



Organizational culture among levels of health care services in Crete (Greece)



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1. Introduction

As a concept, organizational culture is multifaceted and it has been studied in fields ranging from social anthropology to industrial-organizational psychology (Schein, 2010) defined as the set of beliefs, values, behavioral patterns, and assumptions shared by members of an organization (Cooke & Rousseau, 1998; Jacobs & Roodt, 2008; Scott, Mannion, Huw, & Marshall, 2003).

Researchers in a variety of academic and professional disciplines have studied organizational culture and its possible impact on performance within organizations' services (Brian, Stanley, Armenakis, & Shook, 2009; Davies, Mannion, Jacobs, Powell, & Marshall, 2007; Freund & Drach-Zahavy, 2007; Xenikou & Simosi, 2006; Zheng, Baiyin, & McLean, 2010).

In health care, organizational culture has been found to play an important part in ensuring the provision of quality services in sectors including nursing, patient and staff safety, job satisfaction and staff turnover, and in the systematic improvement of management procedures (Boan & Funderburk, 2003; Seyda & Ulku, 2007; Jacobs & Roodt, 2008; Randsley de Moura, Dominic, Retter, Sigridur, & Kaori, 2009; Singer et al., 2009). Furthermore, relationships have also been demonstrated between financial performance and organizational culture (Pelletier, 2005; Sanders & Cooke, 2005).

However, establishing the precise relationship between organizational culture type, staff performance and achievement of organization aims was known to be a complex issue and difficult to establish (Marcoulides & Heck, 1993). In addition, it is reasonable to suggest that complex organizations might present multiple cultures, and the interdependent aspects of each subculture within a large organization might not favour planned changes (Cooke & Rousseau, 1998; Viitanen, Willi-Peltola, Tampsi-Jarvala, & Lehto, 2007; Xenikou & Simosi, 2006). This is most likely to happen in hospital settings, since the subdivision into different departments and wards provides a perfect setting for the development of multiple subcultures (Xenikou & Simosi, 2006).

While some cultural attributes may be shared across different subgroups, others may not (Mannion et al., 2008).

Adopting Cooke & Rousseau's approach (Cooke & Rousseau, 1998), this paper examines an organizational culture as a set of specific behaviors, rules or norms (i.e. behavioral norms), which members believe they should adopt to survive and work within such organization. These behavioral patterns can be productive or not and can lead to behaviors and attitudes that determine how the members approach their work and interact with each other. The theoretical model argues that the operating cultures of organizations are not directly determined by their values (or ideal culture), nor are they directly influenced by their missions and philosophies. Rather, the norms and expectations that emerge are directly influenced by the organization's structures, and systems, as well as, by the skills of employees. Detailed analysis of the organizational culture within a specific organization or health care system is necessary in order to identify the dominant type of culture, its impact on objectives and performance, and to highlight possible improvements. Knowing the culture and associated behaviors allow us to assess the capacity, receptiveness and readiness for (cultural) change at an organization, or division, or at team level leading to changes in behavioral norms and the possibility of restructuring a health care service (Mannion et al., 2008).

The aim of the current study was to identify the organizational operating culture in total and within levels of health care organizations (HCO) in Crete as experienced by health care professionals, and compare this with the Ideal Culture (IC) as provided by Human Synergistics International (HSI, 2012). More specifically the objectives of the study were to delineate: i) the dominant culture that best describes Cretan HCO in total and by health care level; ii) the primary and secondary culture styles which best describe HCO in Crete in total and by health care level; iii) the difference between the current operating culture and IC as provided by Human Synergistic International.

2. Methods

2.1. Study design and setting

The current cross-sectional study was conducted in Crete (Greece) in 2008/9. Crete is located at the southern edge of the Aegean Sea

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with a population of 621,340 (Greek population census, 2011). The island has fourteen health centers (HC) (providing primary care), four general hospitals (GH) and one tertiary university hospital (UH), operating within the Greek National Health System (NHS), which is characterized as a mixed system of health care provision financed through salary based NHS providers, prepaid administered payments based on the social and private insurance funds and fee-for-service private practitioners. The total population was estimated to be 3609 health care employees (1420 physicians, 1670 nurses and 519 other healthcare professionals).

In order to achieve a representative sample of professionals regarding the health care coverage of urban and rural populations, the study was conducted at seven of the fourteen public Health Centers, which were randomly selected, four GH and one tertiary hospital (i.e., UH) on the island.

A multistage random sampling strata method was applied based on the professional status of each participant in the study (physicians, nurses and other health care professionals). Power analysis was conducted to estimate the sample size.

Ethical approval was obtained from the Research and Bioethics Committees of the University Hospital of Crete, Greece.

All participants provided written informed consent after complete description of the study. Two-hundred and fifty (250) anonymous questionnaires were distributed to health care services employees (doctors, nurses, allied health care professionals), while two hundred thirty one (231) were returned completed, resulting in a satisfactory response rate (92.4%). The self-completed questionnaire (i.e., the Organizational Culture Inventory® Greek Ed.) was administered in the workplace following their written consent.

2.2. Instrument and procedures

The Organizational Culture Inventory® (OCI®) (Cooke & Rousseau, 1998; Cooke & Szumal, 1993) is an integral component of Human Synergistics' multi-level diagnostic system for individual, group, and organizational development. The OCI® measures "what is expected" of members of an organization or, more technically, behavioral norms and expectations which may reflect the more abstract aspects of culture such as shared values and beliefs. The Organizational Culture Inventory® Greek Ed. (OCI®) (Cooke & Szumal, 1993) was used for the measurement of current operating organizational culture in the specific health care organizations. The OCI® is recognized as one of the most widely used and thoroughly researched organizational surveys in the world. It measures 12 types of culture styles (behavioral norms) which are organized into three general clusters (Constructive, Passive/Defensive and Aggressive/Defensive). The Constructive styles are highly effective and promote individual, group, and organizational performance. In contrast, the Aggressive/Defensive styles have an inconsistent and potentially negative impact on performance and the Passive/Defensive styles consistently detract from overall effectiveness (i.e., Author's Note: The Organizational Culture Inventory and all associated terms (Passive/Defensive, Aggressive/Defensive, Constructive culture) are trademarked by Human Synergistics International).

