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SYSTEMATIC REVIEW

Health care provider's Organizational Culture Profile: a literature review

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ABSTRACT

Purpose: The objective of this critical review was to establish a synthesis of the literature of organizational culture and to assess whether a single dominant organizational culture exists in public hospitals.

Data sources: A search was contacted in four electronic data bases (MEDLINE, EMBASE, CINAHL and SCOPUS) using terms ''Organizational culture'' AND "Health care sector".

Study selection: Three inclusion criteria were applied: 1) the report of an original research study, 2) a study focus on evaluation of organizational culture and 3) a conceptualization of culture.

Data extraction: Data was extracted by two reviewers independently.

Results: Twelve studies met inclusion criteria. Although most studies were cross-sectional in design and variability was noted with respect to assessment instruments, all suggested a significant association between a strong organizational culture and employee and patient satisfaction. Operating culture found to be inconsistency within public and private healthcare settings as well as within health care professionals.

Conclusion: While an association between organizational culture and healthcare performance was found, some of the relationships were weak.

Keywords: Organizational culture, healthcare sector, employee's values

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INTRODUCTION

An increasing body of evidence has indicated that successful companies--those with sustained profitability and above-normal financial returns--are characterized by certain well-defined conditions and a highly

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motivated workforce, with shared values and assumptions [1-4]. Peters and Waterman[5] found that successful organizations possess certain cultural traits of "excellence". All of these companies have a major distinguishing feature that they all highlight as a key ingredient for their success: their readily identifiable, organizational culture[6]. Although, organizational culture and climate are conceptually related, they are two distinct concepts. Organizational culture refers to a wide range of social phenomena, including an organization's customary dress, language, behavior, beliefs, values, symbols of status and authority, myths, ceremonies and rituals, and modes of deference and subversion; all of which help to define an organization's character and norms[7-9]. Daft[10] defines culture as "the set of guiding beliefs, understanding, and ways of thinking that is shared by members of an organization and is taught to new members." On the other hand, organizational climate reflects the employees' perception of the organizational culture[11]. Daft[10] explained that organizational culture serves to critical functions: internal integration and external adaptation.Regardless of the size, industry, or age of the organization, organizational culture affects many aspects of organizational performance[12], including financial performance, customer and employee satisfaction, and innovation[13,14]. Ouchi[15] presented a similar relationship between organizational culture and increased productivity, while Deal and Kennedy[16] argued for the importance of a "strong" culture in contributing towards successful organizational performance. Additionally, a supportive organizational culture is often cited as a key component of successful quality improvement initiatives in a wide variety of organizations, including health care[17-18]. A hospital's culture is reflected by what is valued, the dominant managerial and leadership styles, the language and symbols, the procedures and routines, and the definitions of success that make a hospital unique. In the health care organizations physicians and nurses are generally familiar with the concept of culture and its importance in the provision of individualized patient care. Therefore, organizational culture has been considered as a variable influencing hospital performance that contribute to quality of care[19-23], and a tool that can be used for better nursing[24-27], medical[28-29], patient[30-32], and system outcomes including improved workplace environments[9, 33-35], and patient and staff safety. Moreover, it has been suggested

that regardless of individual's motivation, capabilities and resources, a supportive work culture may have significant impact on the feelings towards one quality of working life as well as on health consequences in this health sector[29]. Two approaches have been suggested in order to describe differences in organizational culture between organizations; either a typology or a dimensional approach[36]. Harrison[37] adopting the typology approach, suggests four main types of organizational culture: power; role; task/achievement; and person/support. Deal and Kennedy[16] also have proposed four generic culture types as determined exclusively by one aspect of organizational behaviour – the degree and speed of feedback on whether decisions or strategies are successful. Cameron and Quinn[38] characterized organizational cultures as clannish, hierarchical, market-oriented, or adhocratic. On the other hand, adopting dimensional scales Hofstede[1] analysed cultural differences between nationalities and suggested that culture has four dimensions: power distance; uncertainty avoidance; individualism/collectivism; and masculinity/femininity[39]. The designers adopting a dimensional approach described culture by its position on a number of continuous variables using a Likert-type scale for respondents to indicate their level of agreement with predefined statements[40-42]. Although, there has been an upsurge of interest in the quantitative measurement of health care provider's behavioural patterns[43-55], the overall organizational culture profile remains poorly evaluated, in the health care environment. To the best of our knowledge, only two reviews of organizational culture research in nursing were published. In 1996 Mark and his colleagues[56] including 12 studies, reviewed methodological and conceptual issues in nursing organizational culture research. More recently, Scott-Findlay and his colleagues[57] updated Mark's review and demonstrated an increasing development in nursing organizational culture research. Specifically, they included twenty-nine studies pinpointing a variation in cultural definitions as well as a larger pool of cultural instruments in line with Mark's review. Moreover, researchers pointed an inconsistency in use of organizational culture term using organizational culture and climate interchangeably. Therefore, the aim of this critical review is to provide a further insight in the organizational culture research in heath care sector, specifically

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in public hospitals as the unit of analysis. Furthermore, we aimed to establish a synthesis of the literature measuring co-existing sub-cultures within hospitals.

