Abstract

Background: Knowledge management creates value for the organization by turning human capital into intellectual assets. Organizational culture affects knowledge management by influencing these assets. The present study aimed to examine the relationship between the components of organizational culture and knowledge management at Bam University of Medical Sciences.

Methods: This descriptive-analytical study was conducted using a cross-sectional design in 2017 on 190 staff members of Bam University of Medical Sciences who were selected through stratified sampling. The data were collected using Probst’s Knowledge Management Questionnaire and Denison Organizational Culture Questionnaire. Data analysis was performed using Pearson’s correlation test and linear regression analysis with SPSS-26 software.

Results: Most of the staff (81%) had a positive evaluation of the state of organizational culture. The highest and lowest mean scores for the components of organizational culture were related to consistency (2.88) and adaptability (2.67) and also knowledge identification (3.30) and knowledge use (2.53) as the components of knowledge management. The results showed a statistically significant relationship ($P < 0.005$) between organizational culture and knowledge management.

Conclusion: The findings confirmed a significant relationship between organizational culture and knowledge management, indicating that the stronger the organizational culture, the more successful the implementation of knowledge management will be. Thus, to improve knowledge management and sharing in the organization, managers can focus on the organizational culture and improve its various dimensions.

Keywords: Organizational culture, Knowledge management, Staff

Introduction

Over the past few decades, the concept of knowledge has received a lot of attention in management research. Acquisition and development of knowledge are important factors in the success of organizations (1-3). Organizational knowledge, whether implicit or explicit, involves the shared and aggregated knowledge of people within the organization. Such knowledge is internalized in the organizational processes and is the outcome of goods and services that have evolved over the years and are developed to combine the lessons learned from the past experiences of the organization (4). Knowledge management refers to an action that is systematically taken to find, organize, and make available the organization’s intellectual capital and strengthen the culture of continuous learning and knowledge sharing in the organization (5). Knowledge management is a process that enables organizations to identify, select, organize, distribute, and transfer vital experiences and information that may be used in activities such as problem-solving, dynamic learning, strategic planning, and decision-making (6,7). Thus, knowledge management is effective in improving work quality, increasing efficiency, acquiring up-to-date information, increasing effectiveness, enhancing customer satisfaction, and improving decision-making (8).

Organizational culture can affect knowledge management in different ways (9). Knowledge management creates methods that absorb, classify, and integrate new internal and external information in the organization’s memory. Furthermore, organizational culture as values and behavioral norms is effective in choosing and giving meaning to this information...
Culture in healthcare organizations determines the boundaries of the organization and gives a sense of identity to the members of the organization, and also creates a kind of commitment in individuals that is more important than the personal interests of individuals. Organizational culture also leads to the stability of social systems and as a controlling factor, contributes to the formation or creation of employees’ behavior (11). Robbins considers organizational culture as a system of common meanings that is maintained by the members of the organization and leads to the organization’s distinction from other organizations. George Gordon also calls organizational culture a system of shared assumptions and values that are widely observed and lead to a specific behavior pattern (12). Indeed, organizational culture is a set of values, beliefs, perceptions, inferences, and ways of thinking that the members of the organization have in common (13,14). The components of organizational culture are involvement culture, consistency culture, and adaptability culture (15,16).

The most important obstacles to the effective implementation of knowledge management in the organization are the absence of knowledge-sharing culture and a lack of understanding of the numerous benefits of knowledge management among employees. Studies have shown that the knowledge-oriented culture involves the values and beliefs of the organization’s members about the concepts of information and knowledge. Thus, healthcare officials can use knowledge management tools to transform their organizations into learning organizations and take an effective step in acquiring the capabilities of this type of organization (17-19).