In the Constructive cluster, members are encouraged to interact with people and approach their tasks in ways that will help them to meet their higher-order satisfaction needs. The Constructive cluster includes the Achievement culture style, in which members are expected to set challenging but realistic goals; Self Actualizing style, in which members are expected to enjoy their work, develop themselves and take new and interesting activities; Humanistic style, in which members are expected to be supportive and constructive; and the Affiliative culture style, in which members of organizations are expected to be friendly, cooperative and sensitive to the satisfaction of their work group.

In a Passive/Defensive cluster, members believe they must interact with people in ways that will not threaten their own security. The Passive/Defensive cluster includes: the Approval culture style, in which

members are expected to agree with and be liked by others; Conventional culture style, in which members are expected to follow the rules and make good impression, Dependent (members are expected to do what they are told and clear all decisions with superiors) and Avoidance culture style in which members are expected to shift responsibilities to others and avoid for being blamed for a mistake. In the Aggressive/Defensive cluster, members are expected to approach tasks in forceful ways to protect their status and security. It includes the Oppositional culture style, in which members are expected to be critical, oppose others ideas and undertake low risk decisions, Power culture style, in which members are expected to take charge and control subordinates, Competitive culture style (members are expected to compete and work against their colleagues) and the Perfectionist culture style, in which members are expected to avoid mistakes but also to work long hours engaged in narrowly defined objectives. All OCI® terminology, style names and descriptions have been described previously in detail.

The OCI® contains 120 items instructing respondents to rate: "To what extent are people expected or implicitly required to ..." (for example "think ahead" or "plan"), with the response options on a Likert 5-scale rating (1 = not at all; 2 = to a slight extent; 3 = to a moderate extent; 4 = to a great extent; 5 = to a very great extent).

The OCI® instrument has been tested for reliability and validity and appears to be a dependable means of assessing the normative aspects of culture (HSI, 2012; Xenikou & Furnham, 1996). It has also been found to have satisfactory levels of internal consistency, as well as convergent and discriminant validity (Scott et al., 2003). The Greek modified version has also been found to have satisfactory internal consistency (Cronbach's α) of the 12 culture styles of OCI® ranging from 0.665 to 0.914 while the overall of OCI was $\alpha = 0.900$ (Rovithis, 2005).

Additionally, Human Synergistics International provides an IC and associated scores for comparison purposes. The IC is based on the responses of 560 individuals associated with various organizations who completed the OCI-ideal®. The 560 respondents answered in terms of how people should be expected to behave to maximize the effectiveness of their organization.

2.3. Statistical analysis

The data obtained with the OCI® tool, when analyzed, help us to identify the areas within the organization which present the greatest opportunity for improvement. This is achieved by identifying gaps between current and ideal percentile scores (current percentile minus ideal percentile). Negative gaps for the Constructive styles and positive gaps for the Passive/Defensive and Aggressive/Defensive styles indicate areas in which the organization is performing better than ideal, and thus areas for cultural change and improvement.

Comparisons between current and typical ideal scores will reveal targets for change within health care organizations. The organizations can then move towards this ideal culture by establishing targets and goals for cultural change (Szumal, 2003).

The OCI® was used to assess health care organizations' current operating culture based on the average (mean) responses of all members who completed the OCI. Unadjusted (or "raw") mean scores for each of the twelve cultural styles from the OCI were converted to percentile scores and were analyzed by Human Synergistics, the copyright holder of the survey instrument.

The cluster that best describes the operating culture of the organizations is the one that has the highest average percentile score (i.e. the highest score when the percentile scores of the four styles within the cluster are averaged together). The results for the total group and for each level of HCO are plotted on a circular diagram or circumplex, which is used to describe operating cultures.

The style that is most extended from the center of the circumplex is the primary style encouraged by Crete health organizations' current operating culture. The style that is the second extended from the center of

the circumplex is the secondary style. The secondary style typically works with the primary style or is expected when the behaviors associated with the primary style cannot be achieved.

Accordingly, a comparison between the profiles of Crete HCO current operating cultures in relation to Ideal scores provided by Human Synergetics International, reveals the percentile gap or difference between the current and Ideal percentile scores. Primary and secondary gaps are identified by subtracting the ideal percentile score from the current percentile score for each of the 12 styles. The style with the greatest absolute difference between current and ideal percentile scores is the primary gap. The style with the second greatest absolute difference between current and ideal percentile scores is the secondary gap.

Descriptive statistics were used to analyze the data. Combined scores are transferred to a circular graph called a circumplex. This forms a visual profile of the organization's culture, in terms of the relative dominance of each of the 12 styles of behavioral norms. The circumplex is generated by comparison to a norming sample, which comprises the results of 921 organizations that Human Synergetics approached as part of their research. Unadjusted or raw total scores are converted into percentile scores, which enable the identification of relative strengths and opportunities for development in terms of 12 behavioral styles.

All statistical analysis methods were carried out using IBM SPSS software (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp).

3. Results

3.1. Descriptive characteristics of 231 participants in the current study

The participants (71 males/160 females) were almost equally distributed in primary (33.3%), secondary (32.5%) and tertiary (34.2%) levels (Table 1). The majority of the responders (44.6%) had been within the organization for more than 10 years, and 77% of the responders were graduates of Universities or Technological Educational Institutes (Table 1).