Methods

Data sources

A literature search was contacted between January 1998 and December 2008 by using the following electronic data bases; MEDLINE, EMBASE, CINAHL, SCOPUS and Cochrane Library. These databases combine coverage of the majority of major medical, nursing and management journals. Dissertations and "grey literature" (e.g. conference proceedings) were not included in the search. Grey literature is relatively inaccessible to researchers and, therefore we suggested that it has less impact than published studies. Furthermore, meta-analysis of data was not feasible as a result of differences in reporting culture measures and perspectives. The inclusive terms "organizational culture" OR "organizational behaviour" OR "organizational culture" AND "hospital" OR "nurses" OR "physicians" OR "work environment" OR "work culture" were used in the searches.

Study selection The search generated 5.698 titles and abstracts. The first author electronically assessed the titles and abstracts using the following inclusion criteria: i) prospective research study published during the past 10 years (1998–2008); ii) in English; iii) focus on defining the type of organizational culture using a clear definition of it. The objective of this critical review was to assess whether and by how much a single dominant organizational culture exists in public hospitals. Using the previous inclusion criteria, only twelve articles remained in the data set.

Data extraction

Data for the studies was extracted by two reviewers independently using a pro-forma designed for the purpose. Initially, two reviewers read brief study details (title, abstract) of papers identified with the search strategy. Those not relevant were excluded at this stage. Then, both reviewers assessed studies that appeared to meet the inclusion criteria to determine acceptance in the review. Any disagreements were resolved by discussion. The information collected from each study[43-53, 55] included aim and setting of study, sample, study design and findings.

Results

The outcome of the search revealed 12 studies in relation to define the

dominant organizational culture in public hospitals. Table 1 describes the research methods for the eligible studies. In organizational culture research, the appropriate definition of the "unit of analysis" is an important methodological issue. The dilemma is that organizational culture can be conceptualized as a psychological variable with the data collected at the individual level or it can be understood as a group or organizational level variable[54]. In the latter case, the individual level data are aggregated to a higher level. The authors of studies included in this review analysed their data at the unit or organizational level. The samples ranged from 120 health care professionals [physicians, nurses and administrative staff] to almost 2,065 healthcare providers and the studies were geographically diverse. The increase in the number of studies published between 2004 and 2008 is a reflection of the growing interest in organizational culture as an important element of successful organizational initiatives, including quality of services. All researchers used cross-sectional designs, and response rates varied across studies, and ranged from 36% to 90%. Furthermore, most of the investigators employed validated instruments to assess organizational culture; however its scientific properties varied across studies. Each of the studies are discussed below.

Bellou[43] aimed to recognize the operating culture in 20 out of 107 public hospitals among a sample of front-line employees [n=1,000], which included a large number of doctors, nurses and administrative staff. Using the organizational culture profile instrument[42], this researcher found that, the most prevalent characteristics of culture are aggressiveness and supportiveness, whereas this operating culture does not appear very strong. After examining for potential subcultures Bellou[43] concluded that significant differences revealed based on age, job position and tenure in position whereas gender, occupation and type of employment do not affect significantly employee perceptions of culture.

In a recent study, Bosch *et al.,* [44] reported on data originally collected in 2004 from health care professionals [n= 146] in 40 primary care practices. The investigators examined the relationship between specific types of organizational culture, team climate and quality of care provided to patients as well as clinical outcomes. Organizational culture was assessed using the Competing Values

