(Article)

Greek Military Nursing Officers' Leadership Style: Compassion Competence and Personal Level at Work

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Abstract: The present study seeks to investigate MNOs leadership style and how it influences their compassion competence and their personal level of compassion at work. This is a cross-sectional study carried out from December 2019 to May 2020 using the method of convenience sampling. The study involved 235 MNOs serving in Greek Military Hospitals. A single questionnaire containing Compassion at Work index, Compassion competence scale and Multifactor Leadership Questionnaire (MLQ-5X) and socio-demographic and professional data, was used for data collection. A total of 400 printed questionnaires were distributed with a response rate of 58.75%. Data analysis was performed using the statistical package SPSS 22.0. The research showed that the transformational and transactional leadership style coexist in the Nursing Corps of the Armed Forces with an average value of 2.72(SD=0.70)-2.95(SD=0.54) points and 2.47(SD=0.69)-2.74(SD=0.63) points respectively, while the passive style represented a very small percentage with an average subscale value of 0.88(SD=0.61)-0.94(SD=0.63) points. It was also found that both actual compassion at work and compassion ability had improved with the increase of transformational or transactional leadership style characteristics and amelioration of leadership outcome criteria. On the other side, a deterioration of these was observed with the increase of the passive leadership. Specifically, a higher score in the «Intellectual Stimulation» scale was associated with a higher level of compassion at work in the dimension «Experiencing the suffering of others» (p=0.010/SD=0.14), while higher values on the «Laissez-Faire Leadership» scale were associated with less compassion at work in the same dimension (p<0.001/SD=0.13). Also, a higher score in the «Contingent Reward» scale was associated with more compassion at work in the dimension «Takes appropriate action» (p=0.023/SD=0.16). Furthermore, higher values observed in the «Inspirational Motivation», «Individual Consideration» and «Extra Effort» scales were associated with a better communication ability (p=0.035/SD=0.09, p=0.022/SD=0.12 and p=0.042/SD=0.08 accordingly). Finally, a higher score in the «Effectiveness» scale was associated with higher sensitivity (p=0.049/SD=0.08). Teaching appropriate leadership behavior, promoting a culture of compassion and continuing to train nurses to manage their emotions should be included in the infrastructure of the nursing science.

Keywords: Compassion; Miliatary Nurse; Leadership Style

1. Introduction

The concept of leadership and its characteristics is a topic that concerns the scientific community for many years and multiple theories about existing leadership styles and effective leadership have evolved. However, many of these theories have been questioned regarding their completeness or realistic implementation in the modern professional context [1]. One of the most accepted models is the Full Range Leadership Model (FRLM), which includes transformational, transactional and passive leadership [2].

During the last decades, the relationship between health professionals and their patients has also been in the spotlight. The efficiency, effectiveness and quality of the services

provided, as well as patient satisfaction, are now considered a priority of the health systems of developed countries [3,4].

Leadership and compassion are universal concepts [5]. Modern science holds compassion as a necessary skill in order for the health professional to provide proper care to patients. Identification of emotional state of others and a relative understanding response, together with the desire to relieve the pain others experience, are important aspects of quality healthcare. However, the caregiver must be able to manage his own emotions so that his own health status is not endangered by psychiatric / psychological disorders, such as compassion fatigue [6]. Compassionate care, which has been proven as a necessity in healthcare, is hampered by certain factors, some of which can be attributed to the work environment itself [7]. Leadership plays a key role in fostering compassionate healthcare [8]. An organization's culture refers to the behaviors of its members and these in turn express the attitudes, beliefs and values that have been defined by the leadership team as an integral component of its operation [9]. Promoting a compassionate culture can render benefits such as good fellowship, professional satisfaction and improved health services [10].

Military Nursing Officers (MNOs), in their dual capacity as nurses and military officers, regularly face the obligation to lead a team that is usually tasked with patient health improvement. Military Nursing managers in military hospitals have the same responsibilities and complex role   with those in non-military to maintain the link between institution's administrative mission and the nurses who provide nursing care in the clinical units, as well as being in charge of efficient patient care activities by ensuring that subordinate nurses are qualified for the tasks allocated to them [11]. Choosing the right leadership style in order to achieve a controlled emotional involvement and compassion- as well as to deal with stressful situations - are attributes that MNOs must possess if they are to cope with their professional requirements without risking their own mental health. The present study seeks to investigate MNOs leadership style and how it influences their compassion competence and   their personal level of compassion at work.

It is worth noting that the uniqueness of this research - in addition to the almost statistically negligible number of studies involving exclusively military nurses - is mainly due to the fact that it studies the effect of the leadership style on the leader himself and not on his subordinates.

2. Materials and Methods

This is a cross-sectional study conducted from December 2019 to May 2020 in the 5 Hellenic Armed Forces General Military Hospitals.