3.2. Operational organizational culture and primary and secondary cultural style in total

The cluster that best describes health care organizations' operating culture, both in total in Crete, and by health care level

organizations is the Aggressive/Defensive cluster, because it is the one that has the highest average percentile score (89%ile) (i.e. the highest score when the percentile scores of the four styles within the cluster are averaged together). Accordingly, with respect to the specific cultural styles the primary style is Power (95%ile) and Avoidance (95%ile) and the secondary style is Oppositional (94%ile) (Fig. 1).

3.3. Organizational culture and cultural styles by health care level

Concerning the operating culture for organizations at each level of health care the results revealed that all levels (primary, secondary and tertiary) sustain an Aggressive/Defensive culture (91%ile, 86.5%ile and 87.75%ile respectively) (Figs. 2–4). Nevertheless, the analysis of the 12 cultural styles by health care level revealed that, in primary health care organizations, Oppositional is the primary style (98%ile) and Avoidance (95%ile) and Power (95%ile) is the secondary style (Fig. 2). Accordingly, Power (95%ile) and Competitive (91%ile), as a primary style, characterized secondary level HCO of Crete (Fig. 3). Finally, in the tertiary health care level organization, Avoidance (98%ile) is the primary style followed by Power (95%ile) as secondary style (Fig. 4).

3.4. Gap analysis, current culture versus ideal culture

The analysis of the gap difference between the current and Ideal percentile scores (Table 2) revealed lower percentile scores concerning the Constructive culture styles in total and by level of health care services and higher percentile scores for Passive/Defensive and Aggressive/Defensive culture styles.

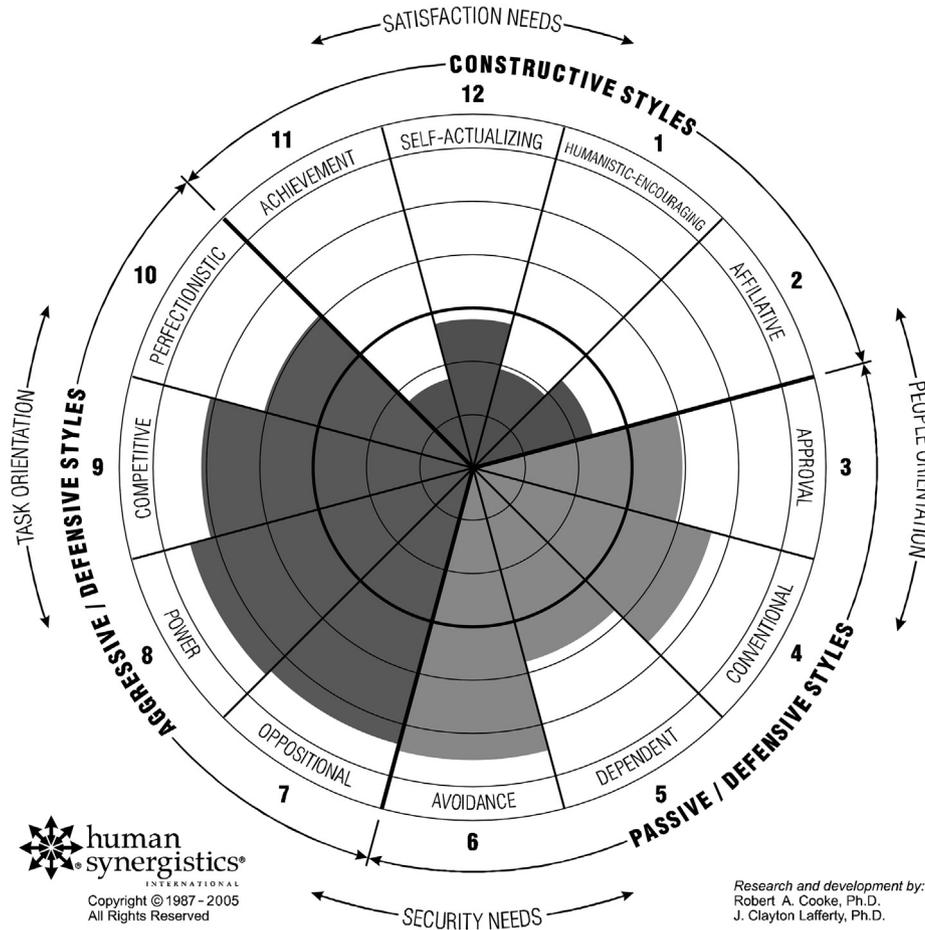
Overall, the primary gap is in the Avoidance culture style (85%ile) and the secondary gap is in the Conventional style (80%ile). The cluster with the largest gaps, on average between the current and ideal percentile scores is the Passive/Defensive cluster.

Concerning the difference according to level of health care, the results revealed that in primary health care level organizations, the primary gap is in the Avoidance culture style (87%ile) and the secondary gap is in the Conventional and Power culture styles (80%ile). In the secondary health care level organizations, the primary gap is in the Conventional culture style (80%ile) and the secondary gap is in the Avoidance and Power culture styles (78%ile). In the tertiary health care level, the primary gap is in the Avoidance culture style (98%ile) and the secondary gap was found in the Humanistic style (–84%ile) (Table 2).

Table 1
Descriptive characteristics of total group (n = 231).