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Framework, while team climate among members of the practices was evaluated by the Team Climate Inventory. Clinical outcomes were HbA1c level, systolic blood pressure and total cholesterol levels and clinical performance was measured by a sum score of ten process indicators of diabetes care quality. The researchers showed that primary care organizations characterized by a strong group culture and they went on to indicate that a strong group culture was negatively associated to the quality indicators for managing care well, whereas a more balance culture among the different types of culture [group, hierarchical, developmental and rational] was positively correlated to diabetes care quality. No associations were found according to the study between organizational culture, team climate and clinical patient outcomes. Another study by Stordeur and colleagues[45] conducted involved a large sample of nurses [n=1.175] employed in 12 hospitals. Using a questionnaire, including perceptions of job demands, work schedules and organizational climate, researchers aimed to identify structural and managerial characteristics of low- and high-turnover hospitals. The investigators found that whereas selected indicators of hospital structure were comparable between attractive and conventional hospitals, profiles of nurse perceptions towards the organizational features and climate were significantly different. The authors concluded that attractive hospitals with selected organizational characteristics succeeded in nurse attraction and retention.

A 2003 paper by Mallak *et al.,* [46] studied culture, built environment and outcome variables in a healthcare provider organization using a composite of existing scales. The authors supported that organizations with stronger cultures tend to achieve higher performance and potentially improved clinical outcomes than those with weak cultures. According to the study, job satisfaction and patient satisfaction were found to be significantly and positively correlated with culture strength. Culture strength referred to the extent of agreement with statements concerning the hospital's culture. The authors, also found that strong cultures result from consistent, visible role modeling and leadership, consistent feedback on performance – positive and negative – to ensure people known what is allowed and what is not, constant communication about what is important in the organization, and sharing stories where the strength of the organization's culture played a critical role in a patient's, staff's or visitor's experience.

A previous work by Mackenzie[47] focused on staff employed on four strategic business units of the Combined Healthcare NHS trust. A sample of 120 employees was surveyed on 12 dimensions of organizational culture which were measured using quantitative and qualitative methods. The researcher concluded that a high level of teamwork was enjoyed by all respondents. The majority of respondents felt they provided high quality care, which comprised both listening to consumers and involving them in planning their care. According to the results, staff considered the following organizational values: providing quality care, innovative practice, the development of staff, the achievement of goals and targets, satisfying consumers and competing effectively. In a sample of 530 executive employees recruited from six organizations in the Queensland public sector, Parker *et al.,*[48] conducted a mail-out survey of employees with managerial responsibilities to determine whether organizational culture reflected the emphasis on group, developmental and rational culture, using a later version of an instrument by Zammuto and Krakower which measured culture from a competing values framework. Contrary to the expectations, authors found that four out of six departments were dominated by a hierarchical or internal process model of organizational culture involving a commitment to rules and attention to technical details. The findings are suggestive of the proposition that culture in the public sector remains aligned with a traditional bureaucratic model. A possible explanation for this finding according to the authors is that public organizations are fundamentally different from private organizations and will, therefore, remain oriented towards a traditional model involving a hierarchical culture.

Regarding financial performance, a study conducted by Rondeau *et al.,* [49] suggested that culture can have a significant role in the prediction of strategic choices that hospitals make in response to fiscal distress. The findings also suggested that healthcare organizations with different operating cultures tend to take different approaches in response to reductions in their funding. A recent study by Gregory *et al.,*[50] provided a further insight into the relationship between organizational culture and organizational effectiveness by exploring how and why this relationship exists. Organizational culture was measured by surveying members of the top management team

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from 99 hospitals across USA. They found that culture impacts on employee attitudes (employee satisfaction and physician satisfaction) and those attitudes have an influence on organizational effectiveness as measured by patient satisfaction and controllable expenses. Although both group and balance culture predicted patient satisfaction, neither type of culture had a direct impact on controllable expenses. Zazzali and colleagues[51] measured the organizational culture within 52 physician group practices involving 1.593 physicians across the USA through the Competing Values framework. The findings indicated that more positive physician satisfaction toward key aspects of their practice was associated with stronger group culture and negatively associated with groups dominated by a hierarchical culture. Furthermore, the researchers suggested that culture represents an important feature of group practices that influence the attitudes of physicians towards the organizations in which they work.

In 2007 Seren *et al.,* [52] reported on the effect of organizational culture and healthcare professionals' attitudes on change. Unlike with private hospitals where collaboration culture was most dominant, power culture dominated in public hospitals. Savic and Pagon[53] investigated in a cross-sectional study in Slovenia how nurses and physicians perceive organizational culture. The authors found out that physicians and nurses had significantly different scores on current culture type, however there was no significantly differences between physicians' and nurses' scores on preferred culture type both of them favoring the culture of internal focus, stability and control. Moreover, there were significantly differences between nurses and physicians in flexible and control organization, with nurses favoring flexible organization and physicians favoring control organization.

