

ORIGINAL PAPER  
ΕΡΕΥΝΗΤΙΚΗ ΕΡΓΑΣΙΑ

## Role conflict and ambiguity among physicians and nurses in the public health care sector in Crete

**OBJECTIVE** To identify role conflict and role ambiguity in the public health care facilities in Crete, as perceived by physicians and nurses. **METHOD** A descriptive comparative study was conducted in the 5 public general hospitals, one university hospital and 7 of the 14 health centers in Crete, randomly selected. A sample of 75 physicians and 81 nurses completed anonymously the Greek version of the Role Ambiguity and Role Conflict Scales. Their responses were analyzed using multivariate methods. **RESULTS** The total score was  $3.20 \pm 1.30$  for role ambiguity and  $4.75 \pm 1.19$  for role conflict. Women presented a higher mean ambiguity score ( $r=0.203$ ,  $p<0.05$ ), as did participants in the younger age group ( $p<0.001$ ). Nurses presented a higher mean ambiguity score ( $3.48 \pm 0.14$ ) and physicians a higher mean conflict score ( $4.91 \pm 0.16$ ). Analysis by health care level reveals statistically significant difference, with staff in the primary care health centers recording a higher mean ambiguity score ( $3.29$  vs  $2.14$ ,  $p<0.001$ ). A statistically significant difference was also found between physicians and nurses ( $p<0.001$ ), with nurses presenting a higher mean ambiguity score than physicians ( $3.48$  vs  $2.90$ ,  $p=0.020$ ). **CONCLUSIONS** Role ambiguity and role conflict in doctors and nurses can lead to lowered health service performance and efficiency. Awareness of the degree of role conflict and role ambiguity among health personnel has implications for future research and efficient management. To reduce role ambiguity and conflict, managers of health care facilities should introduce interdisciplinary projects aimed at improving job satisfaction and providing quality patient-centered care.

Over the past 20 years, management thinking, objectives and practices in health care facilities have challenged the traditional professional values of care and cure, while attempting to achieve cost reduction and organizational efficiency.<sup>1</sup> The efficiency of each professional group, and consequently of an organization, depends, among other important elements, on the combination of professional roles that the members of an organization adopt, sustain and develop.<sup>2</sup> Role ambiguity and role conflict have been studied extensively in the organizational sciences.<sup>3-5</sup>

Role ambiguity is viewed as “the situation where an individual does not have a clear direction about the expectations of his(her) role in the job or organization, and the requirements/methods to complete their job tasks”.<sup>6</sup> It occurs when a person’s tasks or authority are not clearly defined and the person becomes afraid to act or take responsibility for anything.<sup>7</sup> Role ambiguity is also defined as “the absence of satisfactory information which is required in order for persons to accomplish their role in a satisfactory manner”.<sup>4</sup> Role ambiguity can appear as a result of

ARCHIVES OF HELLENIC MEDICINE 2017, 34(5):648–655  
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2017, 34(5):648–655

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Περίληψη στο τέλος του άρθρου

### Key words

Health services administration  
Nurses  
Physicians  
Role ambiguity  
Role conflict

Submitted 18.9.2016

Accepted 25.9.2016

inadequacy of information on role extent, role behavior and role hierarchy.<sup>5</sup> Typically, role ambiguity and role conflict are considered together, although studies show that they have different origins and therefore require different management interventions.<sup>8</sup>

Role conflict is defined "as the incompatibility of requirements and expectations from the role, where compatibility is judged based on a set of conditions that impact role performance."<sup>6</sup> Conflict may also occur when people disagree about what the expectations are for a particular role.<sup>8</sup> Role conflict has been described as "a feeling of being torn in multiple directions, unable to find a way to make every role partner satisfied".<sup>7</sup> Role conflict arises when the claim of time and endeavor demanded for certain roles become incompatible with each other and overwhelming, that is when participation in one role sacrifices the other, making it difficult or even impossible to participate in another.<sup>7,9</sup>

