Virtuousness and effectiveness in hospitals: The moderating role of organizational culture

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Abstract

There are reasons to expect that virtuousness in organizations is associated with positive performance, especially within the context of hospital industry**.** However, there is a lack of empirical research examining the mechanisms that may explain the relationship between virtuousness and nurses' effectiveness in different hospitals' culture in developing countries. Therefore the relationship between two variables; virtuousness and effectiveness; and the role of organizational culture as a moderator in this relationship are the main focus of this study. In this study the unit of analysis was unit. So, of approximately 150 units in the list of public and private hospitals in the city of Mashhad, 100 units were selected based on probability sampling design. 67 valid questionnaires (67 units) remained. Reliability and Validity were assessed by using Choronbach's alpha and confirmatory factor analysis. Parametric methods were used to test the research hypotheses. The results showed that the effectiveness of hospitals was mostly affected by nurses' virtuousness. Moreover, the organizational culture, as the moderator, had a significant effect on the relationship between virtuousness and effectiveness in hospitals.

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1   Introduction

Aside from the growing attention paid to the emotions and emotional processes by psychologists in recent years, there has been a great deal of interest in the experience, expression, and management of emotions, moods, and feelings at work [1]. The literature in this area covers topics such as the role of mood and emotions in predicting pro-social organizational behaviors [2], emotional contagion at work groups [3], emotional intelligence [4], and emotional labor [5]. Furthermore, the emergent movements such as positive psychology [6] and positive organizational scholarship [7] mainly focus on positive emotional experiences and their implications for organizations.

The field of positive organizational scholarship (POS) was developed to study the positive outcomes, practices, and attributes of organizations and its members. A key component of positive organizational scholarship is the concept of virtuousness, as displayed "inside" and "between" organizations. Virtuousness is the search for the highest goals in the human life [8]. Virtuousness in organizations refers to the behavior of individuals in an organization, which has been the subject of increasing literature on in the field of positive psychology [6], [9]. The manifestation and consequences of virtues such as hope, gratitude, wisdom, forgiveness, compassion, resilience, and so on, have gained considerable attention in the pertinent literature [10], [11], [12]. Virtuousness through organizations refers to empowerment and promotion of virtuousness in organizations. It is a relatively new topic in this area. In the literature, business ethics, corporate social responsibility, and citizenship behavior have already been addressed [13]. However, virtuousness is distinct from those concepts, with the organizational manifestations of virtuousness and its consequences remaining under-developed both theoretically and empirically. Unfortunately, given the link between the concept of virtuousness and the ideal condition for human beings, its exclusion from scientific studies leaves a gap in understanding the full range of consequential organizational phenomena.

Despite the lack of empirical research, there is reason to expect that virtuousness could be linked to positive performance in organizations. The evidences suggest that the virtue of forgiveness is linked with broader and profound social relationships, higher satisfaction, greater sense of empowerment, improved physical health, rapid recovery from disease and injury, and reduced depression and anxiety in people [14], [15]. Optimism and hope are connected to higher performance, greater perseverance, and amiable moods at work [16]. Optimistic individuals have better social relationships, and they are more likely to have higher levels of physical health, higher academic and athletic achievements and rapid recovery from illness and trauma, with higher pain tolerance, self-efficacy,

and flexibility in thinking [17], [82]. Compassionate people also demonstrate higher levels of helpfulness, moral reasoning, connectedness, stronger interpersonal relationships, as well as reduced depression, moodiness and mental illness [18], [19]. Integrity is also associated with higher levels of self-esteem, intimacy, self-regard, and positive feeling in people [20]. It is also connected with productive interpersonal relationships, teamwork, effective decision making and participation, along with positive atmosphere in organizations [20]. Other virtues (e.g., gratitude, love and humility) have also been found to provide similar positive benefits [9]. As mentioned earlier, however, there is a lack of research on virtuousness in organizations explaining the organizational performance as the outcome. So, in this research the main purpose is considering the effect of virtuousness on effectiveness in various units in the hospitals of city of Mashhad. Because in the recent years the ministry of Health have used the accreditation as a tool for systematic evaluation of health care centers performance. However, the results of this evaluation[4] show that more activities are needed for improving the performance of hospitals especially in the city of Mashhad (since Mashhad is one of the main cities to absorb the health tourism in Iran). So, improving the effectiveness is one of the main factors in improving the performance and achieving the high grade of accreditation. In this way, it seems that some factors such as culture can moderate this relation and should be considered in this relationship. Several studies showed the functional relationships between culture and organizational outcomes, also some researchers (e.g. see: [21], [22]) believe that the effect of virtuousness may support a condition where the impulse to seek human excellence becomes a part of the organization's culture. So, culture has an effect on virtuousness and effectiveness and it can moderate the relationship between these two factors (e.g. see: [23], [24])

2   Literature review

2.1 Effectiveness
Effectiveness is the degree with which an organization accomplishes its major tasks or realizes its objectives. There are a variety of effectiveness models that can be used in different settings depending on the purposes and constraints of organizational effectiveness research for measuring the effectiveness. One of these models is the goal model in which organizations are effective to the extent they accomplish their stated goals [25], [26]. Resource-depended model is another model where effectiveness is defined as the extent to which organizations acquire their needed resources [27]. In another model, the efficacy of organizations depends on the consistency of their internal functioning, the efficiency of their

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[4] e.g. see: www.hospital-ir.com

organization, and the lack of stress [28]. It should be noted that effectiveness of nonprofit organizations should not be assessed based on a single parameter [29]. Some parameters used for assessing the effectiveness of organizations include mission statement, client satisfaction, and planning document [30], [26]. In this research, effectiveness is assessed according to Cameron et al.'s (2011) model which is based on the goal model.

