

Sources of Stress and Coping Strategies among Iranian Physicians

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Abstract

Background: Physicians are at risk of having high levels of stress which affect their performance. Finding the stressors and the coping skills to manage stress could be used to develop program to decrease stressful situation. No study has been done on Physicians' stress and coping in Iran. The main objective of this study is to find out the main stressors and coping strategies among Iranian Physicians working in hospital in Tehran-Iran.

Methods: A cross-sectional study was performed on 780 Physicians, using a questionnaire consisted of two sections; The first section were the stressors which included 67 questions and The second section were The Brief COPE with 28-items for assessing a broad range of coping behaviors among respondents.

Results: A total of 1100 questionnaires were distributed to all the available Physicians in the hospitals selected. 780 Physicians returned complete questionnaires with observed response rate of 75%. The majority of respondents (56.9%) were women. The first 3 sources of stress in workplace (Job stressors) are physical environment problem (75%), too much volume of work and poorly paid. The main sources of stress outside the work place (non-job stressors) ranked by Physicians were; financial problem (9.09), not enough time to spend with family (8.87), conflicts with household tasks (7.36). The top five coping strategies used by Iranian Physicians were Behavioral Disengagement, Planning, Instrumental support, Acceptance, and turning to religion.

Conclusions: This study revealed that both workplace and non-job sources of stress can affect the Physicians performance and there is an association between gender and coping skills.

Keywords: coping, physicians, Iran, job stressors, non-job stressors, stress

1. Introduction

Stress has been identified as a 20th century disease (Evans & Kelly, 2004; Gobbur, Nigudgi, & Reddy, 2016). It is defined as a natural and anticipated feature of the experience of work and life and it is very important to know that all stress results in negative consequences (Kendall, Murphy, O'Neill, & Bursnall, 2000). Stressors can be broadly defined as situations or events that have the potential to affect health outcomes (Barling, 1990).

According to the latest stress statistics in American Psychological Association, one of the most stressors among top causes of stress in US, is the work (American Psychological Association, 2015). Work-related stress is a pattern of physiological, emotional, cognitive and behavioral reactions to some extremely taxing aspects of work content, work organization and work environment (Houtman, Jettinghof, & Cedillo, 2007).

Various characteristics of working/life may contribute to occupational stress. These characteristics may be grouped with much overlap into five general categories: a) Career development, b) Role of the individual, c) Job task or assignment, d) Working environment and conditions and e) Shift work (LaDou, 2004).

Occupational stress is a recognized problem in health care. According to literatures, exposure to stress is common among physicians and health workers (Gholamzadeh, Sharif, & Rad, 2011; Iliceto et al., 2013;

Newbury-Birch & Kamali, 2001; Ruotsalainen, Verbeek, Mariné, & Serra, 2016; Saravanan & Wilks, 2014; Shaw, Brown, & Dunn, 2013; Voltmer, Rosta, Siegrist, & Aasland, 2011; Wang et al., 2011).

Studies of stress among doctors have shown that poor relationship with co-workers, supervisor and subordinates such as nurses is one of the occupational stressors for doctors (Virtanen et al., 2008). As for career development, lack of recognition and poor pay and benefit are among the stressors experienced by doctors (Burbeck, Coomber, Robinson, & Todd, 2002; Khawaja & Dempsey, 2007).

Health care institutions in developing countries usually manage occupational stress among their doctors based on the findings and interventions by developed countries (Burbeck et al., 2002; Khawaja & Dempsey, 2007; Ruotsalainen, Verbeek, Mariné, & Serra, 2015; Vanagas & Bihari-Axelsson, 2005). This is due to the fact that stress among doctors has been widely studied in the developed countries and based on these studies, occupational stress management and interventions were developed. Nevertheless, some of these findings and interventions are not in tandem with the indigenous psychology of the local community. Hence, the effort given might not yield the best results in optimizing the quality of life in this group of human resources.

Since, the emotional and physical pressures caused by stress are undesirable and annoying, people to do activities that are motivated to reduce their stress. All these activities that are performed to reduce stress are called coping strategies (Azizi, 2011). Coping strategies are the specific efforts, both behavioral as psychological, that individuals employ to master, tolerate, reduce, or minimize stressful events (Watson, Logan, & Tomar, 2008).

The aim of this study is to determine stressors and coping strategies and their associated factors among Physicians who are working in hospitals in Iran, based on instrument suitable and more appropriate for local physicians. The findings of this study could be used to develop program to improve the psychological well-being of physicians. If the situation of Physicians as a whole and quality of life were improved, the stress could be decreased consequently. This research tried to cover most of the factors that have association with occupational stress and/or can affect it. The study was conducted in Tehran, since it is the capital city where more hospitals and samples are available.

2. Method

A cross-sectional study was conducted on 780 Physicians working in the main hospitals in Tehran University of Medical Sciences (4 small hospitals which have equal/ less than 100 beds and 4 large hospitals which have more than 100 beds) which were selected by the Cluster sampling method. Duration of the study was from 2008 to 2012.

