Quantum Leadership: The Implication for Iranian Nursing Leaders

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Abstract-Quantum organizations are referred where stakeholders know how to access the infinite potential of the quantum field. Viewing healthcare organizations from perspective of quantum theory suggest new approaches into management techniques for effective and efficient delivery of healthcare services. This research is aimed to determine the quantum skills, quantum leadership characteristics and functions of Tehran University of Medical Sciences hospitals' nursing administrators. A cross-sectional, descriptive and analytical study was conducted among 25 nursing administrators of Tehran University of Medical Sciences (TUMS) hospitals, Tehran, Iran. The research tool for data collection was a self-constructed questionnaire that measured the quantum skills, quantum leadership characteristics and functions of TUMS hospitals' nursing administrators. The validity of questionnaire was confirmed by 5 management science experts and its reliability was performed by using test-retest method yielded a Cronbach's alpha coefficient of 0.90. Data were collected and analyzed by SPSS software and t-test statistical methods. The results of this research showed that all respondents had desired quantum skills (75.71±5.98), quantum leadership characteristics (82.01±6.77), and quantum leadership functions (78.57±6.28) and total quantum leadership (78.76±4.50). Also, passing management training courses of the respondents was significantly correlated with their quantum leadership. Iranian healthcare organizations require quantum leadership that provides an important resource to advance Iranian nursing leadership to the organizational excellence. We hope Iranian hospitals' nursing leaders who have quantum skills potentially, present a highly developed sense of self and the ability to improve nursing care outcomes in these hospitals.

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Introduction

By the 1920s, physicists developed a new branch of physics named quantum mechanics. The word quantum linguistically refers to "a quantity of something", and mechanics means "the study of motion". Therefore, quantum mechanics is the study of subatomic particles. Apart from its specific application in physics, the term "quantum theory" has been used in other contexts such as leadership (1).

Today, we are in the middle of an economic and technology revolution. But, we will not understand how to direct our organizations through these agitated times. Organizational leaders understand the full field of the new leadership in this century and must be aware of the transformation of thinking. Pioneer leaders must pay attention first and get ahead of the others on the brain-power of partners. In this time, the new task of leaders is unlocking their tactful capacity, to create knowledge from information, which is the origin of innovation (2). The art of leadership is to promote competitive advantages, by understanding of new leadership roles and skills requirements (3).

Shelton and Darling found that quantum organizations were referred where all stakeholders know how to access the infinite potential of the quantum field. Therefore, quantum organizations are learning organizations where continuous learning is cultural norms (4).

Traditional organizations perform at the rim of balance, but quantum organizations perform at the rim of chaos in direct contrast. Therefore, traditional organizations must be pressured to shift to a creativity and innovation orientation. These organizations must be changed to perform at the rim of chaos. Transformed organizations present new challenges for their leaders to

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overcome traditional management and directing techniques and approaches. The next quantum leaders' tasks are to change the present environment to self-organizations (5).

According to quantum theory, there are seven quantum skills that make leaders capable to examine their mental models and thus promote their capacity to learn:

1) Quantum seeing: the ability to see deliberately
2) Quantum thinking: the ability to think adversely
3) Quantum feeling: the ability to feel actively
4) Quantum knowing: the ability to know intuitively
5) Quantum acting: the ability to act accountably
6) Quantum trusting: the ability to trust life's process
7) Quantum being: the ability to be in association (6).

Quantum seeing as the first skill declares that the reality is a subjective matter. That is, more than 80% of our external world is our beliefs and commitment (7). Quantum thinking, the second skill, is originated from quantum physics research and declares the world acts illogically and paradoxically. As quantum thinking philosophy, organizations function paradoxically too (8). Quantum feeling, is defined that the rest energy of the world consists the humans and suggests that care, caring, compassion, hope and appreciation as positive emotions increase humans' energy and negative energy, e.g. frustration, fear, anger, conflict, and stress decrease energy in the human's mind-body system (9).

The fourth skill is quantum knowing is defined as quantum field theory. Many believe that quantum field is a process such as a mindful decision making or meditation that present information (4,6).

Quantum acting, as the fifth skill of leaders, express that everything is a part of complex whole in the world in which each part impresses and is impressed by the other parts (10). The sixth skill, quantum trusting, is expressed in chaos principles. It demonstrates the chaos is an evolutionary process, and prerequisite for all progress (11). The quantum being, as final ability of leaders, suggests that the world has the nature of relation and the possibility of association with particles is possibility of relationships (6).