There are various factors which have an effect on effectiveness. As Table 1 shows some of these factors are related to leadership, strategic plan or size of hospitals. Also the rest of these factors are related to employees. For example, employees' satisfaction or job description which are in the field of human resource management. In addition in the recent decades some researchers believe that some factors which are related to the behavior of employees such as organizational citizenship behavior or virtuousness can have a direct impact on effectiveness. Since the role of virtuousness is very important in hospitals, in the following this factor will be described in more details.

Table 1:   Factors having an effect on effectiveness

Factors	Author(s)
leadership	Hoffman and Mehra (1999); Loke (2001)
Strategic plan	Haynes and Duvall (1992); Kilic and Okumus (2005)
Human resource management (such as motivation, job description, training)	Dessler (2005); Black and Lynch (1996)
Size	Afrooz and Edalati (2011)
Organizational citizenship behavior	Walz and Niehoff (2000)
Virtuousness	Cameron et al (2011)

2.2   Virtuousness

The word "Virtuousness" comes from the Latin word "Virtus", meaning ''strength'' or ''excellence.'' Ancient philosophers, Plato and Aristotle, defined virtues as the desires and actions that foster personal and social righteousness. More recently, virtuousness has been described as the best of the human condition, the most ennobling of behaviors and outcomes, the excellence and essence of humankind, and the highest aspirations of human beings [39], [40], [41]. In the original Greek philosophy, virtuousness was considered at both individual and collective levels [42]. Virtuousness, in this sense, is the internalization of moral rules that produces social harmony [43]. However, organizational virtuousness requires more than the socialization of members. Virtuous organizations help the ethical development of their members ([44], [45]) as they have the ''strengths that allow individuals to flourish as human beings and to pursue uniquely human goals and goods'' [46].

Virtuousness is associated with the ideals of the individuals and organizations

which motivates them to achieve their very best. Exclusive to human being, states of virtuousness stand for conditions of flourishing, ennoblement, and vitality [47]. Virtuousness has been defined in connection with meaningful life purpose [48], the ennoblement of human beings [49], personal flourishing [50], and what leads to health, happiness, transcendent meaning, and resilience in suffering [51], [52]. It generates "moral muscle," willpower, or strength to face challenges [43], [53]. At the collective level, virtuousness has been linked to organizations, communities, and cultures.

Traditionally, the concept of virtuousness has been regarded as relativistic and culture-specific, which has usually been associated with social conservatism, religious or moral dogmatism, and scientific irrelevance [24]. There has been a paucity of scholarly research on virtuousness, especially within the realm of organizations. It is often neglected by the managers who perceive little relationship between virtuousness and the economic outcomes for which they are responsible [54], [55], [56]. In one study, the frequency of the terms related to virtuousness was surveyed in business press [55]. The results indicated that virtues were often dismissed as topics associated with business performance. An analysis of the word usage in the Wall Street Journal from 1984 to 2000 suggested that the frequency of the terms such as win, advantage, and beat had increased by four times over the 17-year period of the study, whereas the frequency of terms such as virtue, caring, and compassion showed a decline in the same period [55]. In organizational studies, the concepts related to virtuousness have been replaced by morally neutral terms such as corporate social responsibility, citizenship behavior, and employee morale ([57], [58], [59]), which in turn have constricted the systematic investigation of the term virtuousness in organizations.

There were, however, some studies that emphasized the impact of implementing virtuous practices in organizations over time. In these studies, virtuous practices were defined as collective behaviors or activities that were sponsored by and characteristic of an organization that acted in consistence with virtuousness. These practices were measured in another survey with 114 items, which provided six stable dimensions: solicitude (people care for, take interest, and maintain responsibility for one another as friends), compassionate support (people support each other with kindness and compassion at the time of troubles), forgiveness (people avoid blaming and forgive mistakes), inspiration (people inspire one another at work), meaning (the meaningfulness of the work is emphasized, and people are elevated and reinvigorated by their work), and respect, integrity, and gratitude (people treat one another with respect and appreciation, and trust and try to maintain integrity). The present study aims to bridge the research gap on virtuousness by measuring the concept of virtuousness in organizations and examining its association with the concept of effectiveness (see Figure 1).

2.3 **Virtuousness and Effectiveness**

Given the positive association between virtuousness and desirable individual outcomes, it is logical to assume that the development of virtuousness in an organization presupposes the existence of a positive relationship with organizational outcomes. This assumption is especially relevant in organizations that have been recently downsized. Several studies have reported that negative deviance, at both individual and organizational levels, is especially common in recently downsized organizations [60], [61]. For example, the findings regarding the effects of downsizing shows its detrimental impact on morale, trust, and productivity in most organizations, while less than 10 percent of the companies reported improved quality, innovation, or organizational climate. In companies with similar growth rates, the non- downsized ones consistently outperformed the downsized ones in 2001 recession; moreover, a large majority of firms lagged in Standard and Poor's 500 index share price three years after downsizing; The firms engaged in both employment and asset downsizing also experienced a decline in Return on Assets (ROA) after downsizing, unable to recover to match non-downsizing firms even after three years [62], [63].

These negative outcomes can be attributed to a variety of internal problems in organizations including (1) the destruction of interpersonal relationships, shared values, trust, loyalty, and shared culture and values; (2) reduced information sharing and increased secrecy, deception, and duplicity; (3) increased formalization, rigidity, change resistance, and conservatism; (4) increased conflict, anger, vindictiveness, and victimization, and (5) increased selfishness and voluntary turnover, as well as deteriorated teamwork and cooperation [64]. In other words, downsizing leads to injustice, life disruption, and personal harm. The most common reactions are non-virtuous; such as blaming others, holding grudges, seeking retribution, and displaying self-interest [65], which can deteriorate the organizational performance.

The study of virtuousness in such organizations allows us to examine the pragmatic value of virtuousness. If performance and virtuousness are positively correlated in conditions where negative performance is expected, it can be posited that virtuousness is a pragmatically important phenomenon that should be taken into account by managers and researchers.

