	45	4.16		
	4	65	3.85		
Factor 6	1	60	3.22		
(advocacy for mental	2	14	3.32	3.27	0.036
health care)	3	45	3.70		
	4	65	3.01		
Factor 7	1	60	3.99		
(advocacy for family and	2	14	3.94	4.03	0.581

community care)	3	45	4.17
	4	65	3.98

ANOVA was used to compare the means of the sample population and verify whether these means present significant differences. ANOVA compares the mean of more than two samples and determines if at least one differs significantly from the remaining samples.¹⁷

In factors 3, 5 and 7, the average of responses does not present significant statistical difference ($p > 0.05$). In factors 1, 2, 4 and 6, it is possible to observe a significant difference among the means ($p < 0.05$), which present lower means, which points on the part of these factors a lower propensity to political engagement. At the same time, the means of factors 7, 5 and 3 reflect higher values, indicating a greater propensity for them to engage in political advocacy. Furthermore, among all factors, factor 7 showed a higher propensity to engage in political advocacy than the other factors, being the highest average among all.

Cluster 3 obtained the highest general mean and the highest scores were obtained by factors 1 (3.60), 2 (4.04), 4 (4.28) and 6 (3.70). The statements that made clusters obtain their respective means are presented in Table 4:

Discussion

Different studies highlight the engagement of nurses as a way to expand political advocacy regarding health issues^{5,18,19} and also highlight institutional support, as well as

the support provided by other members of the multiprofessional and nursing teams, as enhancers of this engagement, by providing greater commitment to care.³ It is noteworthy that nurses with less training time are often more likely to engage in political advocacy, which reinforces the need to build effectively and coherently the capacity to act in political advocacy as an essential component in the practice of nurses from graduation onwards, happening especially at higher levels of training such as master's and doctorate.¹⁹

Regarding the clusters that emerged in this study, almost all nurses in cluster 3 work with secondary care, are younger and are less experienced than those in the remaining groups. This group, however, concentrates the highest number of nurses with a doctoral degree. In addition, there is a great predominance of female doctor nurses among the participants of this group. The study shows that the involvement of nurses in political advocacy is more recognized according to the level of education of each nurse, but it is not very relevant with respect to their age, according to the clusters analyzed.

In order to reinforce the findings of the research, a study indicates that nurses with master's degrees or higher levels of education are politically more active than those with lower levels of training,¹⁹ in addition to recognizing that professional nursing organizations give greater freedom to more qualified

professionals to influence the construction of institutional policies.^{4,19} This translates into the need for engagement of nurses since the beginning of training in health policies, with potential to influence health and public policies.⁸ Building effective and coherent ways of acting in political advocacy is considered an essential component of nursing education, both at the undergraduate, master's and doctoral levels.¹⁹

Thus, involvement in political processes to promote sound and effective policies in health care practices is a direct extension of how the nurse can seek to defend the interests of health system users. Political advocacy in nursing can benefit users, communities and professionals from nurses' leadership skills through active involvement.²⁰

Cluster 2 has the highest average age among clusters and the longest professional career, divided between primary and secondary care nurses, with a higher number of graduates than the other levels of training. Nurses managers have a higher level of commitment to political advocacy, largely because they work in the administration of health services, which favors a broad and global view of health needs, without being limited to one or another user specifically, as often happens among nurses who are directly involved in providing health care.²¹

Work in the administration of health services also expands the ability of nurses in leadership positions to influence their staff in order to achieve objectives that are shared by the group to meet the health needs of the population.²¹ Additionally, nurse managers who are in key positions should be a model, qualifying and motivating nurses to become involved with health policies, by establishing healthy and ethical work environments, organizing actions focused on health policies, providing training and continuing education, in order to facilitate the understanding of workers with regard to their skills in the development of health policies and strategies influencing political decision-making. With this in mind, the International Council of Nurses proposes that nurses should significantly contribute to the development of efficacious health policies based on their knowledge and experience.⁸