The skill of quantum seeing persuades organizational leaders to be informed of their purposes, and they can change their perceptions according to their modified purposes. The skill of quantum seeing encourages leaders to involve all of employees to participate in planning and visioning (12, 13).

As organizational leaders use the quantum thinking, they can use the paradoxical differences to create highly innovative ideas (9).

Using skill of quantum feeling, the leaders can focus on positive aspects of all right events, instead of focusing the organizational problems (14).

When organizational leaders use quantum knowing, they want to create a new kind of learning organization to develop mindful decision-making through intuitional process (15).

Leaders use the quantum acting skill to plan our purposes that are good for them and their organizations. Using this skill by leaders motivate them to be responsible to choose acts of kindness, compassion and integrity (16).

Using the skill of quantum trusting is very difficult because of challenging in traditional organizations and huge problems that may be happened. It seems, quantum trusting creates many new organizational processes, such as open space technology, and presents self-organizing employees in attaining the organizational goals (17).

If organizational leaders want to apply the skill of quantum being in their organizations, they should create a new environment where their employees to communicate with each other without any restriction and through horizontal and vertical organizational structure (18).

Shelton *et al*. declared if the leaders of organizations use seven quantum sills, they can see, think, feel, know, act and trust in ways that they can change better. The quantum skills model as a new model in twenty-first century involves the managers to modify their organizations from traditional model into quantum organization with highly innovative strategies (19). Also, Shelton and Darling suggested that the new theory of quantum was a new way of thinking about organizations. They demonstrated that this new model create learning organizations and enables the leaders to change the organizations continuously (3).

It seems the intersection of professionalism and complexity sciences are the source of new approaches for development of healthcare organizations from both medical and non medical point of view. Managers who accept these new approaches will be able to create new tools for positive movement in their organizations (20). Viewing healthcare organizations from perspective of quantum theory suggest new approaches into management techniques for effective and efficient delivery of healthcare services (21).

This research is aimed to determine the quantum skills of hospitals administrator in Tehran University of Medical Sciences (TUMS).

Materials and Methods

A cross-sectional study was conducted among 25 nursing administrators in 25 hospitals of Tehran University of Medical Sciences (TUMS), Tehran, Iran in 2011-2012. The research tool for data collection was a self-constructed questionnaire that measured the quantum skills, quantum leadership characteristics and functions of nursing administrators. This questionnaire is a higher order construct, consisting of three scales named quantum skills comprised of 16 questions, quantum leaders characteristics comprised of 9 questions, and quantum leaders' functions comprised of 12 questions. The scale of quantum skills included 7 subscales named quantum seeing, quantum thinking, quantum feeling, quantum knowing, quantum acting, quantum trust, and quantum being.

All questions were measured using 5-point Likert scale of agreement with response. Options ranging strongly disagree= 1 to strongly agree= 5. The mean of each scale and subscale and total mean of quantum calculated from 50. The nursing administrators who acquired 50-75, had relatively quantum skills and when acquired more than 75, had complete quantum skills. The questionnaire was undergone evaluation of 5 management science expert to evaluate its validity such as clarity, the relevance and the coherence of the questions. For evaluation of the questionnaire reliability, a pilot study involving 5 randomly selected participants, two weeks before the main study was performed. Comparison of the obtained results with the results of the main study by using test-retest method yielded a Cronbach's alpha coefficient of 0.90, suggesting high reliability. Tehran University of Medical Sciences Ethics Committee approved this study, because all participants were verbally asked to participate and contribute to the self-assessment.

Also, the respondents' demographic details consist of sex, age, marriage status, degrees, years of work experience, years of managerial experience and passing management training courses were collected. The questionnaires were delivered to the respondents by the questioners by attendance, and they were asked to fill the questionnaires after the questioners explained the aim and philosophy of this study within the end of administrative time. All of 25 respondents filled and returned the questionnaires, yielding a response rate of 100%. Data were collected and analyzed by SPSS software and T-test statistical methods.

Results

The participant ages ranged from 20 to more than 50 and 43% of them were older than 41. Most of them were female and were married (80%). Fifty two percent of the respondents reported MSc., where 48% of them were BSc. One third of the participants had 15-20 years work experience and most of them (64%) had 5-10 years managerial experience. Most of the nursing administrators had passed minimal one management training courses.