Although organizational virtuousness is not motivated by instrumental outcomes, there is reason to expect that virtuousness brings out positive side effect in organizational outcomes [66]. A case in point is the effects of two virtues, i.e., compassion and forgiveness. Forgiveness is associated with broader and richer social relationships, higher satisfaction, greater sense of empowerment, improved physical health, rapid recovery from disease and injury, and reduced depression and anxiety in people [14]. Compassionate people also demonstrate higher levels of helpfulness, moral reasoning, connectedness, stronger interpersonal relationships, as well as reduced depression, moodiness and mental illness [18], [19]. In fact, the psychology literature provides growing evidence concerning the

relationship between individual virtuousness and performance [67], [68], [69]. Likewise, at organization level, studies show a link between virtuous (which includes six interdependent variables: dignity and respect, support, caring, meaning, inspiration, forgiveness) business practices and a general improvement in performance [21], [70]. It is worth mentioning that these benefits are not an end per se, rather they are the upshots of pursuing virtuousness [71]. Thus, the first hypothesis is:

H1: A positive relationship exists between perceptions of organizational virtuousness and effectiveness.

2.4 Organizational culture and effectiveness

Based on earlier studies which showed the functional relationships between culture and organizational outcomes [72], Denison presented his model to develop an integrative theory of organizational culture which explains (1) how culture is connected to organizational effectiveness, (2) identifies a broad set of traits and value dimensions that enable a better understanding of the culture effectiveness relationship, and (3) provides additional insights about the specific processes through which these traits assist or hinder effectiveness [73]. At the core of Denison's model are the fundamental beliefs and assumptions that correspond to the deepest levels of organizational culture [74]. These assumptions lay the foundation for (1) more surface-level cultural components such as values and observable artifacts   including symbols, heroes, rituals, etc. and (2) behaviors and actions [73]. Despite the central role attributed to these underlying beliefs and assumptions and consistent with the predominant view in culture research [75], Denison's model of organization comparison is more based on ''surface-level'' values and their obvious practices. These values are assumed to be more accessible than the assumptions and more reliable than the artifacts [73]. Accordingly, Denison's model affirms that all four broadly defined cultural traits, i.e., involvement, consistency, adaptability, and mission, promote organization capabilities for integrating and coordinating internal resources and adapting with external environment, leading to superior organizational performance. As pointed in the model, each trait is measured according to three indexes (i.e. value dimensions). For instance, the involvement trait is composed of component indexes such as ''empowerment,'' ''team orientation,'' and ''capability development.'' Organizations that value (1) individual authority and employee's initiatives, (2) cooperation toward common goals, and (3) development of employee skills are expected to gain a high score on this trait. A cultural profile with high scores in the involvement trait helps organizations to internally integrate their resources by creating a sense of ownership and responsibility [73]. Similarly, the consistency trait is also critical for achieving internal integration, considering its ability to facilitate the coordination of activities. However, unlike involvement that emphasizes flexibility, consistency emphasizes stability, and involves three components known as ''core values,'' ''agreement,'' and ''coordination and

integration.'' These components refer respectively to the degree to which organizational members (1) ''share a set of values that create a sense of identity with a clear set of expectations,'' (2) ''are able to reach agreement on critical issues and reconcile differences,'' and (3) ''collaborate efficiently to achieve common goals'' [73]. The adaptability trait refers to the way the organization copes with external contingencies and changes. The component indexes of this trait include ''change making,'' ''customer's focus,'' and ''organizational learning.'' ''Adaptable organizations are driven by their customers, take risks and learn lessons from their mistakes, capable and experienced enough to make change'' [73]. Finally, the mission trait explains the organization's goals, creating a sense of purpose and meaning in the organization's members. As such, the mission trait emphasizes stability and direction, helping the organization to plan its relationships with the external world. Organizations with high scores on mission trait mostly have a well-defined and clear set of values, which emphasize ''strategic direction and intent,'' ''goals and objectives,'' and ''vision.'' Based on some researches, culture has an effect on virtuousness and effectiveness and it can moderate the relationship between these two factors (e.g. see: [23], [24]). Also Denison's model which is employed in this research is a holistic model that enforced the impact of culture on effectiveness [81]. In addition, considering the culture as a moderator is an external validity of previous research which has been done by some researchers such as Cameron et al. (2011). Therefore, in this study it is assumed that:

H2: Organizational culture has a moderating role on the relationship between virtuousness and effectiveness.
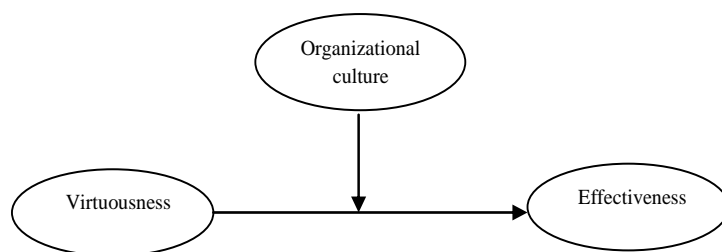
In summary:

Figure 1:   Conceptual model (adopted from Cameron et al., 2011)

3 Methods

3.1 Research context

This research is applied research based on its purpose and based on its method is co-relational and descriptive survey. The sample population consists of various units of hospitals in Mashhad, which has caused to have a homogenous sample in order to achieve a higher degree of internal validity. These hospitals and their units had similar applications and organization resources with the executives and nurses providing the key information in this study, especially the executives who are typically the primary decision-makers of organizational change in hospitals.

3.2 Sampling and data collection procedures

Given the fact that therepresentativeness of sample is critical to the present study, the probability sampling design was chosen. The generalizability of findings is a major advantage of this procedure [75]. Since the main goal of this study was to analyze the effectiveness of hospital in general, the random sampling method was selected so that all hospitals have equal chance at being selected for this study. Sekaran and Nougie (2010) argue that the results of the random sampling design would be more generalizable.

