

Systemic Thinking and Partnership Working: A Cross Sectional Study in a Medical Sciences University in Iran

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Abstract

Background: Systemic thinking can provide practice in multidisciplinary team working and improve the organizational efficacy. This study aimed to determine the association between systemic thinking and partnership working in the employees of a medical sciences university in the south of Iran.

Methods: A cross-sectional study was performed in Zahedan University of Medical Sciences (ZAUMS) in 2015. The study population consisted of all employees in ZAUMS; 370 participants were selected through stratified random sampling. Two standard questionnaires were used for data gathering. The data were analyzed in SPSS (v21) using Pearson, One way ANOVA, and logistic regression. The level of significance was considered as 0.05.

Results: In this study, 225 participants (60.8%) were female and their mean age was 34.7±8.7. The score of partnership working for 362 participants was higher than the mean standard (40). Systemic thinking had a positive association with partnership working (P=0.001) and married status of the participants (P=0.04). Partnership working in male and older staff was more than others in ZAUMS (P<0.001 and P=0.01, respectively).

Conclusion: Systematic thinking had a positive association with the employees' working partnership. Moreover, the male staff had better systematic thinking. It is recommended that the managers should promote systematic thinking in staff, especially in females, for better partnership and efficacy in organizations.

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Introduction

Systemic thinking is an approach to problem solving and it involves much more than a reaction to present outcomes or even it demands a deeper understanding of the linkages, relationships, interactions and behaviors among the elements that characterize the entire system.¹ In addition, it is a mindset that views systems and their sub-components as intimately interrelated and connected to each other, believing that mastering our understanding of how things work lies in interpreting interrelationships and interactions within and between systems.^{2,3} In recent

years, there has been a growing interest in applying systemic thinking principles to improve organizational efficacy.⁴ A study showed the lack of systematic thinking as a major deficiency in the performance of organizations.⁵

Systemic thinking can provide an integrative theoretical structure for formulation and practice in multidisciplinary team working in ways that do not challenge the preferred identities and ways of thinking.⁶ Moreover, good communication and respectful working alliances with service users are common factors in recovery and healing.⁶ On the

other hand, increased attention to how new knowledge is gained, managed, exchanged, interpreted and integrated, and emphasis on a network-centric approach that encourages the relationship-building among and between individuals and organizations across traditional disciplines and fields in order to achieve relevant goals and objectives are two fundamental systems-thinking perspectives and approaches that are shared across fields.^{7,8} Systemic thinking offers the theory and methods for partnership working, across the boundaries of team and family relationships, and the professional boundaries within teams.⁹ Systems thinkers achieve a holistic view of complex phenomena,¹⁰ and it leads to the employees' partnership with each other, especially in public health issues, and the focus of practitioners on improving overall system performance.¹¹ Moreover, partnership working can lead to learning and innovation in organization.¹²

Partnership working is less focused on rigid structures and much more on relational factors like trust and goodwill.¹³ In fact, working participation in organizations leads to increased job satisfaction and the quality of their working life. Moreover, it can lead to easier changes and participation in interventions to enable them to deal with stressors, both physical and organizational.¹⁴ In addition, some studies highlighted the importance of partnership working on the health system.^{15,16}

University of Medical Sciences as a service organization involved in education and treatment need to contribute to systems thinking and partnership working to deliver high quality services to patients more than other organizations. On the other hand, a recent systematic review highlighted the limited evidence around partnership working in public health.¹⁷ Therefore, this study examined the relationship between systemic thinking and partnership working in Zahedan University of Medical Sciences (ZAUMS) staff. The finding of this study can be helpful for health care managers and policy makers to improve the quality of human resource as the main resource in health system.