  The study population consisted of MNOs of the Hellenic Armed Forces using the method of convenience sampling. Criteria for participation has been set for the MNOs to be working for one of the five Hellenic Armed Forces General Military Hospitals; 401 Athens General Military Hospital (401 AGMH), 404 General Military Hospital (404 GMH), 424 General Military Training Hospital (424 GMTH), Athens Naval Hospital (ANH) and 251 Air Force General Hospital (251 AFGH). An exclusion criterion has been defined as less than 2 years of work experience. A total of 400 printed questionnaires were distributed to a population of about 600 people and 235 were completed (response rate 58.75%) with average completion time about 20 minutes.

The study tool consisted of four different parts: Socio-demographic and professional data using 11 questions, Compassion at Work index, Compassion Competence Scale and Multifactor Leadership Questionnaire (MLQ-5X). Compassion at Work index is a reliable and valid tool which contains 24 questions recording the frequency of specific feelings or behaviors in the workplace, answered in 5-point Likert scales (1=almost never to 5=almost always) with 5 subscales: "Experiencing the suffering of others", "Being non-judgmental", "Being tolerant to personal distress", "Being empathic" and "Takes appropriate action". The validation of the questionnaire in the Greek population was

performed during the current research. Cronbach Alpha was found to be 0.87. Compassion Competence Scale is a questionnaire with 17 questions answered in 5-point Likert scales (1=Strongly Agree to 5=Strongly Disagree). It has 3 subscales: "Communication", "Sensitivity" and "Insight". The validation of the questionnaire in the Greek population was performed during the current research. Cronbach Alpha was found to be 0.91 [12]. Multifactor Leadership Questionnaire (MLQ-5X) includes 45 questions answered in 5-point Likert scales (0=not at all to 4=almost always) and measures the leadership style. It identifies three basic dimensions: a)Transformational leadership, b) Transactional - Processing leadership and c) Passive - Avoidant leadership. Transformational leadership is measured in five (5) aspects: "Idealized attributes", "Idealized behaviors", "Inspirational motivation", "Intellectual stimulation" and "Individual consideration".Transactional leadership is measured in two (2) aspects, "Contingent reward" and "Management-by-exception-active". Passive leadership is also measured in two (2) aspects: "Management-by-exception-passive" and "Laissez Faire". Also, the MLQ-5X questionnaire includes and measures three (3) outcome criteria: "Extra effort", "Satisfaction" and "Effectiveness". The Cronbach Alpha index was found to be more than 0.70 [13].

2.1 Statistical Analysis

The Kolmogorov-Smirnov test was used to test the null hypothesis that the data set comes from a Normal distribution. Mean values and standard deviations (SD) were used to describe quantitative variables. Absolute (N) and relative (%) frequencies were used to describe the qualitative variables. The Pearson correlation coefficient (r) was used to control the relationship between two quantitative variables. Linear regression analysis was used to find independent factors related to the leadership style sub-scales from which dependence coefficients (b) and their standard errors (SE errors) were derived. Demographic data (gender, age, marital status, number of children, educational level) as well as employment data (health status, position, years of service, department, department selection and working hours) were entered in all linear regressions. In the hierarchical analyses, scales under study were introduced.Significance levels were bilateral and the statistical significance was set at 0.05. The statistical program SPSS 22.0 was used for the analysis.

2.2 Research Ethics

For the conduct of the research, permission to distribute the questionnaires was granted by the 401 AGMH, 424 GMTH, AHN and 251 AFGH Ethics Committee. Use of the Compassion at Work, Compassion Competence and MLQ-5X Scale questionnaires was licensed by the original researchers. The participants were informed about the purpose of the study the preservation of their anonymity, the voluntary nature of their participation and the right to refuse to continue. The questionnaire included a form of confidentiality and inform consent. The authors state that there are no conflicting interests that could potentially influence the evaluation of the work.

3. Results

The research involved 235 MNOs with an average age of 38.0 years (SD=8.8).   Of all participants, 80.9% were women and 19.1% were men. The majority of participants were married (65.8%) and 37.1% having no children. Regard**ing their academic background 41.8% held a postgraduate or doctoral degree, 54.0% had a nursing specialty and 4.8% a nursing specialization (Table 1**).

Table 1. Demographics of participants

		N	%
Gender	Male	45	19.1
	Female	190	80.9
Age. mean (SD)		38.0 (8.8)	
Marital status	Single	70	29.9
	Married	154	65.8
	Divorced	10	4.3
Number of children	0	85	37.1
	1	40	17.5
	2	70	30.6
	3	28	12.2

	4	5	2.2
	5	1	0.4
Postgraduate or doctoral degree	No	110	58.2
	Yes	79	41.8
Nursing specialty	No	87	46.0
	Yes	102	54.0
Nursing specialization	No	180	95.2
	Yes	9	4.8

Most of the participants (57%) were working in the Army and 57.8% were senior-ranked Officers, while 77.0% of the participants were Head Nurses of Departments. The average number of their years of service was 15.1 years (SD = 8.6). Regarding their working conditions, 81.1% of the participants were working shifts (Table 2).