A considerable amount of research has documented both role conflict and role ambiguity as sources of job dissatisfaction. In a meta-analysis of 96 studies on the hypothesized antecedents and consequences or outcomes associated with role conflict and role ambiguity, job satisfaction was the most frequently used consequence variable, appearing in about half of all studies, and was negatively correlated with both role ambiguity and role conflict.<sup>10</sup> In one report, the researchers argued that if role ambiguity is diminished, the level of job satisfaction and organizational engagement will be increased.<sup>11</sup> A significant negative relationship between organizational commitment and role ambiguity and role conflict have been found in other relevant studies.<sup>12,13</sup> Role conflict and ambiguity have been shown to cause lower productivity, tension, dissatisfaction and psychological withdrawal from the work group.<sup>14</sup> Internal consistency among role conflict, role ambiguity and role overload and stress are positively correlated with depression, anxiety, and hopelessness.<sup>15</sup> The relationship between role ambiguity and role conflict and job stress mediated by work insecurity is compelling.<sup>16</sup> In a study of primary and secondary school teachers, role conflict and ambiguity were shown to affect the performance of both individuals and the organization as a whole.<sup>17</sup>

Concerning role conflict specifically, researchers note that the greater the role conflict among the members of an organization, the less efficient is the organization and the less satisfied are those working in it.<sup>18</sup> Role conflict is both an integral part of the work environment, and a real phenomenon related to people who work in the same work environment on a daily basis.<sup>19</sup> In health care facilities, where many professional groups with different tasks are

interacting with each other constantly, the development of role conflict and role ambiguity appears to be inevitable.<sup>2,3,20</sup>

Greek public hospitals and health centers continue to face serious organizational problems.<sup>21-23</sup> The Greek National Health System depends on the willingness and commitment of the employees to contribute to the effective and quality performance of the health facilities.<sup>24</sup>

For this reason, it is important to study role ambiguity and conflict, mainly because of their multifaceted effects on the shaping of professional relations and the satisfaction drawn from them. The well-regulated and effective performance of health care organizations can be achieved when conflict and ambiguity are handled with appropriate administrative interventions.

Role conflict and ambiguity in the roles assumed by health care employees in the execution of their duties endangers the smooth running and efficiency of the organization.

The aim of this study was to identify role conflict and role ambiguity overall and at the various levels in the public health care facilities in Crete, as perceived by physicians and nurses.

## MATERIAL AND METHOD

This descriptive comparative study was conducted in Crete (Greece) with nurses and physicians working in the 5 public general hospitals (secondary health level), the single university hospital (tertiary health level) and 7 of the 14 public health centers (primary health level), which were selected by a multistage random sampling method. Ethical approval for the study was obtained from the Research and Bioethics committees of the University Hospital of Crete.

Role ambiguity was measured using 6-item scale and role conflict was measured using an 8-item scale.<sup>6</sup> The self-completed anonymous questionnaires were distributed in the workplace following elicitation of the oral informed consent of the participants after a complete description of the study. Of the 200 questionnaires that were distributed to physicians and nurses, 156 were returned completed (response rate 78%).

## Instrument

In order to evaluate the levels of role ambiguity and role conflict among physicians and nurses working in Cretan health centers and hospitals, the Greek version of the Role Ambiguity and Conflict Scales was administered.<sup>6,25</sup> In a study measuring role ambiguity and role conflict using the Greek version of the scales, Cronbach's alpha was  $\alpha=0.85$  and  $\alpha=0.86$ , respectively.<sup>25,26</sup> The first scale measures role ambiguity and consists of six statements. The

responses are scored on a 7-point scale (ranging from 1: absolute ambiguity to 7: absolute clarity). The second scale measures role conflict and consists of eight statements, the responses to which are also scored on a 7-point scale (ranging from 1: absolute non-conflict to 7: absolute role conflict).<sup>26</sup> A higher score indicates greater role ambiguity and conflict, respectively. In the present study, the reliability analysis gave Cronbach's alpha measurements of  $\alpha=0.828$  for role ambiguity and 0.791 for role conflict.

### Statistical analysis

Statistical analysis of the data was carried out using the Statistical Package for Social Sciences (IBM SPSS) software, version 21.0. The distribution of the descriptive characteristics of 156 employees was calculated. The role ambiguity and role conflict scales were tested using Q-Q plots (according to Blom). The distribution was found to be normal, and the average scores and corresponding 95% confidence intervals (95% CI) were calculated.

Differences in the role ambiguity and conflict scores depending on health care level (primary, secondary and tertiary) and professional group (medical and nursing staff) were determined using MANCOVA. The covariates used were gender, age, education level, health care level, professional group and occupational status. Heterogeneity was tested by the Levene test, with an acceptable significance level of 0.05.