Characteristic	Males n (%)	Females	Total
Gender	71 (30.7)	160 (69.3)	231
Age, years	20–29	33 (20.6)	43 (18.6)
	30–39	65 (40.6)	95 (41.1)
	40–49	47 (29.4)	74 (32.0)
	50+	15 (9.4)	19 (8.3)
Education level	Secondary (e.g. lyceum)	15 (9.4)	22 (9.5)
	Secondary with specialization (e.g. paramedic training)	3 (4.2)	14 (6.1)
	Higher (e.g. university/technological school)	51 (71.8)	127 (79.4)
	Higher with specialization (e.g. MSc or/and PhD)	10 (14.1)	7 (4.4)
Experience, years	Less than 1 year	11 (6.9)	13 (5.6)
	1 to 4	17 (23.9)	38 (16.5)
	5 to 6	14 (19.7)	42 (18.2)
	7 to 10	10 (14.1)	35 (15.2)
	10+	28 (39.4)	103 (44.6)
Health care levels	Primary	54 (33.8)	77 (33.3)
	Secondary	25 (35.2)	75 (32.5)
	Tertiary	23 (32.4)	56 (35.0)

Chi-square test. No significant differences were found between genders.



Constructive (mean 31)				Passive/Defensive (mean 81)				Aggressive/Defensive (mean 89)			
Style	%ile	Raw score	SD	Style	%ile	Raw score	SD	Style	%ile	Raw score	SD
Humanistic	24	32	±8.4	Approval	74	30	±5.5	Oppositional	94	27	±6.7
Affiliative	34	36	±7.9	Conventional	85	32	±5.3	Power	95	32	±5.8
Achievement	21	33	±5.7	Dependent	70	32	±5.5	Competitive	91	29	±7.1
Self-Actualizing	45	33	±5.6	Avoidance	95	28	±7.7	Perfectionistic	76	32	±6.0

SD, standard deviation

Fig. 1. Total health care (n = 231). Research & development by Robert A. Cooke, Ph.D. and J. Clayton Lafferty, Ph.D. Copyright 1987–2015 by Human Synergistics International (Cooke & Rousseau, 1998; Cooke & Szumal, 1993).

Finally, it is worth mentioning that significant gap differences were found between Humanistic and Affiliative in secondary HCO (– 51%ile, – 26%ile respectively) compared to primary (Humanistic – 79%ile, Affiliative – 62%ile) and tertiary health care level organizations (Humanistic – 84%ile, Affiliative – 62%ile) (results not shown in tables or figures). Moreover, significant gap differences were present between health care levels in the Dependent culture style. In the primary health care level organizations, the greatest gap difference was found in the Dependent culture style (68%ile) compared to the secondary and tertiary health care level organizations (37%ile & 49%ile respectively).

4. Discussion

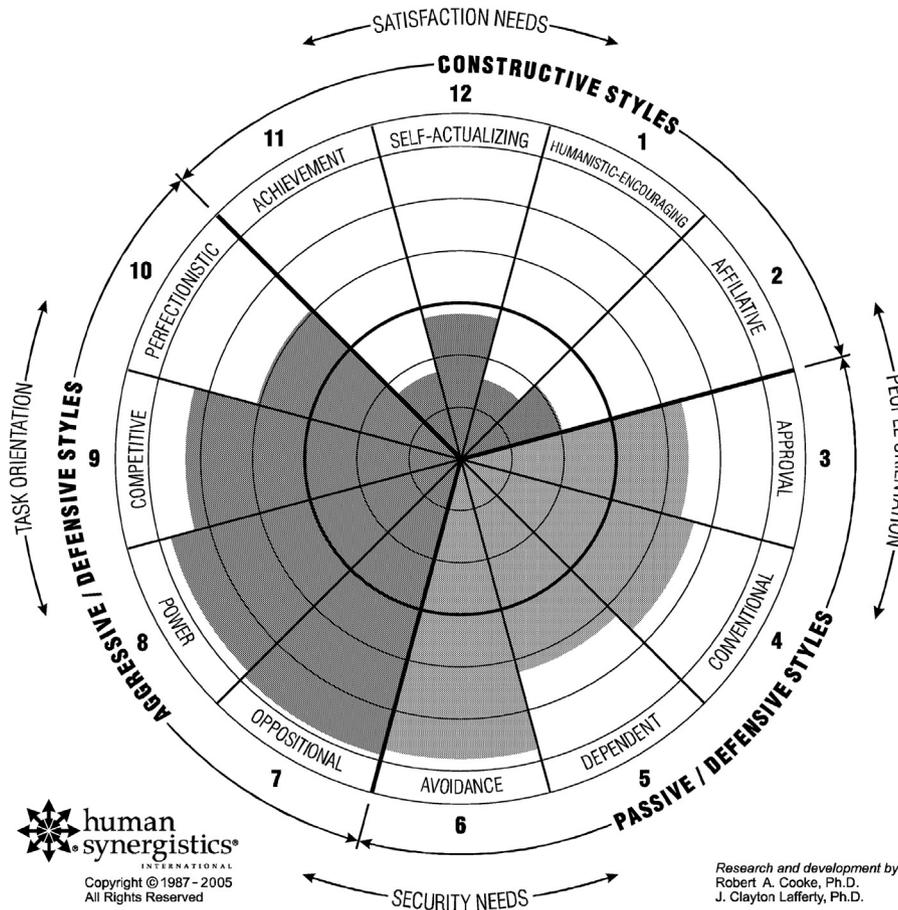
Each health care service has its own organizational culture profile. This profile largely determines its strategic planning and how it

functions within its society. This is also the case with health care services in Greece (Bellou, 2008; Economou, 2010).

The HCO of Crete presents an excellent smaller scale paradigm of an integrated health system such as the Greek NHS, presenting similarities in both dysfunctionality and administrative function (Mossialos, Allin, & Davaki, 2005). The results of the current study revealed that employees in the HCO of Crete independent of health care level, are directly related to the Aggressive/Defensive culture, whereas Constructive styles are the least present (Figs. 2–4).