Table 2. Professional data of participants

		N	%
Medical Corps	Army	134	57
	Navy	31	13.2
	Air Force	70	29.8
Rank	Junior Officer	98	42.2
	Senior Officer	134	57.8
Position	Department Nursing Officer	181	77.0
	Hospital Nursing Supervisor Hospital Nursing Director	3	1.3
	Department Head Nurse	42	17.9
	Other	9	3.8
Years of service. mean (SD)		15.1 (8.6)	
Years of service in current hospital. mean (SD)		11.3 (8.4)	
Department	Medical Departments	56	24.7
	Surgical Departments	72	31.7
	Mixed Departments	4	1.8
	Closed Departments (in direct contact with patients)	61	26.9
	Closed Departments (without direct contact with patients)	8	3.5
	Outpatient Departments	14	6.2
	Administrative	12	5.3
working department	Individual decision	69	30.3
	Hierarchy Decision	103	45.2
	Common decision	56	24.6
shift work	No	42	18.9
	Yes	180	81.1
number of shifts per month Mean (SD)			
Evening shift		3.3 (2.3)	3 (2 - 5)
Night shift		2.7 (2.1)	2 (1 - 4)
24-hour shift		3.1 (0.8)	3 (2 - 4)

Table 3 returns the scores of the participants in the Multifactor Leadership Questionnaire subscales, the compassion competence and compassion at work index subscales. Scores can range from 0 to 4 points, with higher values indicating a wider use of specific leadership styles or a higher leadership outcome.

Mean values in the subscales of the transformational style ranged from 2.72 (SD=0.70) to 2.95 (SD=0.54). In transactional style, the average value of the subscale "Contingent reward" was 2.74 (SD=0.63) and the subscale "Management-by-exception-active" was 2.47 (SD=0.69). In the passive style, the average value of the subscale "Management-by-exception-passive" was 0.94 (SD=0.65) and the subscale "Laissez Faire" was 0.88 (SD=0.61). In the outcome criteria, the average value of the subscale "Extra effort" was 2.55 (SD=0.74), the subscale "Efficiency" was 3.05 (SD=0.54) and the subscale "Satisfaction" was 3.05

(SD=0.57). MNOs mean values on the dimensions of compassion at work index ranged from 3.19 to 3.92 with the highest value being the dimension "Being tolerant to personal distress". Scores of dimensions of Compassion competence scale were as follows: mean score in the dimension "Communication" was 3.87 (SD=0.55), in the dimension "Sensitivity" was 3.97 (SD=0.63) and in the dimension "Insight" was 3.75 (SD=0.65).

Table 3 Scores of participants in the Multifactor Leadership Questionnaire (MLQ-5X), Compassion competence scale and Compassion at work index

Multifactor Leadership Questionnaire (MLQ-5X)	**Min**	**Max**	**mean**	**SD**
TRANSFORMATIONAL STYLE				
Idealized attributes	1.00	4.00	2.86	0.56
Idealized behaviors	1.00	4.00	2.79	0.59
Inspirational motivation	0.75	4.00	2.72	0.70
Intellectual stimulation	1.25	4.00	2.77	0.59
Individual consideration	1.50	4.00	2.95	0.54
TRANSACTIONAL STYLE				
Contingent reward	1.00	4.00	2.74	0.63
Management-by-exception-active	0.50	4.00	2.47	0.69
PASSIVE STYLE				
Management-by-exception-passive	0.00	3.25	0.94	0.65
Laissez Faire	0.00	3.25	0.88	0.61
OUTCOME CRITERIA				
Extra effort	0.00	4.00	2.55	0.74
Efficiency	1.75	4.00	3.05	0.54
Satisfaction	1.00	4.00	3.05	0.57
Compassion at work index	Min	Max	mean	SD
Experiencing the sufferings of others	1.40	5.00	3.85	0.73
Being non-judgmental	1.40	5.00	3.85	0.64
Being tolerant to personal distress	1.33	5.00	3.92	0.75
Being empathic	1.33	4.67	3.19	0.60
Takes appropriate action	1.00	5.00	3.56	0.89
Compassion Competence Scale				
Communication	1.57	5.00	3.87	0.55
Sensitivity	1.60	5.00	3.97	0.63
Insight	1.25	5.00	3.75	0.65

Using multiple linear regression analysis, in which the Multifactor Leadership Questionnaire subscales were dependent variables and the demographic-professional data of the participants were independent variables, the following findings have emerged (Table 4):

The "Idealized attributess" subscale of the transformational leadership style was found to correlate   with the number of children, the position and the working department. MNOs rank and their position in the department correlated also with the "Idealized behaviors" sub-scale of the transformational leadership style. More analytically, in terms of leadership style, a greater presence of the "Idealized attributes" sub-scale of the transformational leadership style (referring to the charismatic elements of the leader) appeared to MNOs without a child compared to those with more than 2 children (by 0.49 points on average), to those who work in another position (offices) compared to deputy nurses (by 0.86 points).The presence of the "Idealized Behaviors" sub-scale of the transformational leadership style (which refers to the leader's emphasis on the collective sense of values and goals, as well as the action to achieve them) was higher in Senior Officers compared to Junior (by 0.40 points) and to those holding the position of Head Nurses/ Hospital Nursing managers/ Hospital Nursing Directors compared to the deputies (by 0.61 points).