## RESULTS

### The socio-demographic characteristics of the study sample

The participants, 75 physicians and 81 nurses, were almost equally distributed in the primary (33.3%), secondary (32.1%) and tertiary (34.6%) levels of health care (tab. 1). The majority of respondents (41%) had been working in the specific facility for more than 10 years, and 78.8% of the respondents were graduates of Universities or Technological Educational Institutes (TEI) (tab. 1).

### Measurement of role ambiguity and role conflict

Table 2 shows the mean scores for each item on the role ambiguity and conflict scales. The total role ambiguity score was  $3.20 \pm 1.30$  and the total role conflict score was  $4.75 \pm 1.19$ . The highest mean score ( $4.04 \pm 1.83$ ) on the role ambiguity scale was found for statement 6, "I receive clear explanations of what has to be done", while the highest mean score ( $6.27 \pm 1.26$ ) on the role conflict scale was recorded for statement 1, "I have to do things that should be done differently" (tab. 2).

**Table 1.** Characteristics of health care professionals working in the public health care sector in Crete (n=156).

	Males	Females	Total
	n (%)		
<i>Health professionals</i>	57 (36.5)	99 (63.5)	156
<i>Age (years)</i>			
20–29	6 (10.5)	22 (22.2)	28 (17.9)
30–39	27 (47.4)	48 (48.5)	75 (48.1)
40–49	20 (35.1)	22 (22.2)	42 (26.9)
≥50	4 (7.0)	7 (7.1)	11 (7.1)
<i>Educational level</i>			
Secondary	5 (8.8)	8 (8.1)	13 (8.3)
Technical school	–	7 (7.1)	7 (4.6)
Higher	42 (73.7)	81 (81.8)	123 (78.8)
MSc or PhD	10 (17.5)	3 (3.0)	13 (8.3)
<i>Profession</i>			
Physicians	47 (82.5)	28 (28.3)	75 (48.1)
Nurses	10 (17.5)	71 (71.7)	81 (51.9)
<i>Occupational status (years of work)</i>			
<1	2 (3.5)	9 (9.2)	11 (7.1)
1–4	15 (26.4)	12 (12.1)	27 (17.3)
5–6	9 (15.8)	22 (22.2)	31 (19.9)
7–10	10 (17.5)	13 (13.1)	23 (14.7)
10+	21 (36.8)	43 (43.4)	64 (41.0)
<i>Health care level</i>			
Primary	19 (33.3)	33 (33.3)	52 (33.3)
Secondary	17 (29.8)	33 (33.3)	50 (32.1)
Tertiary	21 (36.8)	33 (33.3)	54 (34.6)

Chi-square test: Significant difference was found between the sexes in educational level and profession ( $p < 0.05$ )

### Correlation of role ambiguity and role conflict with socio-demographic characteristics

Table 3 shows the scores on the role ambiguity and conflict scales according to gender, profession and level of health care facility. Regarding the correlation of the role ambiguity and conflict scores with gender, females presented a higher ambiguity score than males ( $r=0.203$ ,  $p < 0.05$ ) (results not shown in tables). Statistically significant differences were noted between physicians and nurses ( $p < 0.001$ ), with nurses presenting a higher mean ambiguity score than physicians (3.48 vs 2.90,  $p=0.020$ ). Higher scores were recorded among staff at the primary health care level (3.29 vs 2.14,  $p < 0.001$ ) (tab. 3).

**Table 2.** Scores on the Role Ambiguity and Role Conflict Scales of health care professionals, working in the public health care sector in Crete (n=156): Mean, standard deviation (SD) and 95% confidence intervals (95% CI).

	Mean score	SD	95% CI	
<i>Role ambiguity items</i>				
I feel certain about how much authority I have	2.97	1.83	2.69	3.25
I have clear, planned objectives for my job	3.70	1.96	3.36	3.99
I know that I have divided my time properly	3.10	1.71	2.78	3.35
I know what my responsibilities are	2.33	1.57	2.08	2.57
I know exactly what is expected of me	3.05	1.71	2.79	3.31
I receive clear explanations of what has to be done	4.04	1.83	3.73	4.31
Total score	3.20	1.30	2.97	3.39
<i>Role conflict items</i>				
I have to do things that should be done differently	6.27	1.26	6.06	6.46
I receive an assignment without the manpower to complete it	5.33	1.83	5.04	5.61
I have to buck a rule or policy in order to carry out an assignment	5.01	1.81	4.70	5.27
I have to work with two or more groups who operate quite differently	5.51	1.85	5.20	5.79
I receive incompatible requests from two or more people	4.18	2.18	3.83	4.51
I do things that are apt to be accepted by one person and not accepted by others	4.14	2.08	3.83	4.45
I receive an assignment without adequate resources and material to execute it	5.02	1.94	4.69	5.31
I work on unnecessary things	2.54	1.98	2.25	2.85
Total score	4.75	1.19	4.55	4.92

