



Original Article

Community health workers capacity in teaching skills and work-related stress: A study in Iranian health system

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Abstract

Introduction: This study aimed to examine the associations between teaching skills and job-related stress among the mentors of community health workers (M-CHWs).

Methods: This cross-sectional study was conducted from May to December 2018 in Iran. Through census, all 110 M-CHWs from the rural health worker educational institutions (RHWEIs) were invited to participate in the study. Applying structured questionnaires, data were collected through face-to-face interviews.

Results: The analysis yielded a maximum canonical correlation coefficient of .96 between teaching skills and work-related stress which was statistically significant (Wilks's $\lambda = .014$ criterion, $F(42, 317.71) = 11.29, P < 0.001$). Results showed moderate to strong significant relationships between subscales of teaching skills and work-related stress ($P < 0.05$).

Conclusion: Our findings call attention to the relationships between teaching strategies, teaching program, and professional knowledge by total teaching skills. The M-CHWs' well understanding of their role was correlated with less experiencing work-related stress.

Keywords: Community health worker, Mentor, Teaching, Skills, Work related stress

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Introduction

One of the major worries for occupational safety and health is work-related stress which is a harmful physical and emotional response to a conflict between work demands on the employee and the amount of control s/he has over meeting the demands.¹ According to the EU-OSHA 2013 poll, stress is a common concern, more than half of workers and more than forty percent of workers could not appropriately handle stress in their workplace.² Numerous studies have indicated that workplace stress factors can play a role in the occurrence of physical and psychological disorders.^{3,4} Specifically, too much workload and high levels of time pressure, conflicting roles, and poor social support (both social relationships and support from the management and colleagues) arisen as risk factors which could strengthen pain perception and increase the probabilities of suffering from physical and psychological symptom such as musculoskeletal symptom and depressing sigh.⁵ Stress-related disorders are so public that they are assessed to cause half of all work absences and decrease organizational health

and productivity,⁶ and is prevalent among teachers in educational settings.⁷

Teaching is considered a stressful occupation, and high levels of unmanaged work-related stress have been associated with undesirable work and health outcome.⁸ Kyriacou defines teacher stress as "the experience by a teacher of unpleasant, negative emotions, such as anger, anxiety, tension, frustration or depression, resulting from some aspect of their work as a teacher".⁹ A previous study showed that 79.3% of the Iranian academic teachers had at least a low level of occupational stress.¹⁰ In a study conducted among 664 elementary and secondary school teachers from British Columbia, Canada, occupational stress was found to be negatively associated with psychological well-being.¹¹

Teaching to community health workers (CHWs) is one of the key aspects that usually seeks to progress new knowledge and skills related to specific tasks and to increase capacity to communicate with and serve local people.¹² CHWs have a main role in improving contact with basic healthcare services and mobilizing



community actions on health. In Iran, CHWs called *behvarz* in Persian, are full-time employees of the health system selected from their community. They work in the rural health houses, where is the most peripheral health delivery facility in the rural areas of Iran.¹³ The mentors of community health workers (M-CHWs) are full-time employees of the health system that should get a qualification in a public health-related field and experience a minimum of 3 years of work in a local primary health care system.¹³ M-CHWs are responsible for recruiting eligible *behvarz*, preparing lesson plans, educational and evaluation checklists CHWs' output skills about primary care.¹⁴

Considerable attention should be made to the M-CHWs to make sure that the training skills match with the educational qualification of CHW students as well as community health needs. Moreover, studies have revealed the correlation between teaching skills and work-related stress among the majority of populations especially school and academic teachers,¹⁵ but, to date, no study investigated such associations among M-CHWs. Therefore, we aimed to explore the associations between teaching skills and work-related stress among M-CHWs.