In a study of 3 hospitals affiliated with Zahedan University of Medical Sciences, Vazife and Tavakoli found a significant relationship between organizational culture and knowledge management and also a negative and significant association between bureaucratic organizational culture and knowledge management (20). In their study in New Zealand, Pauleen and Mason concluded that the barriers to knowledge management are organizational culture, leadership, and management functions (18). Amiresmaeli et al also concluded that for organizations to effectively improve the knowledge system, they should pay special attention to organizational culture. They also found that the stronger the organizational culture, the more successful the implementation of knowledge management will be (21). Sadeqi et al also showed a significant relationship between organizational culture and knowledge management. They also found that the existence of a suitable organizational culture in the organization causes changes and better formulation of strategies for the successful implementation of management skills and processes (22). Asgari also reported a significant relationship between the organizational structure and knowledge creation and dissemination (23).

Universities of medical sciences are in contact with a wide range of audiences including students, professors, employees, and people, and they are considered as the main centers of knowledge production and dissemination and play a vital role in advancing the scientific competence of the community. With the correct application of knowledge management, universities of medical sciences will be able to increase their knowledge-building capabilities and gain a competitive advantage compared to other universities. Moreover, the effective use of knowledge management can bring economic benefits to these universities. The effective use of knowledge management requires the existence of a suitable organizational culture, and universities as knowledge-producing organizations should benefit from such a culture. Accordingly, the present study seeks to explore the relationship between organizational culture and knowledge management among the staff working in different departments at Bam University of Medical Sciences. The findings from this study can contribute to implementing and improving transcendentism techniques and organizational improvement at Bam University of Medical Sciences and improving its performance. Furthermore, by being aware of the type of organizational culture of their organization, managers can try to eliminate possible deficiencies and prepare the organization for improvement, transformation, and successful changes.

Methods
This descriptive-analytical study was conducted using a cross-sectional design in 2017 on 190 staff members of Bam University of Medical Sciences who were selected using stratified sampling. The required sample size was calculated based on Cochran’s formula and considering the specific size of the research population (n = 415) and taking into account an error level of 0.05. The sample size in this study was estimated to be 200 persons. Finally, the data from 190 questionnaires were used in data analysis and 10 questionnaires with incomplete answers were excluded from the study.

The research population consisted of all staff members of different departments (Educational Affairs, Research and Technology, Resource Management and Planning, Food and Drug, Health, Student-Cultural Affairs, and Treatment Affairs) at Bam University of Medical Sciences. A representative sample of the university staff was selected through stratified sampling. For this purpose, a detailed list of university staff from different departments was received from the university’s human resource office. Then, a number of the staff were randomly selected from each department in proportion to the total number of staff in the department. To collect the data, the researcher visited each department and distributed
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the questionnaires among the staff who were selected to attend the study. Before completing the questionnaires, the researcher provided some instructions about the research objectives and procedure and how to complete the items in the questionnaires. All staff working in the university met the inclusion criteria. The exclusion criterion was having service records for less than 3 years. Informed consent was obtained from the staff. They were also assured that their information would be kept confidential and anonymous and would be used only for research purposes. The data were collected using Probst’s Knowledge Management Questionnaire and Denison Organizational Culture Survey (DOCS). The first section of the questionnaires contained some items that measured the participants’ demographic characteristics including age, gender, education, and service records.

Knowledge management and its components were assessed using the Knowledge Management Questionnaire (24). The questionnaire contains 21 items that measure 8 dimensions: knowledge goals (2 items), knowledge identification (2 items), knowledge acquisition (2 items), knowledge development (3 items), knowledge sharing (4 items), knowledge use (2 items), knowledge preservation (3 items), and knowledge evaluation (2 items). The items are scored on a five-point Likert scale, ranging from 1 to 5 (24). The total score for each dimension of knowledge management is calculated as the mean score for that dimension.

The Denison Organizational Culture Questionnaire was used in this study to measure organizational culture. This instrument contains 29 items that measure involvement (10 items), consistency (6 items), adaptability (7 items), and mission (6 items). The items are scored on a five-point Likert scale, ranging from 1 to 5 (25). The total score for each area of organizational culture is calculated as the mean score for that area.