It is worth noting that, through leadership, nurses become able to reconcile organizational objectives with the objectives of the nursing staff in order to improve professional practice and the quality of care delivery, which is an element that facilitates the work of health teams.²² Another important facilitator in cluster 2 is related to these

individuals' professional experience, the longest duration experience among the four clusters, which consequently means greater experience with political performance, knowledge of health systems and research, and involvement in political issues, possession of leadership skills, qualification, having structural support and greater knowledge, availability of resources, and a positive image of nursing, as reinforced by an international study.⁸

There are other characteristics differing among clusters. All participants in cluster 3 are nurses who provide tertiary care and presented the highest mean of all the clusters, and the second highest mean concerning professional experience, reinforcing these professionals as highly likely to engage in political

advocacy, especially in factors related to the advocacy of patients' rights, quality of care, preventive care, and mental health care, which obtained the highest means in this cluster.

One Brazilian study highlights the constant transformations and advancements in health practices, especially in the hospital sphere, which requires workers, especially nurses, to have specialized knowledge of management. Thus, universities are supposed to provide workers with theoretical and practical knowledge to support human aspects in the quality of nursing care.²²

Nurses perform tasks that include activities from directly providing care to patients, to management tasks, so they have greater autonomy to act and impact the organizations' decision-making.²³ Thus, nurse act as the integrating link of the team and, therefore, are able to work well with other professionals and plan actions that permeate care, as recommended by the legal material governing professional practice. Additionally, by performing teamwork, the nurse professional enables the group to be trained to better deal with conflicts and challenges, as well as managing activities in an environment of trust and satisfaction.²²

Cluster 4 was composed of nurse practitioners, who differ in the fact that they work in primary care, a health setting known by the vast number of opportunities to establish positive exchanges between nurses and patients, family and the community. That is, there is the unique opportunity to promote health during interactions.^{23,24} A given study indicated that changes in community health demands and the need for changes in health services lead to exponential growth in primary health care nursing both in Australia and in other countries²⁵, besides the fact that quality of care provides a considerable increase in interest in identifying the factors that can effectively hinder concrete health action.^{25–26}

Another study that explored the contribution of nurses in advocacy and health policies noted that nursing leaders should provide users with the information necessary for their treatment, encourage their empowerment, respect their beliefs and values and, above all, be a voice to defend them when necessary.²⁷

Therefore, nurses should play an essential role in the public aspect of political decision-making and encourage staff members to become involved in political advocacy.⁸ Developing interpersonal influence helps nurses provide health care and promotes greater proximity to the care provided to the population as a resource for political advocacy.²⁰

Thus, as members of health teams, nurses need to be qualified to deal with diplomatic, humanitarian and political issues. Thus, academic curricula need to address aspects related to national and international policies concerning health diplomacy, in addition to training and qualifying these workers to be political agents in the context of world health.²⁸

Limitations

The limitation of this research is the fact that it was only carried out with nurses. It is believed that these workers have a broad perspective on health care directed to the wellbeing of people. Nonetheless, addressing other health workers will enable greater understanding of how these workers perceive political advocacy in their respective professional fields.

Advancements To Knowledge

Future studies can provide better understanding of the engagement of health workers in political advocacy, especially of nurses. It is also necessary to understand the factors that lead these workers to become committed to advocacy to broaden the range of possibilities.

Conclusion

This study presents a cluster analysis of data concerning the engagement of Brazilian nurses in political advocacy. The results show that nurses have appropriated their technical and scientific knowledge in the planning of the actions, connecting the remaining health workers and patients, mediating the supply of health care and the demands faced at work.

Cluster 3, which includes nurses working in tertiary care, stood out as it obtained the highest mean in the factors related to the advocacy of patient rights, quality care, preventive care and mental health care. Nurses with doctoral degrees demonstrate a greater propensity to engage in political advocacy than other nurses.