Methods

This was a cross-sectional study conducted in ZAUMS in 2015. The study population consisted of all the personnel of ZAUMS. Multi-stage sampling method was used in the present study. Initially, all the official sections of ZAUMS (hospital, health center, supportive department and school) were considered as strata (stratified sampling). Then, four blocks (wards) were selected randomly from each cluster stratum. Subsequently, using random sampling, 370 samples were selected to participate in the survey in all the blocks. Inclusion criteria were all the personnel of ZAUMS who

worked in 2015 for the university and were in Zahedan, and exclusion criterion was working in another region of the province.

The study instrument consisted of two standard questionnaires. Systematic thinking as a validated questionnaire¹⁸ included 11 questions designed in seven-point Likert scale (1 very disagree and 7 is very agree). Of the 11 questions, only question 9 was revers. In addition, the validity and reliability of partnership working as a validated questionnaire were confirmed in a previous study.¹⁹ The questionnaire has 20 questions with four-point Likert scale, so 1 was allocated to very disagree and 4 to very agree. Among the 20 questions, six (10, 13, 14, 16, 18 and 19) were revers. The cut-off point in the questionnaire was 40; in fact, higher scores mean appropriate partnership working.

The questionnaires were distributed among the participants by researchers who tried to attend for clarification if there was a need one week after they gathered the questionnaires. According to the researcher's follow up, all the questionnaires were returned to them.

Ethical Considerations

Permission for this study was obtained by the Ethics Committee of ZAUMS, Iran. The other ethical issues in this study were the assurance of confidentiality and anonymity of the participants. All participants were informed about the purpose and design of this research, and that their participation was voluntary.

Data Analysis

Mean scores of the partnership working and systematic thinking were calculated through descriptive statistics. Besides, Pearson, one way analysis of variance (ANOVA) and T-tests were used to determine the association of two variables and differences among the two variables and demographic variables. We used SPSS, version 21, and the level of significance was considered as 0.05.

Results

In the study, 370 subjects participated and most of them were female (225 or 60.8%). The participants' mean age was 34.7 ± 8.7 and most of them were married (313 or 84.5%). The other demographical variables are shown in Table 1. Moreover, the score of partnership working was 51.6 ± 6.7 and it had a positive association with the age of the participants ($P=0.01$). Besides, the association between systemic thinking and partnership working is shown in Table 1.

The mean score of partnership working for the

Table 1: Mean of systemic thinking and partnership working based on the demographic variables of the University’s staff in Zahedan in 2015

Variables	component	Frequency (%)	Partnership working		Systemic thinking	
			Mean+SD	P value	Mean+SD	P value
Gender	male	145 (39.1)	53.1 (5.4)	0.58	58.1 (6.4)	0.44
	female	225 (60.8)	49.9 (7.2)		55.2 (7.0)	
Married	Single	57 (15.4)	50.8 (5.7)	0.66	57.4 (5.6)	0.04*
	Married	313 (84.5)	51.2 (6.9)		56.1 (7.1)	
Education	Upper diploma	101 (27.2)	52.1 (9.4)	0.21	55.7 (6.3)	0.26
	BSc.	224 (60.5)	50.8 (5.3)		56.8 (7.1)	
	M.Sc.	32 (8.6)	50.2 (5.8)		54.7 (7.5)	
	PhD.	9 (2.43)	56.5 (0.7)		55.4 (3.5)	
Job position	Employee training	15 (4.5)	51.7 (5.5)	0.26	54.6 (1.0)	0.35
	Nurse	153 (41.3)	50.3 (5.9)		56.0 (7.1)	
	Staff	83 (22.4)	51.9 (7.4)		57.5 (6.6)	
	Health worker	119 (32.1)	51.5 (7.3)		56.1 (6.1)	
Job experiences	>5	99 (26.7)	50.2 (6.2)	0.27	57.1 (5.8)	0.34
	5-10	110 (29.7)	50.8 ()		55.2 (8.4)	
	10-15	52 (14.5)	51.6 (5.1)		56.4 (6.6)	
	15-20	29 (7.8)	50.8 (8.5)		56.0 (4.8)	
	< 20	80 (21.6)	52.4 (4.9)		56.9 (6.9)	

*F=4.17

362 participants was higher than the basic score (The basic score for partnership working was 40; in fact, higher scores mean appropriate partnership working and the lower scores mean weak partnership) and it was lower than 40 for eight participants. In addition, there was a positive association between systemic thinking and partnership working (RR=0.21, P=0.01) and also systemic thinking had an association with the high partnership working (F=3.60, P=0.01).