Of approximately 150 units in the list of public and private hospitals in Mashhad, 100 units were selected based on probability sampling design, using simple random sampling, and random numbers table. The aim was to ensure that each member of the defined population had an equal chance of being selected to strengthen the external validity of the study, which in turn increases the generalizability of the results. However, of total 74 respondents (units), 7 were excluded from the final sample because their questionnaires were incomplete, leaving 67 valid questionnaires (67 units).

The data was collected by means of a questionnaire sent through mail, with each mail including a prepaid return envelope along with a signed cover letter that explained the objectives of the project to the participants. The data-gathering phase took five-months. The key informants of this study were the executives and nurses in all health care centers. Nurses were selected because the virtuousness is mainly projected in their behaviour and hospital managers are selected since they are responsible for units' performance in the hospital. The majority of respondents were females, with at least a bachelor degree, and approximately 80 % of them aged between 31 and 50. In average at least three respondents filed the questionnaire in each unit and after that the mean of answers was calculated for each items (questions).

3.3 Measures

A multiple-item questionnaire was used to measure the variables. All of the items were already validated in literature on a five point Likert scale, ranging from strongly agree (1) to strongly disagree (5). Since the survey was conducted in Iran,

the original items were translated into Persian and back translated to English to ensure the consistency of meaning over translation.

A variety of variables have been used to measure culture in the literature. This study draws on the variables proposed by Denison (2000). This measure is a five-point Likert scale which consists of 22 items (questions) about the culture of hospital, chosen from 60 items in the original questionnaire. It is worth mentioning that these modifications were made after consulting with an academic expert to ensure its propriety for the hospital industry. Virtuousness was measured using six interdependent variables (Dignity and Respect, Support, Caring, Meaning, Inspiration, Forgiveness) through 18 items (questions); also 12 items (questions) were used to measure the perceived effectiveness [23].

3.4   Validity and reliability

Crucial to any research, validity and reliability deal with "the soundness, and the effectiveness of the measuring instrument." In this study, several methods were used to ensure the validity and reliability of the research using the following statistical procedures.

Cronbach's alpha is the average Interco relations among the items measuring the concept. In this study, Cronbach's alpha was used to assess the reliability. The reliability coefficient for each variable is listed in the Table 2.

Table 2:   Cronbach's Alpha scores for the variables

Variables	Alpha (Actual Survey, *n*=67)
Effectiveness	0.938
Virtuousness	0.927
Organizational culture	0.952

In this study, the soundness and effectiveness of the research instrument were confirmed in a pre-test. A pre-test was carried out to identify and plan the questions. Five professors, five nurses and five executives of the hospital were asked to verify the content validity of the instruments by reviewing the questionnaire design and offering their comments. As a result, minor modifications were made to the questionnaire to ensure the consistency of meaning in English and Persian, as well as the overall readability of the questionnaire. The pre-test survey consisted of the same format of the questionnaire, which included three sections: virtuousness (section 1), culture (section 2) and effectiveness (section 3).

After conducting the pre-test and approving the questionnaire, a pilot study was carried out to ensure that the questions were easily retrievable by the respondents, and could be answered within a reasonable time period. The pilot study was conducted on 30 nurses who worked in hospitals around the city of Mashhad (a city in the northeast of Iran) using the convenience-sampling technique. Based on the feedbacks, minor modifications were made to the questionnaire for the next phase

of data collection. However, responses collected from these six hospitals were not included in the final sample.

To ensure the content and face validity of the questionnaire, a panel of experts, consisting of the management and statistician experts, was asked to review the survey. They were asked to examine the content of the items in the instrument, deciding whether they were understandable to the nurses and managers. After some modifications, the instrument was resubmitted to the experts for further analysis. They unanimously recommended the use of the modified instrument, confirming that the questions were suitable for obtaining the required data on effectiveness and virtuousness. In addition, convergent and divergent validity (Table 3 and 4) is measured for effectiveness, culture and virtuousness. As the Table 3 shows the convergent validity is suitable, since the values of all variable are more than 0.4 [77]. In addition, the number on main diameter in Table 4 shows that the divergent validity is suitable.

Table 3: Convergent Validity

	E	C	V
AVE	.533	.597	.667

Table 4: Divergent Validity

	V	C	E
V	.8160	-	-
C	.7603	.772	-
E	.6751	.664	.730

Construct validity is another measure, which is used to ensure that the respondents' answers correlate with the intended purpose of the study. Confirmatory Factor Analysis is also used to ensure that each item belongs to the correct category. Before that the suitability of data for factor analysis was assessed by Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. High KMO value for items related to each variable indicated that the factor analysis was suitable for the data collected from the nurses in Mashhad hospitals (Table 5).

Table 5:   Kaiser-Meyer-Olkin (KMO) Test

Variables	KMO	Sig.
Effectiveness	.605	.000
Virtuousness	.910	.000
Organizational culture	.866	.000

Factor loading, or the degree of communality among scale items is the extent to which the variance in each item can be explained. Low values (less than 0.5) may indicate that the item is not in fitting with other items with regard to a particular component [78]. The examination of the factor loadings revealed that out of the 56 items, as Table 6 shows four items (i.e., C2, C10, C13, V3) were flagged for their low loading (below 0.5) and removed from the questionnaire [78].