Their rank and nursing specialty correlated with the "Inspirational motivation" sub-scale of the transformational leadership style. More presence of the "Inspirational Motivation" sub-scale of the transformational leadership style (referring to the degree to which the leader envisions the future and motivates employees with a positive attitude) was seen in Senior Officers compared to Junior (by 0.48 points) and to participants who did not have a nursing specialty compared to those who had (by 0.63 points). Their rank and the number of children of the participants were found to correlate significantly with the sub-scales "Intellectual stimulation" and "Individual consideration" of the transformational leadership style. The sub-scale "Intellectual stimulation" were also found to

correlate with the position of the participants. The highest presence of the "Intellectual Stimulation" sub-scale of the transformational leadership style (which concerns the employees' cases, their beliefs about the problems they face and the solutions they propose) was recorded in the Senior Officers compared to the Junior ones (by 0.37 points), to those with more than 2 children in relation to those without a child (by 0.53 points) and to those holding the position of Head   Nurses/ Hospital Nursing managers/ Hospital Nursing Directors compared to the deputies (by 0.40 points). The sub-scales "Contingent reward" of the transactional leadership style and the "Management-by-exception-passive" of the passive leadership style were not found to correlate significantly   with any of the factors under investigation. The sub-scale "Management-by-exception-active" of the transactional leadership style was found to correlate with the marital status and position of the participants.The presence of the "Management by Exception (Active)" sub-scale of the transactional leadership style was greater (where the leader monitors and investigates for deviations from the rules / standards, in order to avoid possible deviations, while undertaking corrective actions when possible) in the married in relation to the unmarried (by 0.42 points) and to those who work in another position (offices) compared to the deputy nurses (by 1.37 points). The "Laissez Faire" sub-scale of the passive leadership style was found to correlate only with the position of the participants. The MNOs who were holding the position as Head of Nursing Departments/ Hospital Nursing managers/ Hospital Nursing Directors, however, showed a significantly lower score (by 0.35 points) compared to the deputy nurses in the sub-scale "Laissez-Faire" of the passive leadership style (in which there is no form of leadership).The subscale "Extra effort" of leadership outcome criteria was found to correlate only with the rank of MNOs. ("Extra effort" refers to the leader's ability to push employees to want to succeed, strive harder and do more than themselves believe they can do). In particular, the leadership style of the Senior Officers caused extra effort more than that of the Junior (by 0.50 points). The sub-scale "Effectiveness" of leadership outcome criteria was found to correlate with their gender, rank, number of children and position of the participants. In the "Effectiveness" sub-scale (ie in leading an effective group of employees) the   Senior Officers scored higher compared to the Junior (by 0.45 points), the women compared to the men (by 0.21 points), the parents with more than 2 children in relation to those without a child (by 0.41 points), as well as those holding positions as Head   Nurses/ Hospital Nursing managers/ Hospital Nursing Directors and the participants holding "other" position (offices) compared to the deputy nurses (by 0,38 units). The sub-scale "Satisfaction" of leadership outcome criteria was found to correlate with the position of the participants and their shift work.The "Satisfaction" sub-scale (which refers to the cooperation with the others that is achieved in a satisfactory way) was more visible to the participants working in "other" position (offices) compared to deputy nurses   (by 1.12 points) and to those who did not work in shifts in relation to those who did (by 0.39 units).

Table 4. Multiple linear regression results with dependent variables Multifactor Leadership Questionnaire subscales

		TRANSFORMATIONAL STYLE							
		Idealized attributess		Idealized behaviors		Inspirational motivation		Intellectual stimulation	
		β (SD)+	P	β (SD)+	P	β (SD)+	P	β (SD)+	
Rank	Junior Officers (reference)								
	Senior Officers	0.22 (0.17)	0.182	0.4 (0.18)	0.024	0.48 (0.22)	0.032	0.37 (0.18)	0
Number of children	No children (reference)								
	1-2	-0.24 (0.17)	0.165	-0.31 (0.18)	0.085	-0.3 (0.22)	0.182	-0.33 (0.18)	0
	>2	-0.49 (0.21)	0.018	-0.41 (0.22)	0.059	-0.45 (0.27)	0.094	-0.53 (0.22)	0
Nursing specialty	No (reference)								
	Yes	-0.35 (0.22)	0.113	-0.34 (0.24)	0.146	-0.63 (0.29)	0.032	-0.4 (0.24)	0
Position	Deputy Nurse (reference)								
	Head Nurse/ Hospital Nursing Supervisor / Hospital Nursing Director	0.28 (0.16)	0.078	0.61 (0.17)	<0.001	0.2 (0.21)	0.343	0.4 (0.17)	0