Abbreviations

FHS

Family Health Strategy (FHS); BHU:Basic Health Units; UPA:Emergency Unit; SAMU:mobile emergency service; CAPS:Psychosocial Health Centers; SPSS:Statistical Package for Social Sciences; FURG:Federal University Foundation of Rio Grande;

Declarations

Conflict of interests

The authors declare that there is no conflict of interest whatsoever attached to the research, authorship and/or publication of this article.

Ethics approval and consent to participate

In addition to complying with standards regulating research addressing human subjects (466/2012; CAAE 56665016.5.0000.5324), this study was approved by the Institutional Review Board Health

Research Ethics Committee

– FURG (Federal University Foundation of Rio Grande, Brazil) - (opinion report No. 67/2016).

All ethical precepts were respected and the consent form was provided to all participants. informed consent statement.

Guidelines statement and informed consent statement

All participants agreed to participate in the research.

Availability of data and materials

The data set generated during the study will not be shared due to participants' anonymity and confidentiality and to respect for the participants' sensitive contribution. Even though the data are with the corresponding author; the data generated, used and analysed during the current study but are available from the corresponding author on reasonable request. Consent for publication.

Consent for publication

Not Applicable.

Competing interests

The authors declare that they have no competing interests.

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Authors' contributions

Author 1 - ABF analyzed and interpreted the document and was a major contributor in writing the manuscript; Author 2 - ELDB analyzed and interpreted the document and was a major contributor in writing the manuscript; Author 3 - ANB analyzed and interpreted the document and was a major contributor in writing the manuscript; Author 4 - LMM design of the work; Author 5 - JGTB contrib contributions to the conception, and design of the work; Author 6 - AMRT contributions to the conception. All authors read and approved the final manuscript.

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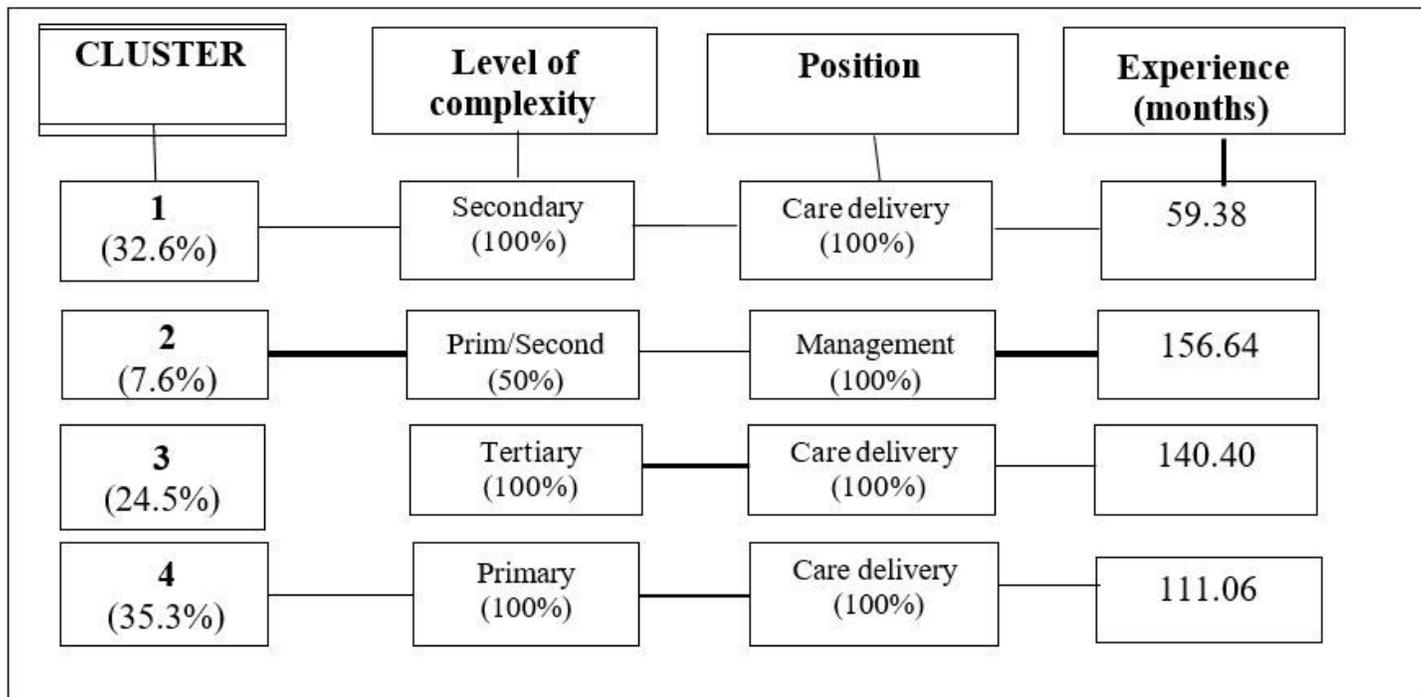
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Tables