Table 6:   Confirmatory Factor Analysis

Items	C	Items	E	Items	V
C1	.840	E1	.791	V1	.774
C2	.356	E2	.821	V2	.809
C3	.843	E3	.725	V3	.386
C4	.825	E4	.841	V4	.757
C5	.844	E5	.581	V5	.609
C6	.656	E6	.762	V6	.854
C7	.747	E7	.748	V7	.802
C8	.912	E8	.816	V8	.810
C9	.869	E9	.863	V9	.828
C10	.312	E10	.683	V10	.818
C11	.718	E11	.681	V11	.833

C12	.590	E12	.686	V12	.883
C13	.362	E13	.898	V13	.822
C14	.720	E14	.517	V14	.869
C15	.825	E15	.699	V15	.862
C16	.855	E16	.610	V16	.849
C17	.858			V17	.823
C18	.894			V18	.878
C19	.873				
C20	.914				
C21	.893				
C22	.563				

4   Results

In the present study, data management and analysis were performed using SPSS Version 14. Appropriate descriptive and inferential statistical procedures were utilized. As Table 7 shows descriptive data such as mean and standard deviation for virtuousness, culture and effectiveness are calculated. Also, correlation between these three variables are shown in Table 4 as well.

Table 7:   Descriptive statistics and variables' correlation

	Mean	S.d.	V	C	E
V	3.898	0.762	1	-	-
C	3.47	0.66	0.7603**	1	-
E	3.75	0.74	0.6751**	0.664**	1

Correlation is significant at .01 levels (2tailed)
V=Virtuousness; C=culture; E=Effectiveness

Before testing the hypothesis, the Exploratory Data Analysis (EDA) for every variable for normality and homogeneity of the variances, linearity and any outliers or extreme values in the data set to allow for an appropriate analysis of parametric or non-parametric tests was examined. Since skewness values for culture and virtuousness were -.309 and -.0630, it is considered excellent for evaluating normality. An alpha level of 0.05 was set for all the statistical tests, unless the otherwise was stated. Since Multiple Moderate Regression (MMR) best suits this purpose, it was used in this study. The independent, moderator, and dependent variables were all continuous [79]. Table 8 shows the result of regression analysis.

Table 8:   Results of MMR Analysis[1]

Independent variable	Step 1	Step 2
V: Virtuousness	.322**	.020*
C: Organizational Culture	.451***	.658
V*C		.006**
Overall Model R^2	.498***	.555
Overall Model F	31.757***	8.048**
Change in Adjusted R^2	.482**	.534**

[1] standardized regression coefficients are reports:
 * P<.05   ** P<0.01   *** P<0.001

As shown in the Table 8, the overall models were significant for the moderating role of organizational culture on the relationship between the virtuousness and effectiveness ($F = 31.757$, $p < 0.05$), $R^2 = 0.498$, [$F (2,64) = 31.757$, $p = 0.001$]. The R^2 value 0.498 suggested that virtuousness, as the main effect of culture, explained 50% of the variance/variation in effectiveness of hospitals. In the second step, and

after incorporating the product term, as shown in Table 8, the value of R^2 in the first model increased to 0.555, and [F (1,63) =8.048, p= 0.01], supporting the prevalence of the moderating effect of organizational culture on the relationship between the virtuousness and effectiveness of the hospitals. Therefore, the moderating effect of organizational culture accounted for 6% of variance in the effectiveness of hospitals, and exceeded the variance explained by virtuousness, and the organizational culture status. Thus, the hypothesis was confirmed. The proposed moderated multiple linear regression models can be obtained using the following equation:

$$E= b_0 + b_1 (V) + b_2 (C) + b_3 (V.C) + \acute{\varepsilon} \qquad (1)$$

Where: V stands for virtuousness, C stands for organizational culture and V.C are the product terms for V and C. Therefore, the estimated models are shown below (see Fig. 2):

$$E= 1.589 + 0.08 (V) + 0.278 (C) + 0.068(V.C) + \acute{\varepsilon} \qquad (2)$$
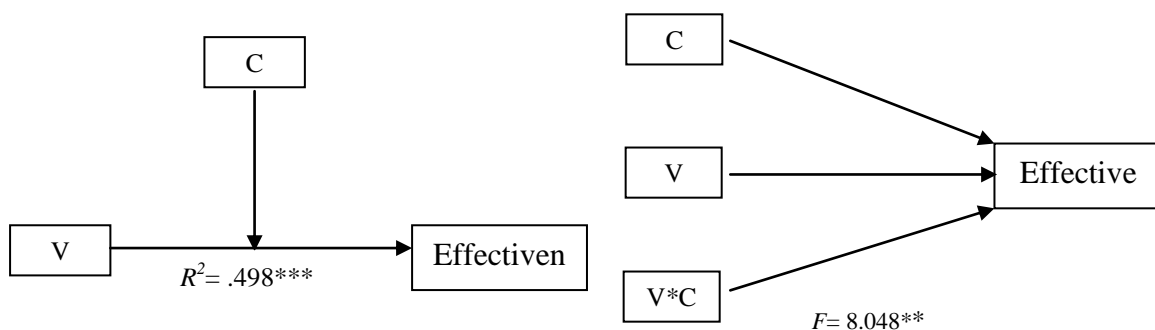
V: Virtuousness   C: Organizational Culture   *** $p< 0.0001$ ** $P<0.001$ * $p< 0.05$

Figure 2:   The proposed model for moderating role of organizational culture

As shown in Eq. 2, 1% increase in the standard deviation of virtuousness leads to %8 increase in standard deviation of effectiveness; while 1% rise in standard deviation of culture, brings about %27.8 increase in the standard deviation of the effectiveness.

5   Discussion and conclusion

The significance of the moderating effects in highlighting the necessity of

considering the organizational culture and social context in the research settings are supported in line with the results of other researches [23], [21]. The findings of this study mentioned that the culture has an effect on virtuousness and effectiveness ([24], [80]) and also virtuousness can affect on effectiveness [70]. It suggested using the moderating variables such as culture in future researches positing that this factor can influence the relationship between virtuousness and effectiveness. Table 8 shows the significance of culture in step1 and step 2, suggesting its important role in the model. Since the culture has a significant affect also with high coefficient (see Eq. 2), it can be concluded that the dominant culture in the hospitals can strengthen the relationship between virtuousness and effectiveness. Therefore it is important for hospitals to consider their culture when desiring to improve the effectiveness.