Table 1 showed that the respondents had more mean score in quantum seeing and less mean score in quantum thinking. Also, the results of descriptive statistics (overall means and standard deviations) showed that mean score for all quantum skills subscales of TUMS hospitals' nursing administrators were 75.71 ± 5.98 that means all of respondents had desired quantum skills. Also, the other results of this research found that men score for quantum leadership characteristic was 82.01 ± 6.77 and for quantum leadership functions was 78.57 ± 6.28 that means all of TUMS hospitals' nursing administrators had both desired quantum leadership characteristics and functions. Totally, it seems TUMS hospitals' nursing administrators had mean of 78.76 with SD= 4.50 for quantum leadership.

Table 1. Mean score of quantum skills subscales in TUMS nursing administrators.

Quantum skills subscales	N	Mean	SD
Quantum seeing	25	85.71	9.25
Quantum thinking	25	66.98	7.73
Quantum feeling	25	80.63	12.09
Quantum knowing	25	73.33	10.32
Quantum acting	25	82.25	13.09
Quantum trust	25	71.42	11.52
Quantum being	25	79.04	11.97

Table 2. Mean score of quantum leadership ability per passing management training courses.

Quantum leadership ability	Yes	No	Sum of t	*P*-value
Quantum skills	76.76±5.78	71.25±5.30	1.73	0.09
Quantum characteristics	83.00±7.06	77.77±3.14	1.42	0.17
Quantum functions	79.70±5.07	73.75±9.36	1.79	0.08
Total	79.82±4.18	74.25±2.89	2.49	0.02

Moreover, we analyzed the correlation between demographic details of TUMS nursing administrators with their quantum skills. Therefore, we found that passing management training courses of the respondents was significantly related to their quantum leadership, that is, the respondents who had passed the management training courses had more quantum leadership ability.

Although, there was not significant positive correlation between quantum skills of the respondents with their age (P=0.34), with their degrees (P=0.96), years of work experience (P=0.83) and years of managerial experiences (P=0.69).

Discussion

The art of leadership is presentation of competitive advantages by recognition and conception of new sciences, new leadership skills and roles But. It seems, the new leadership skills are preferred to the new roles (22). Shelton and Darling believed that traditional leadership including planning, organizing, directing and controlling are not adequate for administration of the organization in new century (23).

Today, organizations need employees who are fully energetic, creative, and motive. Quantum leaders are leaders who can motivate the employees and reach the organization to high level of performance. High performing employees are the ones who want to do the organization needs (24).

Quantum leadership is an act that leads the organization to the future and modifies the organization to future perfect ones. A future respect organization is defined as an exceptional organization in terms of productivity, performance, and profitability (25).

Quantum leadership is not an organizational tenure, but it is a process which makes everyone participates in organization. In quantum organizations, the leaders delegate his or her power to the subordinates, and they do this to the next level and being "powerful" means that the employees are full of power (5). Research on healthcare organizations leadership indicates that leadership styles in these organizations have a major influence on organizational performance, outcomes, and patient care developments (26). Today, health administration should go through the cultural transformation to develop the patient care. Transforming the huge organization like healthcare organizations is a real challenge for quantum theory (27).

In our research, all of TUMS nursing administrators had both complete quantum leadership characteristics and functions (mean= 82.01 and 78.57). Therefore, these administrators as quantum leaders have 12 characteristics as below:

Quantum leaders always look for new solutions.

They allow leaders and subordinates to have positive interaction with each other.

They ensure that the organization has an aims, a purpose, an action plan, and a sense of direction.

They create the controlled energy and avoid entropy.

They accept the invisible realities of mind, soul, and heart.

They are educated persons and are required to enable the components of organizations to interact in new ways.

They must understand that organization satisfaction of employees is in both intrinsic and extrinsic.

The must understand that positive interaction of employees and leaders produce a invisible energy.

A quantum leader is a person who develops spiritual and moral integrity with clear vision, and enables subsystems to be coordinated with systems (2).

There are several theories in nursing leadership that are applicable to new nurses. But, one of these theories is quantum leadership that helps nurses in decision making when they call to the doctor, in evaluating of care plans and interventions (28). Quantum leadership is a new style of thinking that changes healthcare system and the traditional hierarchy of this system by new leadership characteristics and roles. The nurses are trained in this manner by permitting them some autonomy in their decision-making and evaluating their decisions with corresponding patient outcomes. The future of healthcare system requires continuing this work (29-31).

The results of our descriptive statistics showed that all of TUMS hospitals' nursing administrators had complete quantum skills including quantum seeing that

means they perform their organizational purposes and they could change their perceptions as they changed the purposes.