Overall the primary culture styles are Avoidance and Power, followed by Oppositional (secondary style), without revealing significant variation based on participants' gender or age.

However, the political and economic context of the Greek NHS as well as financial barriers (significant national debt even before the current financial crisis), impose serious and important barriers to a health care system based on an antiquated and inadequate



Constructive (mean 27.8)				Passive/Defensive (mean 85.5)				Aggressive/Defensive (mean 91)			
Style	%ile	Raw score	SD	Style	%ile	Raw score	SD	Style	%ile	Raw score	SD
Humanistic	19	31	±8.8	Approval	81	31	±6.2	Oppositional	98	30	±6.1
Affiliative	26	35	±7.4	Conventional	85	32	±5.4	Power	97	33	±5.0
Achievement	21	33	±6.0	Dependent	79	33	±5.3	Competitive	93	30	±7.3
Self- Actualizing	45	33	±5.1	Avoidance	97	29	±7.0	Perfectionistic	76	32	±6.0

SD, standard deviation.

Fig. 2. Primary health care (n = 77). Research & development by Robert A. Cooke, Ph.D. and J. Clayton Lafferty, Ph.D. Copyright 1987–2015 by Human Synergistics International (Cooke & Rousseau, 1998; Cooke & Szumal, 1993).

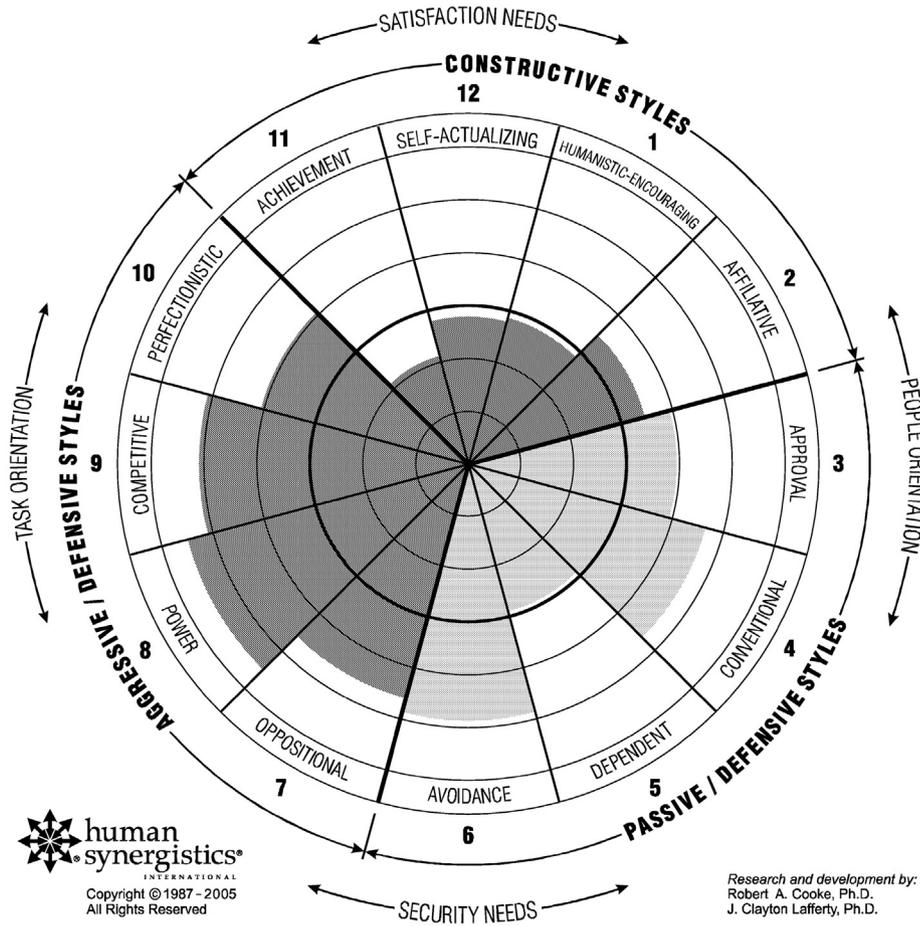
organizational bureaucracy. Thus any previous attempts to reform it were unsuccessful (Mossialos & Allis, 2005).

An Aggressive/Defensive culture encourages competition among members and a reluctance to admit ignorance or lack of skill or experience, leading them to prioritize their own status security above personal improvement (Szumal, 2003).

In organizations governed by this type of culture, members are under pressure to demonstrate individual ability and competence, resulting in poor teamwork and a lack of motivation. The Aggressive/Defensive culture is mainly based on the discovery of errors, and corrects them by promoting an internal competition among the members of the organization. Nevertheless, the initial results in achieving goals in the Aggressive/Defensive culture may, in the long term, reduce the ability of an organization to achieve objectives or adapt to a changing environment (HSI, 2012). In a relative study designed to test hypotheses regarding the impact of culture in 60,900 respondents affiliated to various organizations

(Balhazard, Cooke, & Potter, 2006), results illustrated that dysfunctional Defensive styles have a negative impact on both individual and organizational level performance drivers. Moreover, Passive and Aggressive Defensive behaviors are found to affect communication, role clarity and job satisfaction negatively, while encouraging conformity among employees. Overall, Aggressive/Defensive cultures generally encourage steady reliability rather than outstanding levels of performance and innovation.

In a study that attempted to identify the organizational culture and subcultures within Greek public hospitals (Bellou, 2008) using the Organizational Culture Profile (OCP), the results suggested that the two most prominent characteristics were aggressiveness and supportiveness, whereas the two least prominent, were decisiveness and team orientation. However, the results should be compared with caution, as the OCP instrument is based on a different theoretical background (Rovithis, Linardakis, Rikos, et al., 2016).