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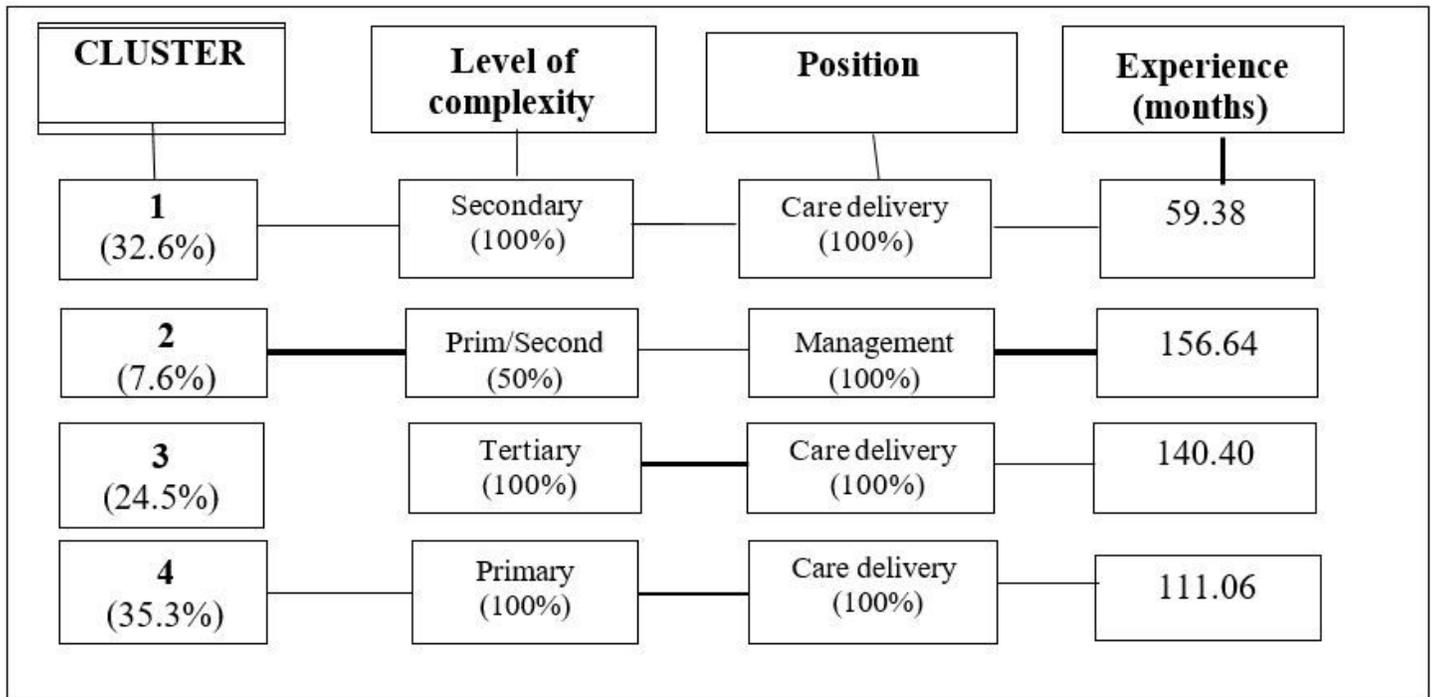
Figures