As shown in Table 2, age, sex and systematic thinking were the variables which were put in the regression test, using the enter method. The results showed a statistically significant relationship between the variables and partnership working. According to the findings, partnership working in the male employees was more than female ones. In addition, older employees had more partnership than younger ones in ZAUMS.

Discussion

The study showed that there was a statistically significant difference between systemic thinking and partnership working in ZAUMS. In fact, higher systematic thinking among the staff can lead to higher partnership and improvement in the delivery of quality services in the health system. *Washington* found a positive relationship between systemic thinking and organizational

performance both in the short and long run.²⁰ In addition, a study indicated that systematic thinking skill in hospital manager was more than the mean.²¹ Since systemic thinking is an approach to problem solving¹ and it can improve the organizational efficacy,⁴ it is essential for healthcare managers to improve the staff’s viewpoint about systemic thinking. Moreover, several authors have claimed that systemic thinking had an effect on the innovation and staff performance.^{22,23}

Systemic approach is needed to fully understand the processes of health, disease, and dysfunction, and the many challenges in medical research and education.²⁴ Moamaie found that systemic thinking had a higher applicability between managers more than other strategic thinking dimensions in the medical universities in Iran.¹⁸ Therefore, systematic approach considers the organization as a system of continuous and connected components that work together, resulting in increased staff performance in the health system.

A project in the United State showed that systems thinking can serve as a foundation for more effective public health efforts to combat tobacco use.¹⁰ An organization with higher systemic thinking is called “open system”. This means that the system interacts with its environment and responds to changes within and outside the system. The system adapts to its

Table 2: Regression between partnership working with the staff’s demographic variables and systemic thinking in ZAUMS, 2015

Independent variables	Partnership working B	SE	Beta	T	P value
Age	0.099	0.041	0.126	2.43	0.01
Sex	-2.48	0.74	-0.17	-3.35	0.01
Systemic thinking	0.184	0.51	0.187	3.58	0.01

environment, creates learning and evolves towards new patterns of behavior.¹²

In this study, the score of partnership working for the majority of participants was good. Due to the importance of partnership in the organization, especially in the health system, it is recommended that healthcare managers should sustain and promote the employees' partnership through facilitating positive communication among the staff and increasing the systemic thinking in the organization. However, a study in Iran showed that partnership in hospital employees was in a moderate range.²⁵

According to the results, the partnership working is higher in older staff rather than younger ones. It could be because most of the participants were middle-aged. Shams found that there was a reverse association between age and partnership working in the health systems' employees.²⁵

The study showed that partnership in the male staff was statistically higher than the females. Maybe, the males tend to have more communication with their colleagues. On the contrary, Shams found that there was no difference between males and females in partnership working.²⁵

According to the findings of the study, systemic thinking was statistically higher in the single staff than married ones. Ghorbankhani found that the gender of the staff had not any association with systemic thinking in the organization.² A study in Iran showed that the male staff had higher strategic thinking than females because of the challenging behavior of the males in the organization.²⁶

Limitations

The lack of studies about systemic thinking and partnership was the main limitation in this study. In this regard, the researchers used close studies in this scope. Moreover, a cross-sectional design was used, so it could not yield any information on causal associations which was regarded as another limitation in the present study.

Conclusion

The study showed that systematic thinking had a positive association with the employees' partnership working. Moreover, the male staff had better systematic thinking. It is recommended that the managers should promote systematic thinking in the staff, especially in the females, for better partnership and efficacy in the organization. In addition, it should be applied in other medical universities and other health organizations for future studies.

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