		Contingent reward		Management-by-exception-active		Management-by-exception-passive		Laissez Faire
	Other	0.86 (0.4)	0.035	0.87 (0.42)	0.043	0.88 (0.53)	0.098	0.56 (0.43)	0
		TRANSACTIONAL STYLE				**PASSIVE STYLE**		
		Contingent reward		Management-by-exception-active		Management-by-exception-passive		Laissez Faire
		β (SD)+	P	β (SD)+	P	β (SD)+	P	β (SD)+
Married	No (reference)							
	Yes	0.01 (0.18)	0.958	0.42 (0.18)	0.024	-0.07 (0.17)	0.668	-0.2 (0.16)	0
Position	Deputy Nurse (reference)							
	Head Nurse/ Hospital Nursing Supervisor/ Hospital Nursing Director	0.22 (0.19)	0.247	0.33 (0.2)	0.096	-0.15 (0.18)	0.414	-0.35 (0.17)	0
	Other	0.57 (0.49)	0.247	1.37 (0.5)	0.007	-0.85 (0.47)	0.071	-0.56 (0.43)	0

		OUTCOME CRITERIA					
		Extra effort		Effectiveness		Satisfaction	
		β (SD)+	P	β (SD)+	P	β (SD)+	P
Gender	Male (reference)						
	Female	0.05 (0.15)	0.743	0.21 (0.11)	0.050	0.21 (0.12)	0.080
Rank	Junior Officers (reference)						
	Senior Officers	0.5 (0.21)	0.019	0.45 (0.22)	0.050	0.07 (0.17)	0.664
Number of children	None (reference)						
	1-2	-0.36 (0.22)	0.100	-0.3 (0.16)	0.068	-0.12 (0.17)	0.497
	>2	-0.42 (0.26)	0.106	-0.41 (0.19)	0.038	-0.26 (0.21)	0.225
Position	Deputy Nurse (reference)						
	Head Nurse/ Hospital Nursing Supervisor / Hospital Nursing Director	0.2 (0.2)	0.307	0.38 (0.15)	0.011	0.28 (0.16)	0.084
	Other	0.74 (0.5)	0.143	0.94 (0.38)	0.013	1.12 (0.41)	0.007
Shift work	No (reference)						
	Yes	-0.15 (0.17)	0.384	-0.15 (0.13)	0.233	-0.39 (0.14)	0.006

Multiple hierarchical analyses were performed with the dimensions of compassion at work index as dependent variables (Table V). In the first step the demographic and professional data of the participants were introduced as independent variables and in the second step the sub-scales of leadership style were added. Considering the dimension "Experiencing the sufferings of others"-which refers to the degree of understanding and responding to the sufferings of others- the model that contained only the demographic and professional data of the participants had significant interpretive capacity ($R^2=0.18$, $p<0.001$). When the leadership style sub-scales were introduced, they exhibited a better interpretive capacity ($R^2=0.32$, $p<0.001$), with the significant increase of R^2 ($p<0.001$) indicating that the leadership style contributed significantly to the interpretation of this specific dimension of compassion. The position of the participants, the score in the transformational style's sub-scale "Spiritual stimulation" and the score in the passive style sub-scale "Laissez faire" were found to be independently related to the dimension "Experiencing suffering of others".

Considering the dimension "Being non-judgmental"-which refers to the degree of avoiding criticism of others- the model that contained only the demographic and professional data of the participants did not have significant interpretive capacity ($R^2=0.09$, $p=0.897$). When the leadership style sub-scales were introduced it exhibited a better interpretive capacity ($R^2=0.26$, $p=0.124$), yet still not significant. However, the increase of R^2 was significant ($p=0.006$) indicating that the leadership style contributed significantly to the interpretation of this specific dimension of compassion. The participants' score in the transformational style's sub-scale "Management-by-exception-active" and the passive style's sub-scale "Management-by-exception-passive" were found to be independently related to the dimension "Being non-judgmental".

Considering the dimension "Being tolerant to personal distress"-which refers to the degree of tolerance to personal discomfort- the model that contained only the demographic and professional data of the participants did not have significant interpretive capacity ($R^2=0.01$, p=0.733). Nevertheless, when the leadership style sub-scales were introduced it returned a significant interpretive capacity ($R^2=0.32$, p=0.012), suggesting that the leadership style contributed greatly to the interpretation of this specific dimension of compassion. Only the score in the transformational style's sub-scale "Inspirational motivation" was found to be significantly related to the dimension "Being tolerant to personal distress". Specifically, higher values of the "Inspirational Motivation" scale were associated with greater compassion (p=0.014).