Source: research data

Figure 1

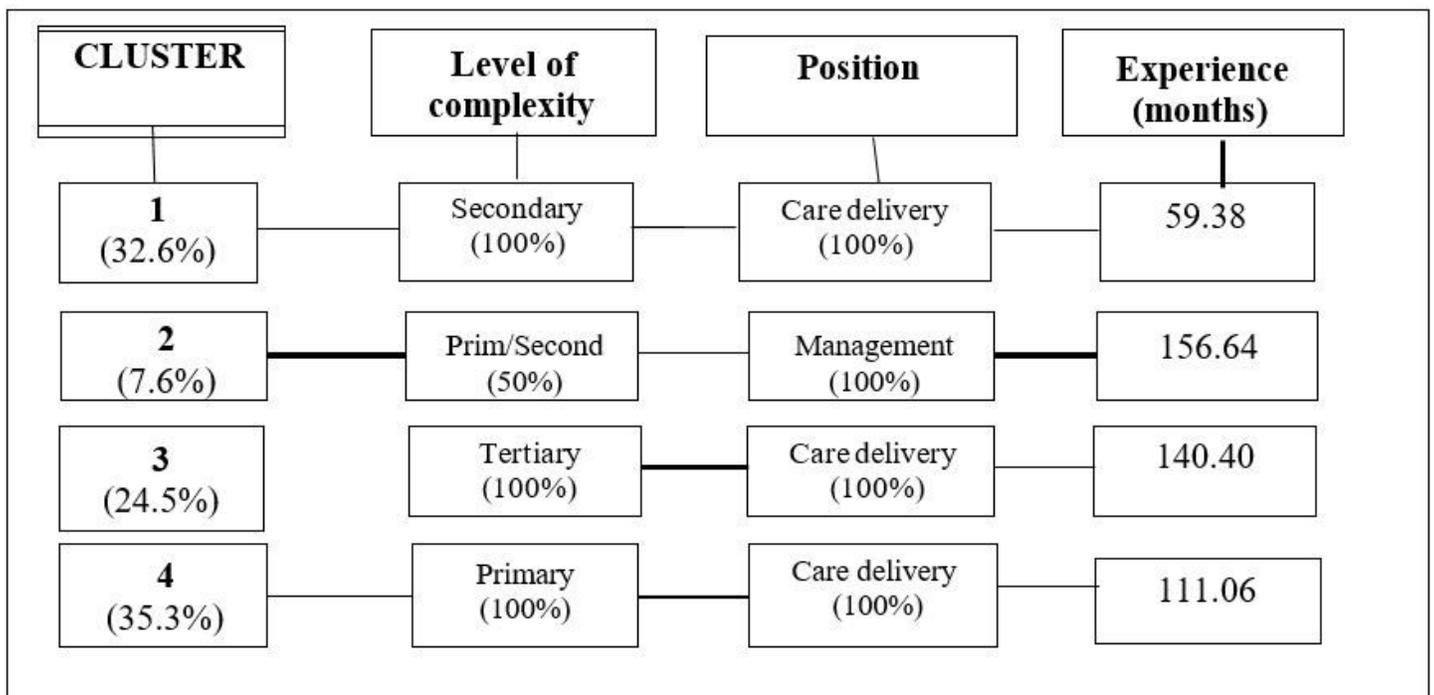
Distribution of the sample according to cluster analysis, defined by likelihood ratio, concerning the engagement of nurses in political advocacy.



Source: research data

Figure 1

Distribution of the sample according to cluster analysis, defined by likelihood ratio, concerning the engagement of nurses in political advocacy.



Source: research data

Figure 1

Distribution of the sample according to cluster analysis, defined by likelihood ratio, concerning the engagement of nurses in political advocacy.

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