Scales scored between 1: absolute ambiguity or non-conflict to 7: absolute clarity or absolute conflict

**Table 3.** Scores on the Role Ambiguity and Role Conflict Scales of health care professionals according to their profession and health care level (n=156).

Scales score*	Profession		p value
	Physicians	Nurses	
	Mean (SD) [n]		
<i>Total</i>			
Role ambiguity	2.90 (0.16) [75]	3.48 (0.14) [81]	0.020
Role conflict	4.91 (0.16)	4.60 (0.15)	0.208
<i>Primary health care level</i>			
Role ambiguity	2.14 (1.10) [25]	3.29 (0.9) [27]	<0.001
Role conflict	4.98 (0.89)	4.88 (1.32)	0.738
<i>Secondary health care level</i>			
Role ambiguity	3.14 (1.41) [25]	3.85 (1.67) [25]	0.109
Role conflict	4.63 (1.23)	4.39 (1.43)	0.527
<i>Tertiary health care level</i>			
Role ambiguity	3.21 (1.01) [25]	3.49 (0.99) [29]	0.320
Role conflict	4.85 (1.01)	4.76 (1.19)	0.765

\*Scales scored between 1: absolute ambiguity or non-conflict to 7: absolute clarity or absolute conflict  
Mann-Whitney tests

## DISCUSSION

The phenomenon of role ambiguity and conflict in health care settings has often been covered in the international literature, with reports of a significant impact on the performance of both health care professionals and the health care facilities.<sup>3,20</sup>

The results of the present study show that, overall, the physicians and nursing staff of Cretan health care facilities present low mean role ambiguity and high mean role conflict. A study carried out at a provincial public hospital in another part of Greece gave similar results, with a higher mean role conflict score and a relatively low role ambiguity score.<sup>2</sup> The nursing staff who participated in the present study recorded a higher mean role ambiguity score than the medical staff, which corresponds to the clearly defined physician's professional role, in contrast to the overlap seen in the roles of the nursing staff in the Greek National Health System. In a related study on the factors shaping the confirmation of expectations regarding the nursing profession, conducted with the nursing staff of three public hospitals in Thessaloniki and one provincial public hospital in the region of Macedonia, the overwhelming majority of nurses

(95.9%) stated that their field of activity and responsibility was nowhere clearly described.<sup>27</sup>

According to the theory of bureaucracy, "the main source of authority of bureaucratic administrations lies in the role of technical expertise".<sup>28</sup> The main role of technical expertise in bureaucratic organizations, and in particular in the health care facilities of Greece, is in the practices of quantification, standardization and classification, which are intended to diminish any ambiguity in the system.<sup>29</sup>

Role is defined "as a combination of different tasks assigned to employees, which the employees perform in such a way that the organization has some expectations from them".<sup>30</sup> Health care professionals seek to balance technological and administrative demands with the need to provide patient-focused care, all in an adequate and cost-effective manner. These roles may or may not be compatible with each other. Problems concerning the organization of the health care system, with different levels of education and ranking in the hierarchy of the staff, and weaknesses in job descriptions, all result directly in vagueness of employee roles and tend to lead to inaction.<sup>2</sup> Complex organizations such as health care facilities, and hospitals in particular, are characterized by high specialization, a heavy workload and interaction between different professional groups, in addition to vertical organizational hierarchy, and are vulnerable to conflicts.<sup>31-33</sup>

The levels of role ambiguity recorded here among the medical and nursing staff of Cretan health care facilities can be interpreted as average, shaped by and composed of the organizational and structural features of the health care services. Even low-level role ambiguity, however, is associated with stress and lowering of job satisfaction with impact on professional performance and the desire among personnel to leave employment.<sup>34</sup> Another element of ambiguity has been highlighted, namely that it can prevail in the documentation of organizations and the policies they apply, either as an unintended consequence of the application of rules and procedures in a rigorously limited sense, or due to the conscious introduction of ambiguity in order to warrant flexible interpretations of organizational procedures and policies.<sup>35</sup>

With regard to role conflict, the physicians presented a higher score than the nurses employed in the Cretan health care facilities.