Norwiski and her colleagues[55] reported initial results from a 4-year project examining changes in organizational culture following adoption of a single electronic health record system. Contrary to expectation, their findings from baseline and 12-month follow-up data suggest that employees perceived the organizational culture as becoming more hierarchical and rational. May be cultural readiness for an innovation is the key requirement for hospitals when preparing for IT infrastructure[58].

Discussion

To our knowledge, this is the first critical review of assessing whether and by how much a single dominant organizational culture [the underlying assumptions that

inform beliefs and guide behaviours in an organization] exists in public hospitals. Research has indicated the importance of identifying organizational culture as well as characteristics of any co-existing subcultures as a prerequisite for organizational change or quality of services[43, 52-53]. A primary first step to organizational culture change is to assess the organizational culture[54] whereas, hospitals with strong prevailing organizational culture tend to achieve higher performance and potentially improved clinical outcomes than those with weak cultures[46]. Culture strength referred to the extent of agreement with statements concerning the hospital's culture, whereas operating culture referred to the existing or established culture.

With respect to the type of organizational culture five out of twelve studies unveiled the dominant culture of the healthcare providers. Bellou[43] showed that aggressiveness and supportiveness were the two most prominent cultural characteristics in public hospitals; however the operating culture did not seem to be very strong. In another study[52] identifying the organizational culture in private and public healthcare sector, power culture was found to be the most common culture in public hospitals, while the cooperation culture was the most evident culture in private hospitals. On the contrary, Parker *et al.,* [48] found that a hierarchical or internal process model of organizational culture involving a commitment to rules and attention to technical details dominated public sector. In primary and group practice settings the review findings revealed a strong group culture[44,53]. In a study in primary care setting[44] a strong group culture was negatively associated to the quality of diabetes care provided to patients, whereas a more 'balanced culture' was positively associated to diabetes care quality. No associations were found between organizational culture, team climate and clinical patient outcomes.

Regarding employee satisfaction we did find evidence for a significant and positive correlation with culture strength[46, 51-52]. According to a recent study[54], examining the organizational culture among nurses in Korea, the consensual culture which is a part of Korean culture had a positive effect on nurses' job satisfaction. Consensual culture includes spending time maintaining group harmony, encouraging and mentoring staff.

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Patient satisfaction is a vital effectiveness indicator, as it measures the quality of the service that hospital provides to its patients. Maintaining financial viability and providing quality care are the two critically important objectives for health care sector[49]. According to a recent study by Gregory *et al.,* [50] culture has an influence on organizational effectiveness as measured by patient satisfaction. Large health service organizations with matched structures, caseloads, profiles and environments may have different results and varying successes depending upon their cultural characteristics[58]. Furthermore, Mallak *et al.,* [46] showed that patient satisfaction was found to be significantly and positively correlated with culture strength.

To conclude, we found heterogeneity for the overall research outcome regarding the existence of a strong culture in hospitals as well as a lack of uniform definition as most studies used different assumptions for organizational culture. Moreover, in most studies different qualitative instruments were used to measure organizational culture dimensions as well as its scientific properties strongly varied. Furthermore, in most studies, organizational culture was studied in relation to other factors such as job satisfaction[59-60], patient satisfaction and safety[61-62] or organizational changes[63].

Our results indicated that the majority of public hospitals have weak organizational cultures even though strong cultures offer compelling benefits to hospitals as higher employee satisfaction and potentially improved clinical outcomes[46]. Since a strong culture is associated with positive benefits, it is prudent for a public hospital to build a strong culture. And how does culture become strong? Culture strength is resulting from consistent, visible role modelling and leadership and is certainly something we can observe in a hospital as nearly all employees will respond the same way. There are strengths and limitations to this body of research evidence. Strengths of this research review include the sample populations studied. Since culture is, by definition, a collective phenomenon, most researchers examined culture at group level, even where the unit of collection is the individual. Moreover, a wide range of valid and reliable quantitative instruments used in the studies measured culture.

There are a number of limitations of this review. While extensive effort was made to conduct a comprehensive review, eligible studies may have been missed.

The majority of studies have surveyed only front-line or top managers. Although, this is an important group in terms of formal leadership roles, to assess organization's culture, such an approach clearly results in only a partial view of the organizational culture. The most difficult but the most effective method in assessing culture would be best accomplished by surveying all staff members of an organization. Also, an adequate sample to allow subgroup analysis alongside whole organization analysis is another important sample issue. Despites these limitations, this review provides support that there is a growing body of evidence assessing organizational culture in healthcare performance. In an era of increased pressure toward efficiency and cost containment, the most important issue is how will a hospital be able to create a visible culture to others in order to ensure organizational survive and commitment and loyalty among professionals[64-65].