Considering the dimension "Being empathic"-which concerns the degree of participation in other people's misfortune, until perhaps even complete identification- the model that contained only the demographic and professional data of the participants had significant interpretive capacity ($R^2=0.14$, p=0.004). When the leadership style sub-scales were introduced it exhibited a better interpretive capacity ($R^2=0.29$, p<0.001), with the increase of R^2 being significant (p<0.001), therefore suggesting that the leadership style contributed significantly to the interpretation of this specific dimension of compassion. The rank of the participants and the scores in the transformational style's sub-scales "Intellectual stimulation" and "Individual consideration" were found to be independently related to the dimension "Being empathic". Specifically: a) Senior Officers had a significantly higher score by 0.35 points compared to Junior Officers and b) higher values in the scales " Intellectual stimulation" and "Individual consideration" were associated with a higher level of compassion at work (p=0.041 and p=0.048 respectively).

Considering the dimension "Takes appropriate action"-which refers to taking appropriate action- the model that contained only the demographic and professional data of the participants had significant interpretive capacity ($R^2=0.11$, p=0.012). When the leadership style's sub-scales were introduced it had better interpretive capacity ($R^2=0.29$, p<0.001), with the increase of R^2 being significant (p<0.001), suggesting that the leadership style contributed significantly to the interpretation of this particular dimension of compassion. Only the score in the transactional style sub-scale "Contingent reward" was found to be significantly related to the dimension "Takes appropriate action". Specifically, higher valuesidentified in the "Contingent reward" scale were associated with more compassion at work (p=0.023).

Table 5. Multiple hierarchical regression results with dependent variables on the dimensions of the compassion at work index

	Being alive to the sufferings of others		Being non-judgmental		Being tolerant to personal distress		Being empathic		Takes appropriate action	
	β (SD)+	P	β (SD)+	P	β (SD)+	P	β (SD)+	P	β (SD)+	P
Idealized attributes	-0.02 (0.15)	0.912	0.2 (0.15)	0.172	-0.01 (0.17)	0.953	-0.02 (0.13)	0.902	-0.12 (0.2)	0.526
Idealized behaviors	0.02 (0.13)	0.884	-0.04 (0.13)	0.750	-0.06 (0.16)	0.714	0.08 (0.11)	0.467	0 (0.18)	0.998
Inspirational motivation	-0.09 (0.12)	0.441	0.12 (0.12)	0.307	0.34 (0.14)	0.014	0.08 (0.1)	0.448	0.13 (0.16)	0.425
Intellectual stimulation	0.36 (0.14)	0.010	-0.05 (0.13)	0.684	-0.16 (0.16)	0.315	0.25 (0.11)	0.041	0.32 (0.18)	0.081
Individual consideration	0.07 (0.16)	0.678	0.33 (0.16)	0.067	0.16 (0.18)	0.382	0.27 (0.13)	0.048	0.15 (0.21)	0.462
Contingent reward	-0.05 (0.12)	0.683	-0.05 (0.12)	0.655	-0.2 (0.14)	0.068	0.13 (0.1)	0.200	0.36 (0.16)	0.023
Management-by-exception-active	0.1 (0.09)	0.282	0.25 (0.09)	0.005	-0.21 (0.1)	0.048	0.05 (0.08)	0.567	0.12 (0.12)	0.312
Management-by-exception-passive	0.2 (0.11)	0.073	-0.26 (0.11)	0.023	-0.12 (0.13)	0.343	0.02 (0.09)	0.840	0.21 (0.15)	0.158
Laissez Faire	-0.45 (0.13)	<0.001	-0.02 (0.13)	0.847	-0.27 (0.15)	0.070	-0.12 (0.11)	0.257	-0.26 (0.17)	0.124
Extra effort	0.03 (0.11)	0.761	-0.06 (0.1)	0.564	0.08 (0.12)	0.535	-0.04 (0.09)	0.619	-0.08 (0.14)	0.567

Efficiency	0.1 (0.2)	0.629	-0.22 (0.2)	0.269	-0.01 (0.23)	0.980	-0.04 (0.17)	0.806	-0.11 (0.26) 0.690
Satisfaction	-0.09 (0.15)	0.531	0 (0.15)	0.980	0.09 (0.17)	0.613	-0.05 (0.12)	0.692	0.06 (0.2) 0.756

+correlation factor (standard deviation)