The validity of the Persian versions of the instruments used in this study has been confirmed in recent studies (23,26,27). Golvani confirmed the reliability of Proust’s Knowledge Management Questionnaire with Cronbach’s alpha of 0.94 (26). Amiresmaeli et al. also estimated the reliability of the instruments through the test-retest method and the corresponding values for the Organizational Culture Survey and the Knowledge Management Questionnaire were 0.87 and 0.85, respectively (21). Moreover, Shirin measured the validity of the Denison Organizational Culture Survey in Iran using Cronbach’s alpha method. The Cronbach’s alpha values for involvement, consistency, adaptability, and mission subscales were 0.84, 0.74, 0.87, and 0.85, respectively (27).

Following previous studies (21,22) and also the opinions of subject-matter experts, the numerical value of 2.5 was considered as the mean score for organizational culture and knowledge management in this study, with a higher score indicating a higher level of organizational culture and knowledge management.

The data collected using the questionnaires were summarized through descriptive statistics including percentage, mean, and standard deviation. Pearson’s correlation test was also used to determine the correlation between organizational culture and knowledge management. Besides, univariate and multivariate linear regression analysis was used to investigate the impact of each dimension of organizational culture on knowledge management. Data were analyzed using SPSS software (version 26). All the statistical procedures were performed at a significance level of less than 0.05 ($P<0.05$).

**Results**

The data revealed that 47.4% of the staff in this study were men and 52.6% were women. Moreover, 60% of the participants had a bachelor’s degree and 5.8% of them had a Ph.D. degree. In addition, 44.2% of the participants were aged 30 and 40 years and 4.2% of them were over 50 years. The results also showed that 20.5% of the participants had less than 5 years of service records, 22.1% had 5 to 10 years of service records, 30.5% had 10 to 15 years of service records, 11.6% had 15 to 20 years of service, and 15.3% had more than 20 years of service records (Table 1).

As shown in Table 2, the total score of organizational culture was 3. Besides, consistency as one of the dimensions of organizational culture had the highest score (2.88) followed by involvement (2.84), mission (2.85), and adaptability (2.67) which were at a favorable level among the university staff.

The total mean score for knowledge management was 2.75. Furthermore, knowledge identification as one of the components of knowledge management had the highest score (3.30), and knowledge use (2.53 value), knowledge preservation (2.54 value), and knowledge evaluation (2.55 value) received lower scores than other components.

As shown in Table 3, the components of involvement ($\beta = 0.658; \ P < 0.001$), consistency ($\beta = 0.298; \ P < 0.001$), and adaptability ($\beta = 0.175; \ P < 0.001$) had an independent and significant effect on knowledge management. Accordingly, different dimensions of organizational culture can account for 98% of variances in knowledge management.

The results indicated that there was a relatively high level of organizational culture and knowledge management in the staff working at Bam University of Medical Sciences. Moreover, there was a significant and positive correlation between the two variables ($r = 0.682; \ P < 0.005$) (Figure 1).

**Discussion**

The present study investigated the relationship between organizational culture and knowledge management in the staff working at Bam University of Medical Sciences.
The results confirmed a significant relationship between organizational culture and knowledge management. Furthermore, there was a relatively high level of organizational culture and knowledge management among the staff working at the university.

The data also revealed that consistency as one of the dimensions of organizational culture had the highest score (2.88) followed by involvement (2.84), mission (2.85), and adaptability (2.67) which were at a favorable level among the university staff. Organizational culture can be used as a powerful lever to strengthen organizational behavior. A weak organizational culture prevents people from sharing and disseminating their knowledge to maintain their power and efficiency (28). In contrast, a healthy
organizational culture provides an open, sincere, trusting, creative, cooperative, experimental, scientific, rational, logical, and clean environment in liberating the abilities of individuals and the potential of the organization (29). Peters and Waterman showed that transcendent and superior organizations have a strong and positive culture because a strong and positive culture increases the participation of employees and their agreement on strategic issues, promotes the commitment of employees to the organization, and aligns the goals of employees and organization, leading to higher levels of effectiveness and productivity (30).