This study is unique in that it tests the moderating effect of culture between virtuousness and organizational effectiveness. Many studies have addressed the effect of virtuousness on effectiveness, but this study is one of the few that considers the role of culture as a moderator in this relationship. It espouses that the culture, which is handled by the organization, can significantly influence the effect of virtuousness on culture. Virtuousness to transfer at the individual level alone is not sufficient to ensure effectiveness.

To sum up, the current study indicates that the virtuousness with six stable dimensions such as: meaning, support, caring, forgiveness, respect and inspiration can effect on organizational effectiveness. It means that organization by increasing the meaning of employees' work, motivating the people to support each other and sympathy at the time of troubles,   create the situation that people forgive their employees' mistakes, people treat one another with respect and appreciation, and inspiring one another at work, can improve their effectiveness.   However, another significant finding of this study shows the important role of organizational culture for effectiveness in organizations such as hospital industry. It means that virtuousness can effect on effectiveness in an organization when supported by the organizational culture. So, this unique finding of this research supports the idea that when considering the effectiveness of organization based on employee' virtuousness, all factors such as culture should be considered.

6   Implications and future directions

The findings of this study have important implications for the culture and virtuousness researchers, hospitals, and the states in which hospitals operate. Researchers need to pay greater attention to the impact of culture, and the fact that the relationship between organizational effectiveness and virtuousness can be moderated by organizational culture. For hospitals, nurses should be aware of the impact of virtuousness on their performance and the effectiveness of the hospitals. Similarly, hospitals' executives should know that the organizational culture can

significantly affect their organizational effectiveness. Thus, they have to adjust the current culture in the way that leads to improved effectiveness. The results also show the important role of government in this model. The government should provide decent livelihood for the hospital employees (such as nurses) as it helps promote virtuousness in hospital environments. Also the government has a pivotal role in changing the national culture, which can directly affect the organizational culture.

This research has raised many questions for the future studies. More researches on this topic need to be undertaken to develop this concept by exploring other components of effectiveness along with the role of other moderation or control variables such gender and age of the nurses.

Like all researches, this study has limitations that must be taken into account when weighing its contribution. One such limitation is the use of a self-report measure for collecting the majority of the data. Given the nature of the research, the self-report methodologies seem unavoidable. Also, since the organizational culture is usually associated with the national culture, cautions should be taken when generalizing the findings of this study to other countries.

References

[1] R.G. Lord, R.J. Klimoski and R. Kanfer, "Emotions in the workplace: Understanding the structure and role of emotions in organizational behavior", Jossey Bass, 2002.

[2] J.M. George and A.P. Brief, "Feeling good-doing good: A conceptual analysis of mood at work-organizational spontaneity relationship," Psychological Bulletin, vol. 112, no. 2, 1992, pp. 310-329.

[3] S. Barsade, "The Ripple Effect: Emotional contagion and its influence on group behavior," Administrative Science Quarterly, vol. 47, no. 4, 2002, pp. 644-675.

[4] M. Davies, L. Stankov and R.D. Roberts, "Emotional intelligence: In search of an elusive construct," Journal of Personality and Social Psychology, vol. *75*, no. 4, 1998, pp. 989-1015.

[5] J. Schaubroeck and J.R. Jones, "Antecedents of workplace emotional labor dimensions and moderators of their effects on physical symptoms," Journal of Organizational Behavior, vol. *21*, no. 2, 2000, pp. 163-183.

[6] M.E.P. Seligman and M. Csikszentmihalyi, "Positive psychology: An introduction," American Psychologist, vol. 55, no. 1, 2000, pp. 5-14.

[7] K.S. Cameron and A. Caza, "Introduction: Contributions to the discipline of positive organizational scholarship," *American Behavioral Scientist, vol. 47, no.* 6, 2004, pp. 1-9.

[8]   D.S. Bright, K.S. Cameron and A. Caza, "The amplifying and buffering effects of virtuousness in downsized organizations," Journal of Business Ethics, vol. 64, no. 3, 2006, pp. 249-269.

[9]   C.R. Snyder and S.J. Lopez, "Handbook of Positive Psychology," Oxford University Press, 2002.

[10] L.A. Harker and D. Keltner, "Expressions of positive emotion in women's college yearbook pictures and their relationship to personality and life outcomes across adulthood," Journal of Personality and Social Psychology, vol. 80, no. 1, 2001, pp. 112-124.

[11] J.J. Sternberg, "A balanced theory of wisdom," Review of General Psychology, vol. 2, no. 4, 1998, pp. 347-365.

[12] J.J. Sternberg, "A balanced theory of wisdom," Review of General Psychology, vol. 2, no. 4, 1998, pp. 347-365.

[13] L.Y. Sun, S. Aryee and K.S. Law, "High performance human resources practices, citizenship behavior and organizational performance: A relational perspective," Academy of Management Journal, vol. 50, no. 3, 2007, pp. 558-577.

[14] M.E. McCullough, "Forgiveness as human strength: Theory, measurement, and links to well-being," Journal of Social and Clinical Psychology, vol. 19, no. 1, 2000, pp. 43-55.

[15] C.V.O. Witvliet, T.E. Ludwig, and K.L. Vander Laan, "Granting forgiveness or harboring grudges: Implications for emotion, physiology, and health," Psychological Sciences, vol. 12, no. 2, 2002, pp. 117-123.

[16] C. Peterson, "The future of optimism," *American Psychologist,* vol. 55, no. 1, 2000, pp. 44-55.

[17] C. Peterson, "Health and Optimism," Free Press, 1991.

[18] E.J. Cassell, "Compassion", In C. R. Snyder & S. J. Lopez (Eds.), Handbook of Positive Psychology (pp. 434-445). Oxford University Press, 2002.

[19] R.C. Solomon, "The moral psychology of business: Care and compassion in the corporation," Business Ethics Quarterly, vol. 8, no. 3, 1998, pp. 515-533.