Constructive (mean 45.5)				Passive/Defensive (mean 73.8)				Aggressive/Defensive (mean 86.5)			
Style	%ile	Raw score	SD	Style	%ile	Raw score	SD	Style	%ile	Raw score	SD
Humanistic	47	35	±7.3	Approval	74	30	±5.1	Oppositional	84	25	±6.6
Affiliative	62	39	±7.3	Conventional	85	32	±5.5	Power	95	32	±6.3
Achievement	28	34	±5.6	Dependent	48	30	±5.2	Competitive	91	29	±7.1
Self-Actualizing	45	33	±5.6	Avoidance	88	25	±5.6	Perfectionistic	76	32	±5.3

SD, standard deviation.

Fig. 3. Secondary health care (n = 75). Research & development by Robert A. Cooke, Ph.D. and J. Clayton Lafferty, Ph.D. Copyright 1987–2015 by Human Synergistics International (Cooke & Rousseau, 1998; Cooke & Szumal, 1993).

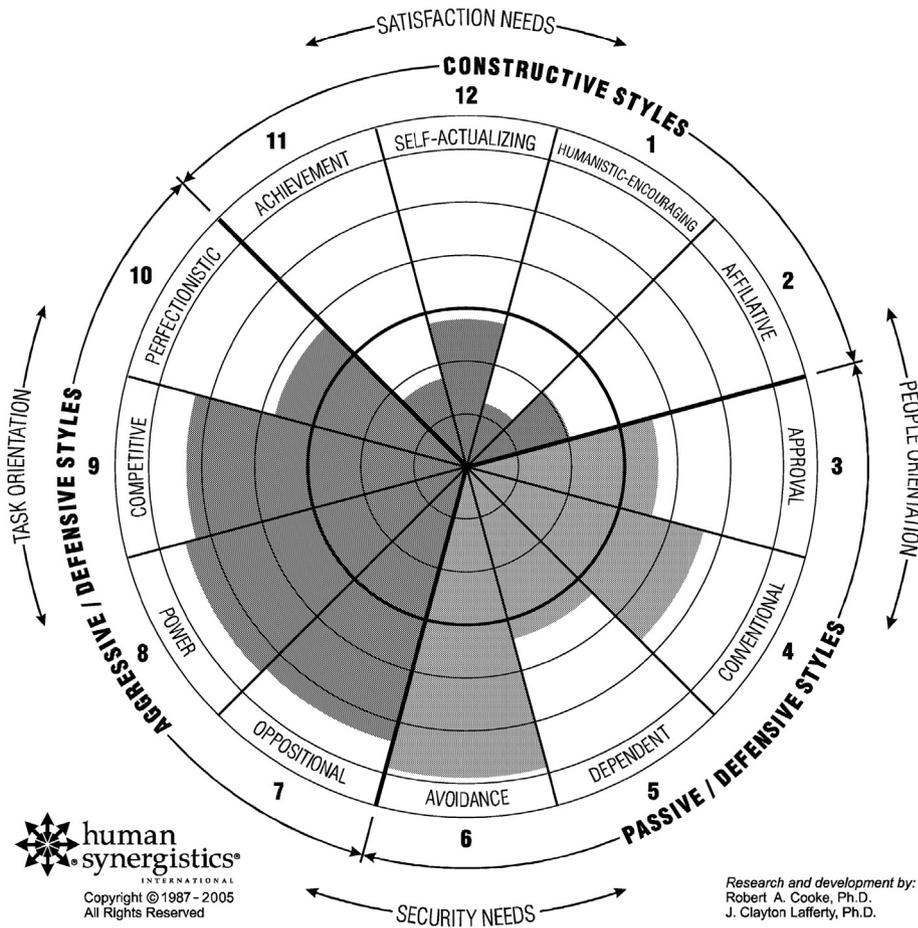
4.1. Organizational culture in the primary health care

It is noteworthy however to point out that in the primary HCO of Crete (i.e. the HC), the dominant culture style of the employees is Oppositional (primary style) followed by Avoidance and Power (secondary styles). The Oppositional culture style and the Power culture style, included in the Aggressive/Defensive cluster, encourage members to prioritize doing what is best for themselves rather than acting in the long-term interests of their organizations. Moreover, employees value confrontation and competition over cooperation and teamwork, while members gain status and influence by being critical. The Oppositional culture style can lead to unnecessary conflict. The constant criticism and conflicts de-motivate employees and encourage avoidance behaviors as they become increasingly frustrated with the prevailing negativism. Organizations with an authoritarian structure based on one's position and status within the system demonstrate a Power culture style. A possible explanation for the culture styles

revealed in the primary HCO of Crete could be the sense of insecurity experienced by these employees in terms of their role as caregivers in primary health centers (Adamakidou & Kalokerinou Anagnostopoulou, 2008; Rovithis, Linardakis, Merkouris, & Philalithis, 2016; Tountas, Karnaki, & Pavi, 2002).

Researchers have expressed serious objections as to whether and to what extent HC in Greece have developed adequate and integrated public health activities (Lionis & Merkouris, 2000) due to the minimal involvement of HC in health education and prevention programs (Adamakidou & Kalokerinou Anagnostopoulou, 2008).