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ANNEX

Table 1: Summary of the research methods of the eligible studies

STUDY	*Setting, Sampling, Response rate*	*Design of study*	*Operational Measures*	*Findings*
V. Bellou[43]	**Setting:** 20 public hospitals in Greece **Sample:** 749 responses out of 1.000 front-line employees [35.2% doctors, 45.6% nurses and **Response rate:** 74,9 %	A cross-sectional analysis	**Organizational Culture Profile (OCP)** [42] It is composed of 54 values and can be used to provide overall value profiles of organizations or individuals. It is based on Q-sort methodology; responders sort items into nine categories ranging from the least to the most characteristic of their organization.	• Employees in Greek public hospitals were found consider attention to detail, outcome and team orientation to be the least prevalent cultural characteristics of their employing organizations. • After checking for potential variations in the way that employees view the operating organizational culture, significant differences were revealed based on age, job position and tenure in position. Nevertheless, gender, occupation and type of employment relationship do not seem to affect employee perceptions of culture.
M. Bosch et al. [44]	**Setting:** 40 primary care practices in the Netherlands **Sample:** 146 health care professionals [general practitioners , practice nurses and practice assistants] **Response rate:** 63%	A cross-sectional analysis	**Competing Values Framework** **(CVF)** Adopts a typological approach for understanding an organization's culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: 1. organization's focus – internal or external environment, 2. organization's structure – preference for flexibility or control. **Team Climate Inventory**[67]	• A strong group culture was negatively associated to the quality of primary care provided to patients, whereas a more 'balanced culture' was positively associated to diabetes care quality. • No associations were found between organizational culture, team climate and clinical patient outcomes.

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			It is 14 item version answered on 5-point Likert scale. The underlying theory argues that group innovations often result from team activities which are characterized by 1) focusing on clear and realistic objectives in which the team members are committed (vision), 2) interaction between team members in a participative and inter-personally non-threatening climate (participative safety), 3) commitment to high standards of performance and, thus, preparedness for basic questions and appraisal of weaknesses (task orientation), and finally, 4) enacted support for innovation attempts including, e.g. cooperation to develop and apply new Ideas (support for innovation).	
S. Stordeur, et al. [45]	**Setting:** 12 hospitals in the Belgium **Sample:** 1.175 out of 2.065 registered nurses **Response rate :** 53.8% in attractive hospitals and 54.5% in conventional hospitals		A questionnaire covered demographic data and work situations of nurses, as well as their prospects and intentions. Several scales were used to describe nurses' perceptions in the following domains: physical health-related factors, job demands and stressors, work schedules, organizational climate and work adjustments antecedent to turnover.	• Structural characteristics did not differentiate attractive and conventional hospitals, but employee perceptions towards the organization differed strikingly. • Differences were observed for risk exposure, emotional demands, role ambiguity and conflicts, effort-reward imbalance and the meaning of work, all in favour of attractive hospitals. • Job satisfaction and commitment were higher in attractive hospitals, whereas burnout and intention to leave were lower.
L.A. Mallak et al.[46]	**Setting:** A main		**Competing Values Framework**	• Organizations with stronger cultures tend to achieve

	hospital and a satellite hospital in USA **Sample:** 432 responses.		Adopts a typological approach for understanding an organization's culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: 1. organization's focus – internal or external environment, 2. organization's structure – preference for flexibility or control.	higher performance and potentially improved clinical outcomes than those with weak cultures. • Strong cultures result from consistent, visible role modeling and leadership, consistent feedback on performance – positive and negative – to ensure people known what is allowed and what is not, constant communication about what is important in the organization, and sharing stories where the strength of the organization's culture played a critical role in a patient's, staff's or visitor's experience.
S. Mackenzie [47]	**Setting:** NHS Trust in UK **Sample:** 120 administrative staff **Response rate :** 80%		Qualitative data collection techniques in the form of in-depth interviews. A questionnaire was constructed comprising 76 statements covering the 12 dimensions of culture.	• A high level of teamwork was enjoyed by respondents. • Staff showed loyalty to the organization and to their clients. The majority of respondents felt they provided high quality care, which comprised both listening to consumers and involving them in planning their care. • They were not clear about the organization's mission and were not clear about the future direction of the organization. • The following were considered by staff to be the organizational values: providing quality care, innovative practice, the development of staff, the achievement of goals and targets, retaining business and acquiring business, satisfying consumers and competing effectively.
R. Parker and L. Bradley[48]	**Setting:** 6 organizations in Queensland public sector in Australia **Sample:** 191 out of 530		A questionnaire utilized a later version of an instrument published by Zammuto and Krakower which measured culture from Competing Values Framework.	• Four out of the six Departments were dominated by a hierarchical or internal process model of organizational culture. • In Department E, the internal process model and the rational goal model were equally dominant. • Only in Department F was the internal process model