Materials and Methods

Study design and participants

This cross-sectional study was conducted in Hamadan, Iran. Data were collected from May to December 2018 by face-to-face interviews, using structured questionnaires. Through census, all 110 M-CHWs from the rural health worker educational institutions (RHWEIs) were invited to participate in the study. The response rate was 73%. Inclusion criteria included: being a M-CHW in the RHWEIs, having job experience over 6 months, and being a consent to participate in the research. Exclusion criteria were failure to complete the questionnaire (failure to answer up to 20% of questions). Informed consent was obtained from all study participants before collecting the information.

Measurement

Background data included age, gender, marital status (single/married), educational status (bachelor/master of science), daily working hours, job experience (years), place of residence (urban/rural), and monthly income were determined for the included items.

Health and safety executive's stress indicator tool

The Health and Safety Executive Stress Indicator Tool (SIT) is a standard questionnaire 35-item questionnaire to assess exposure to seven common psychosocial factors involved in the genesis of work-related stress.¹⁶ Persian version that its psychometric characteristics were approved previously, was used for measuring work-related stress.¹⁷ The HSE is a 35-item, self-report

questionnaire that captures seven subdomains each one corresponding to a different potential stressor: Demands (8 items), Control (6 items), Superiors Support (5 items), Colleagues Support (4 items), Relationships (4 items), Role (5 items) and Change (3 items). Responses are scored from 1 (never) to 5 (always).

The total score ranged from 35 to 175, with higher scores indicating a lower level of work-related stress. The total reliability coefficient was 0.71. Cronbach's alpha for the subscales scored following: demands (0.85), control (0.87), superior support (0.75), colleague's support (0.63), relationships (0.73), role (0.92), and change (0.52).

Teaching Skills Questionnaire

A 34-item researcher-made questionnaire measured teaching skills at six dimensions including professional knowledge (7 items), teaching program (5 items), teaching strategies (5 items), resource management (8 items), learning assessments (3 items), and professional responsibility (6 items). A five-point Likert-type scaling 1 (never) to 5 (always). The total score ranged from 34 to 170 which the higher the score indicating a higher level of teaching skills. Cronbach's alpha for the total scale was 0.83. Cronbach's alpha for the subscales calculated the following: professional knowledge (0.79), teaching program (0.77), teaching strategies (0.85), resource management (0.77), learning assessments (0.81), and professional responsibility (0.79). Validity of this scale was approved with 10 expert panel.

Statistical analyses

Data were coded and entered into the Statistical Package for the Social Sciences version 23.0 (SPSS). Analytical statistics are reported as mean and standard deviation (SD) for continuous data using independent samples t-test, one-way analysis of variance (ANOVA), and as frequency and percentage for discrete data. Inferential statistics were applied using analysis of Pearson's and canonical correlation test. The normality of the data was checked with the Kolmogorov-Smirnov test and the homogeneity of variance between groups were tested using Levens' test. The level of significance was set, a priori, at 0.05.

Results

As shown in Table 1, the mean (SD) age of the M-CHWs was 40.59 (7.30) and 42.5% were 35-46 years old. The majority of M-CHWs were female (74%) and married (78%), and 60% had teaching experience for more than 5 years and were teaching more than 6 hours a day. There were no significant differences ($P > 0.05$) between demographic characteristics with teaching skill and work-related stress (Table 1). However, teachers who were living in rural areas had more teaching skills than those in urban areas ($P = 0.001$). The mean (SD) for

Table 1. Differences in work related stress and teaching skills by socio-demographic characteristics of the respondents (n = 80)