HCOs are understaffed while covering large numbers of populations, and their employees' education addresses mainly disease management rather than prevention and health promotion. This may be the main cause of conflicts encouraging a culture of competition rather than one of cooperation many researchers argue that the expectation that one will fulfill one's professional obligations as well as using the



Constructive (mean 26.5)				Passive/Defensive (mean 77.3)				Aggressive/Defensive (mean 87.8)			
Style	%ile	Raw score	SD	Style	%ile	Raw score	SD	Style	%ile	Raw score	SD
Humanistic	14	30	±8.2	Approval	66	29	±4.9	Oppositional	94	27	±6.7
Affiliative	26	35	±8.4	Conventional	85	32	±5.0	Power	95	32	±6.0
Achievement	21	33	±5.7	Dependent	60	31	±5.7	Competitive	93	30	±7.0
Self-Actualizing	45	33	±6.2	Avoidance	98	30	±7.8	Perfectionistic	69	31	±6.7

SD, standard deviation.

Fig. 4. Tertiary health care (n = 79). Research & development by Robert A. Cooke, Ph.D. and J. Clayton Lafferty, Ph.D. Copyright 1987–2015 by Human Synergistics International (Cooke & Rousseau, 1998; Cooke & Szumal, 1993).

organizations structure and resources, and professional goals such as performing work in a meaningful way, are important issues for healthcare personnel (Sotiriadou, Malliarou, & Sarafis, 2011; Rovithis, Linardakis, Merkouris and Philalithis, 2016).

4.2. Organizational culture in the secondary and tertiary health care level

Concerning HCO in Crete operating at the secondary health care level (public non academic GH), the dominant culture style (primary style) is Power followed by the Competitive culture style. Furthermore, the health care organization operating in the tertiary health care level (UH) in Crete is characterized by Avoidance followed by the Power culture style.

A power culture is a common finding of non-participative organizations. Members of such organizations believe they will be rewarded for controlling subordinates. This type of organizations is less effective since

subordinates resist this type of control, conceal information and minimize their contribution to the least acceptable level (Cooke & Szumal, 1993). Accordingly, competitive behaviors are expressed by employees who work against their colleagues in order to be noticed setting unrealistic standards of performance (either too high or too low). Avoidance of accountability is a common motif. Consequently, hospital staff becomes addicted to this non-accountability culture of not servicing internal or external clients, which eventually leads to an overall decline of the entire institution (Minogiannis, 2012).

Power and Competitive culture styles are included in Aggressive/Defensive operating culture organizations. Organizations with an Aggressive/Defensive culture tend to place relatively little value on people and promoting constitutional competition. In a European cross sectional survey carried out in twelve European countries, data from 24 Greek public general hospitals revealed a particularly high level of nurse burn-out, dissatisfaction, and intention to leave; nearly half described their

Table 2
Gap Analysis by total and by level of health care organizations.

OCI norms	Primary gap %ile	Secondary gap	Tertiary gap	Total gap
Constructive culture				
Achievement	–75	–68	–75	–75
Self-actualizing	–52	–52	–52	–52
Humanistic	–79	–51	–84 ^b	–74
Affiliative	–62	–26	–62	–54
Passive/Defensive				
Approval	70	63	55	63
Conventional	80 ^b	80 ^a	80	80 ^b
Dependent	68	37	49	59
Avoidance	87 ^a	78 ^b	88 ^a	85 ^a
Aggressive/Defensive				
Oppositional	56	42	52	52
Power	80 ^b	78 ^b	78	78
Competitive	60	58	60	58
Perfectionistic	63	63	56	63

Percentile gaps = current percentile – ideal percentile. Negative gaps for the Constructive styles and positive gaps for the Passive/Defensive and Aggressive/Defensive styles indicate areas for cultural change and improvement. Positive gaps for the Constructive styles and negative gaps for the Defensive styles indicate areas in which the organization is performing better than ideal.

^a Primary gap.

^b Secondary gap.

wards as providing poor or fair quality of care, and almost one fifth gave their hospitals a poor or failing safety grade (Aiken et al., 2012).

Greek public hospitals, including University hospitals, lack staff evaluation processes and systems of motivation and reward, gaps which highlight major organizational weaknesses. Thus, the system relies heavily on employee willingness to contribute to the effective and quality performance of the hospital (Bellou, Chitiris, & Bellou, 2005; Rovithis, Linardakis, Merkouris and Philalithis, 2016; Rovithis, Linardakis, Rikos, et al., 2016).

4.3. Gap analysis

Concerning the gap differences between the current and ideal style percentile scores, the analysis revealed lower percentile scores in regard to the Constructive culture styles in total and by level of health care service organizations, and higher percentile scores for Passive/Defensive and Aggressive/Defensive culture styles. The positive gaps in relation to IC styles in Avoidance, Conventional, and Power culture styles in Cretan HCO indicate behavioral styles that should ideally be decreased. The greatest gap in the Dependent culture style in primary Crete HCO compared to secondary and tertiary ones is a result that may be explained by the small number of staff in HC, along with the vertical system of management in which a multidisciplinary approach is not always the issue. On the contrary, in the tertiary health care level organization, the Humanistic culture style (in respect of the IC provided by Human Synergistics International), was found to be extremely low (negative secondary gap) compared to the gaps for the Dependent style found in primary and in secondary Crete health care level organizations. This finding may be due to the increasingly heavy workloads of the staff, dealing with strenuous demands since they are responsible for the delivery of specialized health care services to a large population in Crete (Rovithis, Linardakis, Rikos, et al., 2016).

This finding of the low Humanistic- Encouraging culture style in relation to the other organizations operating at primary and secondary health care level, indicates the need for a shift to a Constructive organization culture. The gap analysis identifies targets for cultural changes. The management of the health care services of Crete in order to produce effective and efficient quality services should discourage employees' behaviors such as Avoidance, Conventional and Power and encourage specific behaviors such as Humanistic. For this to happen there must be a transition from individual to group and team work in

order to achieve high reliability in the services offered by HCO (Baker, Day, & Salas, 2006).