Role conflict is more intense in tasks where more abstract thinking and decision-making are required.<sup>36</sup> Moreover, the complexity of the tasks to be carried out may be so great and demanding that individual staff operating

on their own cannot accomplish their duties effectively under conditions of role ambiguity and role conflict. In the health care sector, the tasks necessary to provide quality services require the coordination of many highly specialized disciplines whose practitioners must work together. The physicians and managers have different perceptions and approaches to problems in health care organizations. The approach of the managers is based mainly on cost reduction and efficiency. Physicians focus on patient care, and their broader role influences the other members of their health care team.<sup>37</sup> The role of doctors and nurses is complicated and many aspects of their work need to be negotiated across both managerial and clinical domains.<sup>37</sup> Conflicts on issues of power or the allocation or management of power among health care professionals are frequently observed in inter-professional cooperation.<sup>38</sup> In a study of pediatric hospitals in Greece, organizational problems were the main issue creating conflicts, with 52% of nurses and 45% of physicians agreeing that receiving directions from more than one manager may lead to conflicts. Educational differences and communication gaps have also been reported to be another cause of conflicts, with nurses perceiving this as a problem more often than the other health care professionals.<sup>39</sup>

A related study showed that most conflicts were between coworkers at the departmental level, and only 17% were between members of different professional groups. In line with the results of the present study, physicians were reported to present a higher level of conflict with their colleagues than nurses.<sup>40</sup> It has been documented that when the conflict level is high, the performance of the organization falls, due to lack of coordination and cooperation.<sup>41</sup> This means that the organization degenerates into a state of recession and important tasks are not carried out, because staff members spend more time defending themselves or attacking others than being productive and committed to their work. When the conflict level is too low, on the other hand, the performance of the organization may also be decreased, due to lack of motivation and passive and apathetic behavior at work.<sup>41</sup>

Conflict is presented as a negative influence that can have a significant impact on the activity and productivity of an organization and the behavior of a group of employees, but the contrasting view argues that conflict may, in certain circumstances, also bring about positive results, such as improvement of the organization, and have a significant effect on its development and problem-solving capacity through creativity and innovative solutions.<sup>42,43</sup> In today's diverse organizational environment, the possibility of using

conflict as a motivating force for growth and innovation is compulsory has led to a shift in focus from prevention of conflict to management and exploitation of conflict.<sup>44</sup>

In a study in public hospitals in Cyprus, with a sample of 1,292 health professionals, the employees stated that the main causes of conflict were organizational ambiguities, problems in organizational structure, communication issues and mutual dependence between the departments and the wards.<sup>45</sup> A study at the "Tzaneio" Hospital in Piraeus on conflict management among the nursing staff produced similar results, with nurses considering organizational ambiguities to be the major cause of conflict among health care professionals.<sup>46</sup>

The results of the present study show that among the staff of the Cretan health care facilities, women present a higher role ambiguity level than men, while older employees, probably due to experience, have a lower ambiguity score than younger staff. In a study investigating role ambiguity and conflict in the medical and nursing staff of a provincial Greek public hospital, the results were similar to those of the present study, with a higher role conflict score overall and a lower role ambiguity score. In that study, dif-

ferences were observed in role ambiguity between younger and older employees, with the former scoring higher on the role ambiguity scale.<sup>2</sup> Similar findings emerged from a study on the nursing staff of 18 private nursing homes in Cyprus. Older nurses presented less role ambiguity, although, in contrast to the results of the present study, female nurses presented a lower degree of ambiguity than their male colleagues.<sup>47</sup> It should, however, be noted that the study concerned private rather than public health care facilities, while the Cypriot health care system is very different, on both a functional and a structural level, from that of Greece.

In conclusion, recognition of the importance of role conflict and role ambiguity allows their detection, and deepening of knowledge of their origins, as sources of job dissatisfaction and consequently as important factors leading to poor productivity and low performance of health care facilities. It would be constructive for the managers of the health care facilities in Crete to introduce organizational interventions covering all the employees, adopting a team-oriented approach, designed to reduce ambiguity in professional roles and minimize conflict or find effective ways of managing it.