Variables	Frequency (%)	Teaching skills Mean (Standard Deviation)	P value	Job stress M(SD)	P value
Age					
25-35	22 (27.5)	128.3 (16.9)	0.531 ^a	115.6 (14.1)	0.889 ^a
36-45	34 (42.5)	130.8 (21.7)		113.8.6 (13.6)	
46-55	24 (30)	134 (16.6)		115.2 (16.5)	
Gender					
Male	21 (26)	112.7 (16.7)	0.663 ^b	112.7 (16.7)	0.459 ^b
Female	59 (74)	115.5 (13.6)		115.5 (13.6)	
Educational level					
BS (Bachelor's degree)	58 (72.5)	130.1 (20)	0.351 ^b	114.9 (15.5)	0.887 ^b
MS (Master's degree)	22 (27.5)	133.7 (15.9)		114.4 (11.7)	
Marital statuses					
Married	63 (79)	132.5 (20)	0.226 ^b	114.8 (15.3)	0.950 ^b
Single	17 (21)	125.8 (13.5)		114.51 (10.9)	
Teaching experience					
≤5years	32 (40)	130.7 (15.7) ^a	0.375 ^b	116.1 (14.9)	0.699 ^a
6-10 years	24(30)	128.5 (21.9)		112.7 (14.21)	
≥11years	24 (30)	134.2(19.9)		115(14.4)	
Daily teaching Time					
6 hours or less	31 (38.8)	129(16.2)	0.876 ^b	117.4 (15.03)	0.160 ^b
More than 6 hours	49 (61.3)	132.8(20.9)		112.6 (14.29)	
Place of residences					
Hamadan	61 (76.3)	125.7(17)	0.001	113.8 (14.9)	0.322 ^b
Outside Hamadan	19 (23.8)	148.4(14)		117.6 (12.89)	
Family members					
<4 members	66 (82.5)	127.6(18.9)	0.701 ^b	114.37 (14.4)	0.587 ^b
>4 members	14 (17.5)	128.9(16.7)		116.7 (15.2)	
Monthly income					
≤25000000	35 (44)	129.5(17.3)	0.646 ^b	113.8 (13.9)	0.627 ^b
>25000000	45 (56)	132.3(20.2)		115.4 (15.0)	

^a ANOVA; ^b Independent *t* test

teaching skill and work-related stress were 130.63 (14.18) and 114.78 (14.49) respectively. Results showed that M-CHWs had high teaching skills and low work-related stress.

Based on the Pearson correlation coefficient test, results showed that there were moderate to strong significant ($P < 0.05$) relationships between the subscales of teaching skills and work-related stress. Professional knowledge ($r = 0.506$, $P < 0.01$), Managing resources ($r = 0.513$, $P < 0.01$), and Assessment of learning ($r = 0.513$, $P < 0.01$) had the highest levels of association with work-related stress. M-CHWs with more teaching skills had less work-related stress (Table 2).

A canonical correlation analysis was applied, as a multivariate analysis of correlation, to estimate the orthogonal linear combinations of the variables within each set that best explain the variability both within and between sets of these two multidimensional variables

(work-related stress and teaching skills). The analysis yielded a maximum canonical correlation coefficient of 0.96 which was statistically significant (Wilks's $\lambda = 0.014$ criterion, $F(42, 317.71) = 11.29$, $P < 0.001$). Figure 1 presents all the canonical loadings for the best-fitting model along with the maximum canonical correlation coefficient. Having teaching strategies ($r = 0.942$, $P < 0.01$), Having teaching program ($r = 0.637$, $P < 0.01$) and professional knowledge ($r = 0.619$, $P < 0.01$) had the highest correlation with teaching skills. Moreover, among work-related stress subscales, the role ($r = 0.981$, $P < 0.01$) and superior support ($r = 0.577$, $P < 0.01$) had the high correlations with total work-related stress.

Discussion

This study was conducted to investigate the correlation between work related stress and teaching skills among M-CHWs. To our knowledge, this is a unique study that

Table 2. Correlation coefficients of sub scales of teaching skills and work-related stress (n=80)

Variables	Professional knowledge	Teaching program	Teaching strategies	Managing resources	Assessment of learning	Professional responsibility	Total score
Role	0.505**	0.513**	0.929**	0.433**	0.322**	0.313**	0.542**
Relationships	0.003	-0.159	-0.149	-0.103	-0.222*	-0.173	-0.141
Superiors support	0.648**	0.721**	0.348**	0.756**	0.667**	0.717**	0.857**
Colleagues support	0.562**	0.520**	0.248**	0.493**	0.395**	0.284**	0.552**
Control	0.424**	0.483**	0.234**	0.437**	0.318**	0.204	0.469**
Demands	0.087	0.073	-0.057	0.115	-0.078	0.001	0.075
Change	0.311**	0.370**	0.312**	0.302**	0.278*	0.173	0.363**
Total score	0.506**	0.494**	0.272*	0.513**	0.513**	0.256*	0.537**

Based on Pearson correlation test; **<0.01; *<0.05.