Most studies on organizational change studies stress that the first step must be a vision for change, to be disseminated to all employees via posters, information letters, newsletters, pamphlets, teaching and information seminars that highlight the importance of new behaviors for sustained culture change in conjunction with professional coaching and workshops. In order to develop a sustainable and Constructive organizational culture, an interdisciplinary voluntary working party should be set up (following suitable training), drawn from all the professional groups comprising the health care structures, which will work together with patients towards a common goal and form the driver of change (Clark, 2009; Johnson, Nguyen, Groth, Wang, & Ju Li, 2016; O'Daniel & Rosenstein, 2008). Moreover, senior leader input and presence is necessary to emphasize the importance of the change initiative and to give the initiatives credibility, while the transition to Constructive culture behavioral models must combine a variety of approaches including both formal learning processes and informal learning methods such as discussions, action plans, frequent meetings giving employees the opportunity to exercise the desired workplace behaviors, and discussions on these (Johnson et al., 2016; Laschinger, Leiter, Day, Gilin-Oore, & Mackinnon, 2012; Leiter, Laschinger, Day, & Oore, 2011). Of course, moving from individual thinking to team thinking is not the automatic result of a simplified employee grouping process.

A tool that could contribute to this process is TeamSTEPPS®, an evidence-based teamwork system designed to improve communication, teamwork competencies of leadership, situation, monitoring, mutual support and other teamwork skills among healthcare professionals, and efficiency of healthcare services. This system comprises three phases: Phase I - Assessment, Phase II - Planning, Training, and Implementation, and Phase III - Sustainment, creating a detailed roadmap to change the organizational culture, and providing research and training tools for planning, implementation, monitoring and assessment in order to guide those involved in the organization (employees and health service users) from the original vision to the sustainment of the change, creating a highly efficient teamwork environment. Determining the behavioral models that need to change is the first step towards the selection and training of teamwork instructors to train the other members and reinforce the teamwork of the organization through a wide range of multimedia instructional strategies (Guimond, Sole, & Salas, 2009). In a study carried out in a large community hospital system, results showed a positive correlation between the TeamSTEPPS training system and team awareness among the staff (Weaver et al., 2010).

HCO must create a working environment where all employees share the same leadership experience, work on the basis of the same scientific criteria and produce measurable objectives based on the same behavioral models. In order for an organization to be fully engaged, it requires all stakeholders – leaders, physicians, employees and patients to be involved (Studer, Hagins, & Cochrane, 2014).

Minogiannis (2012), stated that, the hierarchic administrative model of health care structures in Greece, both at departmental level and throughout the whole organization, needs to be replaced by work contracts, with clear measurable aims that will encourage teamwork and form the basis of human resources management. Staff evaluation, achievement of objectives and participation in employee reward schemes must be closely linked to staff performance (Costello, Clarke, Gravely, D'Agostino-Rose, & Puopolo, 2011). Several HCO in Canada, the US and other countries, in order to achieve engagement of organization members while improving quality of services, installed an execution framework called Evidence-Based Leadership (EBL) developed by the Studer Group, an outcomes-based healthcare performance improvement firm, which allows organizations to restructure and achieve high-quality, high-performance services while reducing the cost of those services. Organizational change within this framework is based on three overarching elements of engagement, alignment, action, and accountability (Studer, 2013; Studer et al., 2014). Communication is a basic element of these changes,

starting from management and flowing down to all professional groups and patients – health service users, ensuring that the aims and priorities of the organization are understood by all and supporting the mission, vision and values of the organization (Burston, Chaboyer, Wallis, & Stanfield, 2011; Lok, Westwood, & Crawford, 2005).

The effort to change organizational culture in Cretan health care structures can also be reinforced by the establishment of a successful motivation policy that relies on effective diagnosis of the needs of employees and the choice of appropriate leadership styles arising from the various existing theories. Behaviors that are recognized and rewarded are repeated. An excellent example that costs nothing but makes all the difference in employees adopting change and suggested behavioral models is provided by a Studer Group study examining the common characteristics of collaborating organizations that were most successful in hardwiring excellence. Results showed that after Rounding For Outcomes, the next most important tactic to drive employee retention and patient satisfaction was ThankYou Notes (Studer et al., 2014).

Nevertheless, we should not underestimate the distinctive features of professional groups and the complexity of the organizations that may give rise to objections if it challenges employees' value systems, and that it is better to achieve and sustain this change through gradual alteration of the existing behaviors and the processes to be applied (Ferlie, Montgomery, & Pedersen, 2016).

By anticipating sources of resistance to change and developing strategies as those mentioned above, health care managers will effectively improve organizations' ability to adopt successful integration into an ever-changing health care environment requiring quality and efficiency in every health care service offered.

5. Conclusions

In conclusion, the measurement of the existing organizational culture in health care services in Crete revealed the Aggressive/Defensive culture to be dominant within the three levels of health care services. The current analysis of organizational culture styles could potentially facilitate our understanding of those behavioral norms which have a direct impact on the performance and effectiveness of the health care organizations. Moreover, future studies would be interesting in regards to the financial crisis and how it pertains to changes in the culture of Cretan health care organizations. The financing of healthcare can be a stimulus for change. When there is a lack of funds, change is inevitable in order to become efficient and effective and to achieve desired organizational culture changes. The financial crisis affecting Greece could prove the stimulus for a restructuring of health care funding, with new payment models and incentives redistributing funding from fee to service to include bundled payments, capitated payments and global budgets (Ferlie et al., 2016; Minogiannis, 2012). The understanding of the organizational culture of health care structures that emerges from this study and the recording of behavioral models in need of change are the first step in assisting administrators to plan targeted strategies in order to achieve sustainable desired change in care delivery, hopefully resulting in improved outcomes.

Acknowledgements

We would like to thank all of the health care professionals who participated in this study. We truly appreciate their time and effort.

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