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	managers. **Response rate:** 36%			not the most dominant cultural model. In Department F, the internal process model was less dominant than the rational goal model. • None of the demographic variables was related to perceptions of the current culture for any of the models.
K. V. Rondeau and T. H. Wagar[49]	**Setting:** 1.014 Canadian hospitals **Sample:** 441 responses, out of 1,014 chief executive officers. **Response rate:** 43.5%.		A modified 12-item, self-administered questionnaire was used to assess organizational culture, based on a framework proposed by Zammuto and Krakower A modified 12-item, self-administered questionnaire based on a framework proposed by Zammuto and Krakower and the competing-values typology. Survey respondents were asked to indicate, using a six-point Likert scale, the degree to which they agreed or disagreed with the prevalence of 12 normative statements that describe potential organizational value propositions for their organizations. Four unique and distinct organizational cultures types can be identified: 1 consistency and cultures	• A strong culture has a significant impact on distress.

			2 involvement; 3 mission also; and 4 adaptability cultures.	
B. Gregory et al.[50]	**Setting:** 99 hospitals across the U.S.A. **Sample:** 354 responses, out of 677 managers. **Response rate:** 52.3%.		**Competing Values Framework** Adopts a typological approach for understanding an organization's culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: 1. organization's focus – internal or external environment, 2. organization's structure – preference for flexibility or control.	• Although both group culture and balanced culture predicted patient satisfaction, neither type of culture had a direct impact on controllable expenses. • Culture influences organizational effectiveness as measured by patient satisfaction and controllable expenses.
J. L. Zazzali et al.[51]	**Setting:** 52 medical groups affiliated with 12 integrated health systems from across the U.S.A. **Sample:** 1,593 physician respondents **Response rate:** 38.3 %.		**Competing Values Framework** Adopts a typological approach for understanding an organization's culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: 1. organization's focus – internal or external environment, 2. organization's structure – preference for flexibility or control.	• More positive physician job satisfaction was associated with stronger group culture and negatively associated with groups dominated by a hierarchical culture. • These results have implications for the design and effectiveness of physician group practices
S. Seren and U. Baykal[52]	**Setting:** 8 hospitals (4 private and 4 public) in Istanbul **Sample:** 570 participants out of 3,067 employees (physicians		A 28-item Culture scale developed by Erkmen and Ordun, and attitude toward change scale were used for data collection. The scale was chosen because of its previous applications in service sectors and the suitability of its culture type	• Power culture was most dominant in public hospitals that have received quality certificates and collaboration culture dominated in private hospitals. • Overall, employees' attitudes toward change were positive. • This study suggested that organizational culture

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	and nurses)		classification for hospitals. Its four subscales are power culture, role culture, competition culture, and cooperation culture.	should be defined before initiation of change processes.
Savic BS and Pagon M.[53]	**Setting:** 14 Slovenian hospitals **Sample:** 106 physicians and 558 nurses **Response rate:** 44.3 %.	A cross-sectional study	**Competing Values Framework** Adopts a typological approach for understanding an organization's culture. A four-cell model of value systems (clan, adhocracy, hierarchy, market) within two axes, reflecting different value orientations: 1. organization's focus – internal or external environment, 2. organization's structure – preference for flexibility or control.	• Physicians & nurses favored a culture of internal focus, stability and control • There is a lack of support for individual work and teamwork, and employee growth
Nowinski CJ et al.[55]	**Setting:** 3 hospitals in USA **Sample:** 621 employees at baseline and 471 at 12-month follow-up **Response rate:** 38%.		**The culture and quality questionnaire [CQQ]** It is a two part, self administered questionnaire. The first part is a 20 item instrument, participants distribute 100 points among four descriptions that represent different culture environments- reflect group, developmental, hierarchical or rational culture types. Scores reveal a culture profile for the organization. The second part is a 58 item instrument to measure quality improvement implementation within the organization.	• More hierarchical organizational culture at 12-month follow-up.