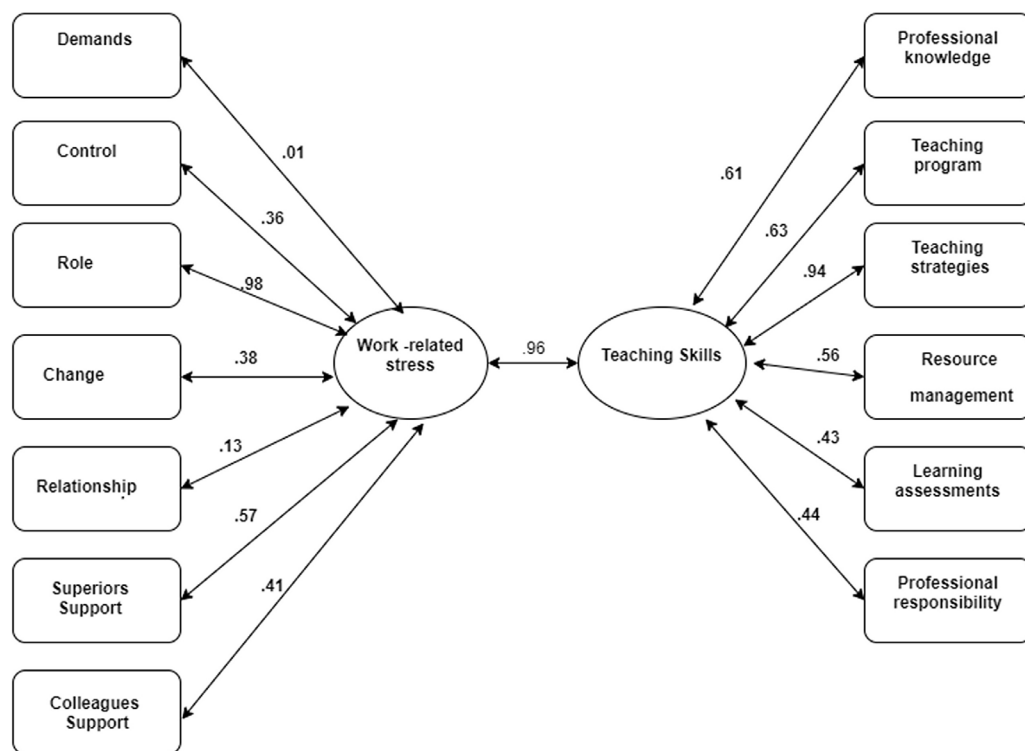


Figure 1. Canonical correlation between study variables. A maximum canonical correlation coefficient of 0.96 was found between teaching skills and work-related stress (Wilks’s $\lambda = .014$ criterion, $F(42, 317.71) = 11.29, P < 0.001$). All the canonical loadings for the best-fitting model along with the maximum canonical correlation coefficient were illustrated

examines this correlation among M-CHWs. According to the results of this study, no relationship was found between demographic factors and both work-related stress and teaching skills among M-CHWs other than between teaching skills and place of residence. The trainers that were from rural had more teaching skills than trainers from the city (Hamadan), which may be because the target group of these trainers is rural populations and the cultural fit between the trainer and the learner is a factor in encouraging skill enhancement. So that cultural background might build a relationship with the trainers, improve social and interpersonal communication skills, and provide an enjoyable training environment for M-CHWs.¹³