The mean score of quantum thinking of TUMS hospitals' nursing administrators was 66.98 that express they had complete quantum thinking, that is, they could creative highly innovative ideas. Shelton *et al.* suggested that quantum thinking skill can be used to create quantum organizations that benefit from job diversity, diverse behavioral styles and have different values and interest, and cultural cohesion. However, incorporating of these diverse elements would be impossible in every organization (32). Also, Karakas and Kavas reported that quantum thinking is critical to the implementation of creative and combination thinking skills for managers (33).

In our research, we showed the respondents had desired score of quantum feeling and quantum knowing, because of their active and positive feeling, and mindful thinking. Quantum feeling of the respondents are similar to Zohar and Greenleaf's research that believes the quantum leaders begin with the natural feeling and should rely on right feel for situations, and should trust the personality, creativity and abilities that they bring to the organization (34,35). As though, according to Shelton and Darling that found learning organizations can be created by the leaders that believe the new way of viewing reality, new paradigm and new mental model (4), therefore TUMS hospitals nursing administrators can create learning organizations in nursing system and move farther up organizational compatibility. Also, TUMS hospitals' nursing administrators had good score in quantum trusting and quantum being. Therefore, it seems, they know chaos thinking and its complexity principles. Today, chaos theory and chaotic thinking are developed across nursing practice as a way of identification of specific systems and nursing, has often concentrated on secret aspects of chaos as a concept (36). Also, the nursing leadership should experience a rapid shift from traditional, hierarchical and autocratic styles of leadership towards quantum leadership as a way of being in communication with others (37).

Quantum leadership is a paradigm that adds an important part to body of literature on leadership in healthcare organizations. Quantum leadership prefers those skills and behaviors that leaders need to use to guide their organizations effectively and move them from industrial age of 20th century to the information and technology age of 21th century (38). Using quantum leadership requires healthcare leaders to convert their individual paradigms towards highly developed skills in managing conflicts, risk-taking, innovating, coaching, creating new organizational cultures and building a context for hope (39). However, new leadership training and education is necessary for nursing administrators to change their role in front-line of nursing system (40). In c**o**nclusion today, Iranian healthcare organizations in which nurses leaders live, is characterized by continuous inequity, increased diversity, and business constraints that need new and effective systems to improve outcomes of hospitals. These healthcare organizations require new skills to focus on change management, conflict resolution, and highly developed communication skills. This is quantum leadership that provides an important resource to advance Iranian nursing leadership to the organizational excellence. In our research, we found Iranian hospitals' nursing leaders have quantum skills potentially, and we hope they have a highly developed sense of self and the ability to improve nursing care outcomes in these hospitals.

Limitations and implications

The limitations of any field study are magnified when the realities of taking the concepts and techniques developed in one culture are applied to another culture. Also, one of the main limitations of the present study is that, it was conducted at one specific time. Second, the employees were conducted by questionnaire. It is possible that this information-collection process is convenient for present research, but it might have introduced into the final results of the research.

Ethical considerations

Ethical issues, including informed consent, misconduct, data fabrication and /or falsification, double publication; redundancy, etc. have been completely observed by the authors.