Multiple hierarchical analyses were also performed with the dimensions of compassion competence as dependent variables (Table 6). In the first step the demographic and professional data of the participants were introduced as independent variables and in the second step the sub-scales of leadership style were added.Considering the dimension "Communication"-which refers to the expression of understanding and compassion to patients and their families- the model that contained only the demographic and professional data of the participants had a significant interpretive capacity ($R^2=0.14$, $p=0.003$). When the leadership style's sub-scales were introduced it had better interpretive capacity ($R^2=0.28$, $p<0.001$), with a significant increase of R2 ($p=0.001$), suggesting that leadership style contributed significantly to the interpretation of this dimension. The rotation schedule, the scores in the sub-scales of transformational leadership style "Inspirational motivation" and "Individual consideration", as well as the score in the sub-scale of leadership outcome criteria "Extra effort", were found to be independently related to the dimension "Communication".Considering the dimension "Sensitivity"-which refers to the ability of health professionals to recognize through careful observation and respond to changes in patients' emotions- the model containing only the demographic and professional data of the participants had significant interpretive ability ($R^2=0.10$, $p=0.017$). When the leadership style's sub-scales were introduced, it returned a better interpretive ability ($R^2=0.17$, $p=0.004$), with the increase of R2 being significant ($p=0.045$) and suggesting that the leadership style contributed significantly to the interpretation of this dimension. The participants' rank and the score in the leadership outcome criteria sub-scale "Effectiveness" were found to be independently related to the dimension "Sensitivity".Considering the dimension "Insight"-which refers to the ability to clearly understand patients and fully realize the needs and conditions based on the participants' professional knowledge- the model that contained only the demographic and professional data of the participants had significant interpretive ability ($R^2=0.26$, $p=0.003$). When the leadership style's sub-scales were introduced it also had significant interpretive capacity ($R^2=0.36$, $p=0.002$), although the increase of R2 was not significant ($p=0.103$), indicating that the leadership style did not contribute significantly to the interpretation of this particular compassion ability's dimension. Only the rank of the participants was found to be independently related to the dimension "Insight".

Table 6. Results of multiple hierarchical regressions with dependent variables dimensions of Compassion Competence Scale

	«Communication»		«Sensitivity»		«Insight»	
	β (SD)+	P	β (SD)+	P	β (SD)+	P
Idealized attributes	-0.08 (0.11)	0.460	-0.13 (0.14)	0.339	-0.04 (0.14)	0.780
Idealized behaviors	0.04 (0.1)	0.706	0.05 (0.12)	0.666	0.04 (0.13)	0.781
Inspirational motivation	0.19 (0.09)	0.035	-0.09 (0.11)	0.387	0.17 (0.11)	0.126
Intellectual stimulation	0.11 (0.1)	0.273	0.08 (0.13)	0.504	0.08 (0.13)	0.542
Individual consideration	0.28 (0.12)	0.022	0.16 (0.15)	0.296	0.16 (0.15)	0.299
Contingent reward	-0.1 (0.09)	0.261	0.07 (0.11)	0.547	-0.1 (0.11)	0.375
Management-by-exception-active	0 (0.07)	0.984	0.04 (0.08)	0.627	-0.03 (0.09)	0.725
Management-by-exception-passive	0.03 (0.08)	0.689	-0.07 (0.1)	0.478	-0.01 (0.11)	0.956
Laissez Faire	-0.07 (0.09)	0.453	-0.07 (0.12)	0.563	-0.09 (0.12)	0.449
Extra effort	0.16 (0.08)	0.042	-0.06 (0.1)	0.566	-0.05 (0.1)	0.616
Efficiency	-0.01 (0.15)	0.935	0.26 (0.08)	0.049	0.13 (0.19)	0.497
Satisfaction	0.1 (0.11)	0.377	0.01 (0.14)	0.951	-0.07 (0.14)	0.639

+correlation factor (standard deviation

4. Discussion

In this study, we used a different set of measures, as outlined above, to explore how a set of established self-report questionnaires might relate to dimensions of leadership styles. It was verified that the leadership style of MNOs is related to their demographic and professional characteristics and that they tend to adopt the transformational and transactional leadership style than the passive one.