In assessing the correlation between teaching skills

and its subscales, teaching strategies had the highest relationship with teaching skill. Studies indicated that teaching strategies like interactive small group learning might be most effective at achieving competency in clinical skill.¹⁸ Effective teaching strategies comes also from an effective teaching environment, goals of the session, effective teaching methods, didactic skills, bedside skills, and fostering reflection.¹⁹ Teaching programs and professional knowledge had also a strong relationship with teaching skills. Accordingly, a previous study reported that creative teaching programs such as clear goals and plans increased the teacher’s teaching skill and competency.²⁰ A recent study found that the teachers’ professional knowledge can increase their classroom practice and skills which resulted in student

achievement.²¹

Although different stressors can have a relationship with work-related stress, the role dimension had a strong correlation with it. When trainers clearly know what is expected of them at work and or they are clear about the goals and objectives for their department and/or organization, it may lead to experiencing less stress.¹⁶ So, eliminating ambiguity and conflicts in the role of workers in their job and organization decrease their stress and improves their performance.⁵ Another factor that decreases the stress of M-CHWs was the superior support dimension. Managerial support from trainers such as information support to encourage their effort or emotional support to solve a problem are the effective factors in decreasing work-related stress.¹⁶ Studies have indicated the senior-level support can prevail over the stress of employees.²² So, enhancing the ability of managers to have appropriate communication skills with employees in the form of in-service psycho-educational programs can be effective in reducing stress and employee productivity.

The other main result of this study was that the M-CHWs had a high level of teaching skill and less experience of work-related stress and there was a strong correlation between them. This is in line with other studies that indicated this correlation, among different populations and age groups.²²⁻²⁴ The high-level political support given in Iran to comprehensive primary health care, including the RHWEIs, which is a demonstration of how much support can lead to a strong health sector that contributes to improving population health outcomes and reducing urban-rural health inequities. These achievements of RHWEIs might have a main role in improving trainer's self-efficacy as an incentive to improve their skills and experience less stress.

Although the findings revealed a correlation between subdomains of teaching skill and work-related stress, the strongest relationship was found between the superior supports with all sub-domains of teaching skills exception of teaching strategies. It is consistent with the evidence that superior supports encourage trainers in achieving professional knowledge and responsibility, appropriate management of the human resource, and assessment of learning.^{21,25} A previous study indicated that given adequate time and support, trainers can strengthen skills related to classroom management and teaching program. In other words, trainers will be better prepared for student teaching.²⁵

There may be some limitations in performing this study. First, due to the correlation design, it is recommended future studies focus on relationships between work-related stress and teaching skill along with their subdomains among M-CHWs through interventional studies to determine the direction of causality between them. Second, the low sample size

is the weakness of this study may influence the study power. Third, because of the non-random nature of the sampling technique, external validity was limited to the M-CHWs; thus, replicating the study is recommended to increase the generalizability of the results. Finally, the fact that this study was conducted on M-CHWs limits the generalization of the results to other trainers.

Conclusion

In conclusion, the results of this study indicated a close relationship between work-related stress and teaching skill in M-CHWs. Our findings call attention to the relationship between teaching strategies, teaching programs, and professional knowledge by total teaching skill. The M-CHWs' well understanding of their role was correlated with less experiencing work-related stress. Furthermore, the support of M-CHWs from their superior/ senior managers had a strong correlation with high professional knowledge and responsibility, teaching planning and assessment, and human resource. Therefore, researchers should consider these factors to design qualified interventional research and programs, as well as high political support, should provide to M-CHWs via in-service educational courses to enhance teaching skill and mental health among M-CHWs.

Authors' Contribution

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Supervision: Zeinab JavadiVala.

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Visualization: Shayesteh Shirzadi.

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Writing—review & editing: Zeinab JavadiVala, Devender Bhalla, Shayesteh Shirzadi.

Competing Interests

The authors have no conflicts of interest to declare.

Ethical Approval

The study was approved by the Ethical Committee, Tabriz University of Medical Sciences, Tabriz, Iran (code number=IR.TBZMED.REC.1397.699).

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