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References

1. Shelton C. Quantum leaps. Boston, MA: Butterworth-Heinemann; 1999: 3990.
2. Quigley ME. Quantum organization. Executive Excellence 1997;14(5):14.
3. Snyman L. South African executive leadership an art form: skills requirements. Master's dissertation, Gordon Institute of Business Science, University of Pretoria; 2008.
4. Shelton CD and Darling JR. From theory to practice: using new science concepts to create learning organizations. The Learning Organizations 2003;10(6):353-60.
5. Youngblood MD. Leadership at the edge of chaos: from control to creativity. Strategy & Leadership 1997; 25(5):8.
6. Jacobs R. Using real time strategic change: how to involve an entire organization in fast and far reaching change. San Francisco: Berrett-Koehle; 1994;p.1-4.
7. Wheatly M, Kellner-Rogers M. A simpler way. San Francisco: Berrett-koehler; 1999;P.20.
8. Houston J. The Possible human. Los Angeles: J P Tarcher 1982;p.78-80.
9. Childre DL. Cut-thru: Achieve Total Security and Maximum Energy. Boulder Creek: Planetary Publications; 1996;p.55-7.
10. Gribben JR. In research of Schroedinger's cat: quantum physics and reality. New York: Bantam; 1984: 91-94.
11. Darling J and Fogliasso C. Conflict management in the small business firm. Journal of Contemporary Business Issues 1997;5(1): 1-11.
12. Weisbord M and Janoff S. Future research: an action guide to finding common ground in organizations and communities (2nd ed.). San Francisco: Berrett-Koehlor; 2000;p.7-10.
13. Robbins SP. Organizational behavior. (15th ed.). NJ: Prentice-Hall; 2012;p.501-5.
14. Cooperrider DL, Sorensen PF, Whitney D and Yaeger TF. (Eds). Appreciative inquiry: rethinking human organization toward a positive theory of change. Champaign, IL: Stipes Publishing; 2000;p.1-24.
15. Rose C and Nicholl M. Accelerated learning for the 21st century: the six-step plan to unlock your master-mind. New York: Delacorte; 1997;p.62-9.
16. Zohar D. The quantum self: human nature and consciousness defined by the new physics. New York: William Morrow, 1991;p.49-51.
17. Owen H. Expanding our now: the story of open space technology. San Francisco: Berrett-Kochler Publishers, Inc; 1997;p.23-5.
18. Kilmann RH. Quantom organizations: a new paradigm for achieving organizational success and personal meaning. Newport Coast, CA: Kilmann Diagnostics 2011;p.42-5.
19. Shelton CD, Yang J, Liu Q. Managing in an age of complexity: quantum skills for the new millennium. International Journal of Human Resources Development and Management 2005;5(2):127-141.
20. Anderson RA, McDaniel RR Jr. Managing healthcare organizations: where professionalism meets complexity science. Health Care Manage Rev 2000;25(1):83-92.
21. McDaniel RR Jr. Strategic leadership: a view from quantum and chaos theories. Health Care Manage Rev 1997;22(1):21-37.
22. Snyman L. South African executive leadership an art form. MBA dissertation, University of Pretoria, Pretoria. 2007; http:// upetd. wp. ac. za/ thesis/ available/ etd- 03252010-1640371.
23. Shelton C and Darling JR. The quantum skills model in management: a new paradigm to enhance effective leadership. Leadership & Organization Development Journal 2001; 22(6): 264-273.
24. Monograph on the internet. Wolfe N. What is quantum leader. Quantum leader: executing strategy increasing velocity. Available from: www.quantum leader.com, Accessed at 2012.
25. Monograph on the internet. Anonymous. Quantum leadership- leading and managing in turbulent times. Innovations International Inc. Available from www.innovint.com/services/leadership1.php, Accessed at 2012.
26. Vance C, Larson E. Leadership research in business and healthcare. J Nurs Scholarsh 2012;34(2):165-71.
27. Monograph on the internet. Tye J. Cultural transformation in healthcare settings. Hospitals & Health Networks Daily. Available from: www.hhnmag.com,id=2380004197, Accessed at 2012.
28. Monograph on the internet. Wanjiru MW. What does nursing leadership aim at? Articlebase. Available from: www.artichbase.com, Accessed at 2012.
29. Porter-O'Grady T. Quantum mechanics and the future of healthcare leadership. J Nurs Adm 1997; 27(1):15-20.
30. Porter-O'Grady T. Quantum leadership: new roles for a new age. J Nurs Adm 1999; 29(10):37-42.
31. Malloch K and Porter-O'Grady T. Partnership economics: nursing's challenge in a quatum age. Nurs Econ 1999; 17(6):299-307.
32. Shelton SD, McKenna MK and Darling JR. Leading in the age of paradox: optimizing behavioral style, job fit and cultural cohesion. Leadership & Organization Development Journal 2002;23(7): 239-372.
33. Karakas F and Kavas M. Creative Brainstorming and integrative thinking: skills for twenty-first century managers. Development Learning Organanization 2008;22(2):8-12.

34. Zohar D. Rewiring the corporate brain images of organizations: using the new science to rethink how we structure and lead organizations. San Francisco: Berrett-Koehler; 1997: 10-74.
35. Greenleaf RK. Servant leadership: a journey into the nature of legitimate power and greatness. Mahwah: Paulist Press; 2005: 3-5.
36. Haigh C. Using chaos theory: the implications for nursing. Journal of Advanced Nursing 2002; 37(5):462-9.
37. Spears LC. Character and servant leadership: ten characteristics of effective, caring leaders. The Journal of Virtues & Leadership 2010; 1(1): 25-30.
38. Parter-O'Grady T and Malloch K. Quantum leadership: a resource for healthcare innovation. 2nd Edition. Sadbury: Jones & Bartlett Publishers; 2007: 50-52.
39. Korzybski A. Science and sanity: an introduction to non-Aristotelian systems and general semantics. 5th Edition. Englewood: Institute of General Semantics; 1994: 133-151.
40. Heller BR Drenkard K, Esposito-Herr MB, Romano C, TOM S and Valentine N. Educating nurses for leadership roles. The Journal of Continuing Education in Nursing 2004; 35(5):203-12.