It is known that in healthcare, transformational leaders are most successful in situations where the system is in need of larger changes or overall improvements that can be directed, encouraged and overseen by a unifying, guiding force. One common challenge military nurses are prepared is to adapt to the dangerous environment which results in fear of the unknown [14,15] and that is the reason that they are keen on transformational leadership style.The present work confirms that the transformational and the transactional leadership style coexist in the Nursing Service of Hellenic Military forces to a large extent (with a mean value in their sub-scales of 2.70-2.95 points and 2.47-2.74 points respectively), giving good leadership results, while the passive style had a very small percentage (with a value in its sub-scales 0.88-0.94 points). Leaders with transformational leadership style demonstrate four prevailing characteristics that include idealized influence, inspirational motivation, intellectual stimulation, and idealized consideration. They are sensitive to the requirements of others and endeavour to realign the existing organizational culture with a new vision[16]. Kanelopoulou (2019) has also demonstrated that the Nursing Service is dominated by the transformational and transactional leadership style, with the passive style lagging behind, while nursing staff expressed a clear preference for the transformational style[17]. Previous study has also stated that Nurse Managers should promote their organization by demonstrating transformational leadership traits as models for the nursing staff [18]. Transactional leadership does have a place in the military, due to the rewards and promotion system [19]. It is noted in this study that Senior Officers surpass in most aspects of the transformational leadership style compared to Senior Officers and the position of Head Nurses/ Hospital Nursing managers/ Hospital Nursing Directors has an advantage in the appearance of "Idealized Attributes", "Idealized Behavior" and the transformational leadership style, as well as the "Management by Exception (Active)" dimension of the transactional leadership style. Transformational leadership has been found to be more associated among higher ranking officers, as lower ranking officers are seen as more passive and less transformational [20].Regarding the marital status of the officers, the number of children influences in various ways the presence of the dimensions of the transformational leadership style, since the children are superior in the dimension "Idealized Attributes", those who have 1-2 children in "Intellectual Stimulation" and the parents of more 2 children in "Individual Consideration", while married people seem to show more of the "Management by Exception (Active)" dimension of the transactional leadership style than single ones. This research finding was that senior-ranked MNOs had a higher level of compassion at work and compassion competence than junior-ranked MNOs. Higher values on the "Intellectual Stimulation", "Management by Exception (Active)", "Inspirational Motivation", "Intellectual Stimulation","Individual Consideration","Contingent Reward" sub-scales of Multifactor Leadership Questionnaire (MLQ-5X) were associated with more compassion at work while higher values of the "Laissez-Faire" and "Management-by-Exception (Passive)" scales were associated with less compassion at work. The Management-by-Exception style, Active and Passive forms, emphasizes the controlling aspects of management, where leaders intervene only when things go wrong [16]. It can be understood that Management-by-Exception is a style of leadership that it is not an intervening one showing the caring of people. Bass and his colleagues[16] stated that the ideal "Contingent Reward" rating must be greater than the benchmark rating of 2. In our study, the mean score of the nurses' responses to "Contingent Reward" was 2.74, which satisfies this criterion. On the other hand, Bass and his colleagues[16] indicate that the mean score of "Management-by-Exception (Passive)" should be less than 1 score and in our study it was 0.93, while the rate of Management-by-Exception style, (Active) sub-scale should be less than 1.5 for effective managers and in our study was 2.47. The score of "Inspirational Motivation", "Individual Consideration" sub-scales in the transformational style and the score in the "Extra Effort" sub-scale were found to be independently related to the dimension "Communication" (assesses a nurse's interpersonal skills) of compassion competence scale with higher values on all sub-scales to be associated with more communication ability. Military nurses need to have good communication and interpersonal skills as well as organising abilities to motivate their subordinates [21]. "Effectiveness" leadership sub-scale were found to be independently related to the "Sensitivity" (a nurse's ability to recognize and react to changes in patients' emotions) dimension of compassion competence scale and higher values on the "Effectiveness" scale were associated with more sensitivity. More specifically, this research has shown increased levels of compassion at work and compassion competence when a transformational and transactional leadership style was performed. According to a Greek study, transformational and transactional leadership are positively associated with communication at workplace [17]. What has been strongly seen in multifactorial analysis is

that communication-as a dimension of compassion- improves with the increase of the "Inspirational Motivation" dimension of the transformational leadership style. The good leadership results (of the MLQ-5X) of this research have been positively related to compassion competence scale and compassion at work- concepts directly related to emotion.

5. Conclusion

Some of the findings of the research were that: a) Leadership style and compassion are closely related and depend in part on the demographic and professional characteristics of the MNOs, while their combination may affect the quality of professional life and care service and b) Compassion at work and compassion competence seemed to improve as the characteristics of the transformational or transactional leadership style increased and the better the leadership outcome, while they decreased as the characteristics of the passive leadership style increased. It is understood from the above that leadership style and compassion are closely linked both to each other and to the demographic and professional characteristics of the MNOs. The appropriate leadership behavior, the promotion of a culture of compassion, the mental empowerment of nurses and the ongoing training in management of traumatic experiences in order to control emotions and improve communication skills need to be integrated into the Nursing Science infrastructure. Therefore, it would be reasonable to have supportive and training programs about leadership, communication and mental support for health professionals both for the students of the Nursing Officers Academy and for active MNOs -such as the Workforce Assistance Program. This could be especially helpful in large Military Hospitals, where MNOs come into contact with death more often and more closely than any other military personnel in peacetime. The results and conclusions of the present study could contribute to the improvement of the quality of life of the staff of the Health Corps of the Army Forces, the enhancement of their mental resilience and, ultimately, the improvement of the health care services provided. It is very important to study the current leadership and mental health trends of the Armed Forces Medical Corps personnel, especially of the younger ones, as they represent the future leadership and the workhorse that will bear the burden of maintaining a high level of care already provided by the Military Hospitals. After all, Plutarch's quote 'Zero of luck, but always of kindness and providence' shows the way of never relying solely on luck, but predominantly on good judgment and foresight.

6. LIMITATIONS

The limitations of the study concerned: a) the requirement for MNOs to exhibit more than two years of work experience in a military hospital, b)   the COVID-19 pandemic, c) the nature and mission of the Armed Forces Health Service, which are related to national security and territorial integrity plans.

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