Following the findings of the present study, the dominant culture at Bam University of Medical Sciences was the culture of consistency (2.88) with a low level of adaptability culture (2.67). The culture of consistency means that leaders and followers are skilled in reaching agreement and organizational activities are well coordinated and integrated (31). The culture of adaptability also means internal integration and external adaptability, which can be considered as an advantage and superiority for the organization. Adaptive organizations are guided by customers, take risks, learn from their mistakes, and have the capacity and experience to create change. The staff are continuously improving the organization’s ability to value customers (31), and Bam University of Medical Sciences is weak in terms of adaptability compared to other dimensions. However, the findings showed that the majority of the staff working at Bam University of Medical Sciences had a positive evaluation of the organizational culture at this university, as confirmed in previous studies (21,22). Darabi examined the organizational culture of Tarbiat Modares University and concluded that the organizational culture in the said university is at a relatively unfavorable level, which was different from the findings of the present study (32). Furthermore, Mobsenbeygi examined the organizational culture of Afzalipur hospital, Kerman, and concluded that the majority of the staff in this hospital did not have a positive view of the organizational culture of the hospital. This finding was not consistent with the results of the present study due to the staff’s disregard for organizational culture and the non-existence of a clear definition of organizational culture, leading to the lack of involvement, low adaptability and cooperation among the staff, and the reduced chance of organizational success (33).

The data in the present study revealed that knowledge identification as one of the components of knowledge management had the highest score and knowledge use received the lowest score. However, knowledge management was relatively high among the university staff in this study as reported in other studies (21,22). These similar findings could be attributed to the staff’s preference for involvement and teamwork in the organization. Contrary to the present study, Seydameri and Karami reported that knowledge management was at an average or low level (34,35). These inconsistent findings can be attributed to the low spirit of adaptability and lack of compatibility with the organizational culture, as well as the difference between knowledge management in industrial and healthcare settings. The existence of a strong adaptive culture at Bam University of Medical Sciences can account for a relatively high level of knowledge management at this university.

Overall, the findings from the present study showed a positive and relatively strong correlation between organizational culture and knowledge management. The more positive and stronger this relationship is, the more effective role will be played by organizational culture as the structure and foundation of the organization in establishing knowledge management and its more successful implementation in the organization, as evident in previous studies in the literature (21,22). Organizational culture is one of the effective factors in the establishment of knowledge management and can contribute to the success of knowledge management. Pérez López et al (36), Davenport and Lawrence (37), and Libovits (38) believe that knowledge management requires the creation of a strong organizational culture to support it. Adli (39) and Hasanzade (40) also considered organizational culture an important infrastructure of knowledge management. On the other hand, a weak organizational culture can be an obstacle to the successful implementation of knowledge management. Similarly, Paulen and Mason (18) showed that the most important obstacle to implementing knowledge management is the existing organizational culture. March and Jones (41) also concluded that in most organizations, the existing organizational culture is not a supportive factor for knowledge management.

This study was conducted with some limitations, including the conservatism of some staff in providing information and filling out the questionnaires, and the negative attitudes of some officials towards conducting the study. Thus, the researcher provided some information about the objectives of the study and ensured the participants that he would feedback about the findings.

**Conclusion**

This study examined the effect of the components of organizational culture on knowledge management at Bam University of Medical Sciences. The results showed a significant relationship between organizational culture and knowledge management. This implies that the organizational culture is the key factor in the success of knowledge management and the stronger the organizational culture, the more successful the implementation of knowledge management will be. Hence, to effectively improve knowledge within the organization and spread it throughout the organization,
managers must first pay attention to the organizational culture and its dimensions and promote knowledge in the organization through the promotion of various dimensions of the organizational culture.

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Competing Interests
The authors declared no conflict of interest in this study.

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