[20] S. Harter, "Authenticity," In C.R. Snyder & S. J. Lopez (Eds.), Handbook of Positive Psychology (pp. 382-394). Oxford University Press, 2002.

[21] K.s. Cameron, D.S. Bright and A. Caza, "Exploring the relationships between organizational virtuousness and performance," American Behavioral Scientist, vol. 47, no. 6, 2004, pp. 766-790.

[22] M. Gunther, "Faith and Fortune: The Quiet Revolution to Reform America's Business," Crown Business, 2004.

[23] K. Cameron, C. Mora, T. Leutscher and M. Calarco, "Effects of Positive Practices on Organizational Effectiveness," Journal of Applied Behavioral Science, vol. 47, no. 3, 2011, pp. 266-308.

[24] C.M. Vallett, "Exploring the relationship between organizational virtuousness and culture in continuing higher education," The Journal of Continuing Higher Education, vol. 58, no. 3, 2010, 130-142.

[25] J.L. Price, "The study of organizational effectiveness," Sociological Quarterly, vol. 13, no. 1, 1982, pp. 3-15.

[26] S. Robbins, "Organizational Theory: Structure, Design and Applications," Pearson Education, 1990.

[27] J. Pfeffer and G.R. Salancik," *The* External Control of Organizations," Harper & Row, 1978.

[28] A.Y. Lewin and J.W. Minton, "Determining organizational effectiveness: Another look and an agenda for research," Management Science, vol. 32, no. 5, 1986, pp. 514-538.

[29] R.D Herman, and D.O. Renz, "Advancing Nonprofit Organizational Effectiveness Research and Theory," Nonprofit Management & Leadership, vol. 18, no. 4, 2008, pp. 399-415.

[30] R.D. Herman and D.O. Renz, "Nonprofit organizational effectiveness: contrasts between especially effective and less effective organizations," Nonprofit Management & Leadership, vol. 9, no. 1, 1998, pp. 23-28.

[31] J.M. Hoffman, and S. Mehra, "Management leadership and productivity improvement programs," International Journal Applied Quality Management, vol. 2, no. 2, 1999, pp. 221-232.

[32] C.F. Loke,"Leadership behaviours: effects on job satisfaction, productivity, and organizational commitment," Journal of Nursing Management, vol. 9, no. 4, 2001, pp. 191-204.

[33] R.M. Haynes and P.K. Duvall, "Service quality management: a process-control approach," International Journal of Service Industry, Management, vol. 3, no.1, 1992, pp. 14-24.

[34] H. Kilic and F. Okumus, "Factors influencing productivity in small island hotels: evidence from Northern Cyprus," International Journal of Contemporary Hospitality Management. Vol. 17, no. 4, 2005, pp. 315-331.

[35] G. Dessler, "Human Resource Management," 10th ed. Pearson Education Inc., 2005.

[36] S.E. Black and L. M. Lynch, "Human capital investments and productivity," The American Economic Review, vol. 86, no. 2, 1996, pp. 263-267.

[37] A. Afrooz, K. Abdul Rahim and A. Edalati, "Determinants of productivity in food industries of Iran," Elixir Product Management, vol. 38, 2011, pp. 4253-4256.

[38] S. Walz and B. Niehoff, "Organizational Citizenship Behaviour: Their Relationship to Organizational Effectiveness," Journal of Hospitality & Tourism Research, vol. 24, no. 3, 2000, pp. 301-319.

[39] K.S. Cameron, "Organizational Virtuousness and Performance," In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), Positive Organizational Scholarship (pp. 48-65). Barrett-Koehler, 2003.

[40] A.C. Tjeltveit "Implicit Virtues, Divergent Goods, Multiple Communities," American Behavioral Scientist, vol. 47, no. 4, 2003, pp. 395-414.

[41] A. Rego, A. Vitória, A. Magalhães, N. Ribeiro and M.P. Cunha, M.P. ,"Are authentic leaders associated with more virtuous, committed and potent teams?" The Leadership Quarterly, vol. 24, no. 1, 2013, pp. 61-79.

[42] K. Schudt, "Taming the corporate monster: an aristotelian approach to corporate virtues," Business Ethics Quarterly, vol. 10, no. 3, 2000, pp. 711-723.

[43] R.F. Baumeister and J. Exline, "Virtue, personality, and social relations: self-control as moral muscle," Journal of Personality, vol. 67, no. 6, 1999, pp. 1165-1194.

[44] J. Morse, "The missing link between virtue theory and business ethics," Journal of Applied Philosophy, vol. 16, no. 1, 1999, pp. 47-56.

[45] F. Mario and A. Shamika, "The organizational virtuousness of strategic corporate social responsibility: A case study of the Sri Lankan family-owned enterprise MAS Holdings," European Management Journal, vol. 30, no. 6, 2012, pp. 564-576.

[46] B.J Fowers and A.C. Tjeltveit, "Virtue obscured and retrieved: character, community, and practices in behavioral science," American Behavioral Scientist, vol. 47, no. 4, pp. 387-394.

[47] J. Lipman-Blumen and H.J. Leavitt, "Hot Groups: Seeking Them, Feeding Them, and Using Them to Ignite Your Organization," Oxford University Press, 1999.

[48] L.C. Becker, "Good lives: prolegomena," Social Philosophy and Policy, vol. 9, no. 2, 1992, pp. 15-37.

[49] E.M. Eisenberg, "Jamming: transcendence through organizing," Communications Research, vol. 17, no. 2, 1990, pp. 139-164.

[50] Nussbaum, M.C. (1994). The therapy of desire: Theory and practice in Hellenistic ethics. Princeton: Princeton University Press.

[51] D.G. Myers, "The funds, friends, and faith of happy people," American Psychologist, vol. 55, no. 1, 2000, pp. 56-67.