## ΠΕΡΙΛΗΨΗ

### Σύγκρουση και ασάφεια ρόλων μεταξύ ιατρών και νοσηλευτών στον δημόσιο τομέα υγείας της Κρήτης

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*Αρχεία Ελληνικής Ιατρικής 2017, 34(5):648–655*

**ΣΚΟΠΟΣ** Η διερεύνηση της σύγκρουσης και της ασάφειας ρόλων στους δημόσιους οργανισμούς υγείας της Κρήτης σύμφωνα με την αντίληψη των ιατρών και των νοσηλευτών που υπηρετούν σε αυτούς. **ΥΛΙΚΟ-ΜΕΘΟΔΟΣ** Εφαρμόστηκε περιγραφική συγκριτική μελέτη σε 5 δημόσια γενικά νοσοκομεία, ένα πανεπιστημιακό γενικό νοσοκομείο και σε 7 από τα 14 κέντρα υγείας, τα οποία επιλέχθηκαν με τυχαία μέθοδο. Εφαρμόστηκε η μέθοδος της πολυσταδιακής τυχαίας δειγματοληψίας. Η έρευνα διεξήχθη σε δείγμα 75 ιατρών και 81 νοσηλευτών. Χρησιμοποιήθηκαν δύο κλίμακες ασάφειας και σύγκρουσης ρόλων. Για την ανάλυση των δεδομένων που συγκεντρώθηκαν χρησιμοποιήθηκαν πολυμεταβλητές μέθοδοι. **ΑΠΟΤΕΛΕΣΜΑΤΑ** Η συνολική μέση βαθμολογία ήταν  $3,20 \pm 1,30$  για την ασάφεια ρόλων και  $4,75 \pm 1,19$  για τη σύγκρουση ρόλων. Οι γυναίκες παρουσίασαν αυξημένη μέση βαθμολογία ασάφειας ρόλων ( $p < 0,05$ ), καθώς επίσης και οι μικρότερες ηλικίες εργαζομένων ( $p < 0,001$ ). Οι νοσηλευτές κατέγραψαν υψηλότερη μέση βαθμολογία ασάφειας ρόλων ( $3,48 \pm 0,14$ ), ενώ, αντίθετα, το ιατρικό προσωπικό παρουσίασε υψηλότερη μέση βαθμολογία σύγκρουσης ρόλων ( $4,91 \pm 0,16$ ). Η ανάλυση ανά επίπεδο φροντίδας υγείας έδειξε στατιστικά σημαντική διαφορά, με τις γυναίκες να παρουσιάζουν υψηλότερη μέση βαθμολογία ασάφειας σε σχέση με τους άνδρες ( $r = 0,203$ ,  $p < 0,05$ ). Στατιστικά σημαντική διαφορά βρέθηκε επίσης μεταξύ των ιατρών και των νοσηλευτών ( $p < 0,001$ ), με τους νοσηλευτές να παρουσιάζουν υψηλότερη μέση βαθμολογία ασάφειας ρόλων σε σχέση με το ιατρικό προσωπικό στο σύνολο ( $3,48$  έναντι  $2,90$ ,  $p = 0,020$ ), καθώς και στα κέντρα υγείας ( $3,29$  έναντι  $2,14$ ,  $p < 0,001$ ). **ΣΥΜΠΕΡΑΣΜΑΤΑ** Η υψη-

λή ασάφεια και η σύγκρουση ρόλων στο ιατρικό και στο νοσηλευτικό προσωπικό μπορεί να οδηγήσει σε μειωμένη αποτελεσματικότητα και αποδοτικότητα των υπηρεσιών υγείας. Η γνώση του βαθμού ασάφειας και της σύγκρουσης που καταγράφεται στο ιατρικό και στο νοσηλευτικό προσωπικό δημιουργεί τις προϋποθέσεις για μελλοντική έρευνα και αποτελεσματική διοίκηση. Για τη μείωση του βαθμού ασάφειας και σύγκρουσης ρόλων, η διοίκηση θα πρέπει να εισάγει διεπιστημονικά προγράμματα, με στόχο την παροχή ποιοτικής φροντίδας με επίκεντρο τον ασθενή.

**Λέξεις ευρητηρίου:** Ασάφεια ρόλων, Διοίκηση υπηρεσιών υγείας, Ιατροί, Νοσηλευτές, Σύγκρουση ρόλων

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