[52] D.G. Myers, "An American paradox: Spiritual hunger in an age of plenty," Yale University Press, 2000.

[53] R.F. Baumeister and J.J Exline, "Self-control, morality, and human strength," Journal of Social and Clinical Psychology, vol. 19, no. 1, 2000, pp. 29-42.

[54] R.F. Baumeister, E. Bratslavsky, C. Finkenauer and K.D. Vohs,"Bad is stronger than good," Review of General Psychology, vol. 5, no. 4, 2001, pp. 323-370.

[55] J.P. Walsh, "Business must talk about its social role," In T. Dickson (Ed.), Mastering strategy (pp. 289-294). Financial Times/Prentice Hall, 2002.

[56] R.J. Allio, "Reinventing management purpose: the radical and virtuous alternatives," Strategy & Leadership, vol. 39, no. 4, 2011, 4-11

[57] J.M. George, "State or trait: Effects of positive mood on prosocial behaviors at work," Journal of Applied Psychology, vol. 76, no. 2, 1991, pp. 229-307.

[58] B.L. McNeely and B.M. Meglino, "The role of dispositional and situational antecedents in prosocial organizational behavior: An examination of the

intended beneficiaries of prosocial behavior," Journal of Applied Psychology, vol. 79, no. 6, 1994, pp. 836-844.

[59] L.A. Barclay, K.S. Markel and J.E. Yugo, "Virtue theory and organizations: considering persons with disabilities," Journal of Managerial Psychology, vol. 27, no. 4, 2011, pp. 330-346.

[60] K.S. Cameron, "Strategic organizational downsizing: An extreme case," Research in Organizational Behavior, vol. 20, no. 1, 1998, pp. 185-229.

[61] W.F. Cascio, C.E. Young and J.R. Morris, J.R. "Financial consequences of employment change decisions in major U.S. corporations," Academy of Management Journal, vol. 40, no. 5, 1997, pp. 1175-1189.

[62] R. Henkoff, "Getting beyond downsizing," Fortune, vol. 129, no. 1, 1994, pp. 58-64.

[63] D. Rigby, "Look before you lay off," Harvard Business Review, vol. 80, no. 4, 2002, pp. 20-21.

[64] R.E. Cole, "Learning from learning theory: Implications for quality improvements of turnover, use of contingent workers, and job rotation policies," Quality Management Journal, vol. 1, no. 1, 1993, pp. 9-25.

[65] K.S. Cameron, "Strategies for successful organizational downsizing," Human Resource Management Journal, vol. 33, no. 2, 1994, pp. 189-211.

[66] A. Rego, N. Ribeiro, M.P. Cunha and J.C. Jesuino, "How happiness mediates the organizational virtuousness and affective commitment relationship," Journal of Business Research, vol. 64, no. 5, 2011, pp. 524-532.

[67] D.O. Clifton and J.K. Harter, "Investing in Strengths," In K. S. Cameron, J. E. Dutton & R. E. Quinn (Eds.), Positive Organizational Scholarship: Foundations of a New Discipline (pp. 111-121). Berrett Koehler, 2003.

[68] R.D. Hackett and G. Wang, "Virtues and leadership: An integrating conceptual framework founded in Aristotelian," Management Decision, vol. 50, no.5, 2012, pp. 868-899.

[69] A. Rego, N. Ribeiro and M.P. Cunha, "Perceptions of organizational virtuousness and happiness as predictors of organizational citizenship behaviors," Journal of Business Ethics, vol. 93, 2010, pp. 215-235.

[70] F.O. Ugwu, "Are good morals often reciprocated? Perception of organizational virtuousness and optimism as predictors of work engagement," Asian Journal of Social Sciences & Humanities, vol. 1, no. 3, 2012, pp.187-198.

[71] W. Baker, "Achieving success through social capital: Tapping hidden resources in your personal and business networks," Jossey-Bass, 2001.

[72] D.R. Denison, "Bringing corporate culture to the bottom line," Organizational Dynamics, vol. 13, no. 2, 1984, pp. 4-22.

[73] D.R. Denison, "Organizational culture: Can it be a key lever for driving organizational change," In S. Cartwright & C. Cooper (Eds.), The handbook of organizational culture. John Wiley & Sons, 2000.

[74] E.H. Schein,"Coming to a new awareness of organizational culture," Sloan Management Review, vol. 25, no. 2, 1984, pp. 3-16.

[75] G. Hofstede, "Cultures and organizations: Software of the mind," London: McGraw-Hill, 1991

[76] U. Sekaran, R. Nougie, "Research methods for business: A skill building approach,"   Wiley, 2010.

[77] N. Magner, R.B. Welker and T.L. Campbell, "Testing a model of cognitive budgetary participation -processes in a latent variable structural equations framework," *Accounting and Business Research*. vol. 27, no. 1, 1996, pp. 41-50.

[78] J. Pallent, "SPSS survival manual," Allen & Unwin, 2011.

[79] R.M. Baron and E.A. Kenny, "The moderator- mediator variable distinction in social physiological research: Conceptual, strategic, and statistical considerations," Journal of Personality and Social Psychology, vol. 51, no. 6, 1986, pp. 1173-1182.

[80] K.S. Cameron and S.J. Freeman,"Cultural Congruence, Strength and Type: Relationships to Effectiveness," In R. W. Woodman & W. A. Pasmore (Eds.), Research in organizational change and development (pp. 23–58). JAI Press, 1991.

[81] D.R. Denison, R. Haaland and S.P. Golezer, "Corporate culture and organizational effectiveness: Is Asia different from the rest of the world?," Organizational Dynamics, vol. 33, no. 1, 2003, pp.98-109.

[82] C.R. Snyder, K.L. Rand and D.R. Sigmon, "Hope theory: A member of the positive psychology family," In C. R. Snyder & S. J. Lopez (Eds.), Handbook of Positive Psychology (pp. 257-276). Oxford University Press, 2002.