Research instrument was a questionnaire consisted of, socio-demographic information, the stressors using Persian version of Doctors' stress questionnaire which is 67 items scale questionnaire includes two sections. The first section (job stressors) is 55 items. The second section (non-job stressors) is 12 items. Each item is scored on a four point scale. The reliability of Coefficients alpha (Cronbach's alpha coefficient) for sources of stress (job stressors and non-job stressors) in this study was 0.91.

In this study, coping strategies commonly utilized were assessed using the Brief COPE scale, which is an abbreviated version of the COPE Inventory. The Brief COPE is used to assess a broad range of coping behaviors among adults with or without clinical conditions. It consists of 28 items, and each item is rated on a 4-point Likert scale ranging from "I have not been doing this at all (score 1)" to "I have been doing this a lot (score 4)". The higher score indicates greater coping by the respondents. The items were scored to produce 14 dimensions, each reflecting the use of a coping strategy: active coping, planning, acceptance, denial, self-distraction, use of substance, use of emotional support, use of instrumental support, behavioral disengagement, venting, positive reframing, humor, religion, and self-blame. Minimum score was 2 and maximum score was 8. Mean score interpretations were as below: 2.00=havn't been doing this at all, 2.01 to 4.00=have been doing this a little bit, 4.01 to 6.00 = have been doing this a medium amount, 6.01 to 8.00 = have been doing this a lot. The Brief Cope questionnaire has been used and validated in Iran before by Lotfizadeh and Aghayousefi.

The results of pilot study were analyzed by using SPSS version 16 for determining the reliability of each variable by alpha cronbach test.

3. Result

3.1 Socio-Demographic Characteristics

A total of 1,100 questionnaires were distributed to all the available Physicians in the hospitals selected. Seven hundred and eighty Physicians returned complete questionnaires with observed response rate of 75%.

Comparison between the non-respondents and respondents showed no difference in their demographic or work characteristics information. In this study, 780 Physicians were considered. A total of 43.1% of the study samples were men and 56.9% were women. Most of the Physicians (46.2%) were in 30 to 39 years age group and married (75.4%), and 50.8% Physicians reported they had children. 43.1% stated that they get salary between 500 to 1000 US Dollars, 84(10.8%) Physicians get 1000 to 2000, and 228(29.2%) get more than 2000 USD (Table 1).

Table 1. Socio-Demographic Profile

	N	%
Gender		
Male	336	43.1
Female	444	56.9
Age (year)		
<30	120	15.4
30-39	360	46.1
40-49	216	27.7
>=50	84	10.8
Marital status		
Single	192	24.6
Married	588	75.4
Have child		
Yes	396	50.8
No	384	49.2
Income (USD)		
<500	132	16.9
500-999	336	43.1
1000-2000	84	10.8
>2000	228	29.2

Results of the study showed that of 780 Physicians who work in hospitals, 30.8% work in small hospitals and 69.2% of Physicians work in large hospitals with more than 100 beds. 61.7% of respondents work in medical field. 40% of them were general practitioner and 59.7% of the Physicians who returned questionnaire stated that they have less than ten years' experience. It means that more than half of the respondents work less than ten years as physician. 64.5% Physicians work in current work place for less than 5 years. 55.4% of them work for more than 50 hours per week (Table 2).

Table 2. Job Characteristics Profile

	N	%
Size of workplace		
≤100 beds	240	30.8
>100beds	540	69.2
Field of work		
Surgical	299	38.3
Medical	481	61.7
Professional Status		
Specialist	264	33.9

Resident	203	26.0
General Practitioner	313	40.1
Experience(year)		
<10	467	59.9
10-20	240	30.8
>20	73	9.3
Duration of Work(year)		
<5	503	64.5
5-10	228	29.2
>10	49	6.3
Hours of work per week		
<40	156	20.0
40-49	192	24.6
50-100	276	35.4
>100	156	20.0

3.2 Sources of Stress among Physicians

The ten most important sources of stress in work place (in order) were; physical environment problem (75%), too much volume of work (74%), poorly paid (72%), lack of appreciation (68%), inadequate supporting/nursing staff (65%), lack of opportunities in training (65%), poor prospect of promotions (60%), insufficient input into the management (58%), patients or relatives having expectations (57%), feeling under pressure to meet deadlines (55%), and keeping up to date with current clinical practices (51%) (Table 3).

Table 3. Top ten job stressors as stated by Physicians (N=780)

Source of stress	N	%
1. Physical environment problem	588	75
2. Too much volume of work	576	74
3. Poorly paid	564	72
4. Lack of appreciation	528	68
5. Inadequate supporting / nursing staff	504	65
6. Lack of opportunities in training	504	65
7. Poor prospect of promotions	468	60
8. Insufficient input into the management	456	58
9. Patients or relatives having expectations	444	57
10. Under pressure to meet deadlines	432	55
11. Keeping up to date with current clinical practices	396	51

The first main stressor outside the work place (non-job stressors) was financial problem (mean rank=9.09) followed by not enough time spend with family and household task (Table 4).

Table 4. Non job stressors ranked as stated by Physicians

Non job stressor	Mean Rank
1. Financial problem	9.09
2. Not enough time spend with family	8.87
3. Household task	7.36
4. Personal problem cause family strain	7.02
5. House repair	6.91
6. Friend conflict	6.45
7. Danger neighbor	6.20
8. Relatives/in-laws problem	5.50
9. Spouse conflict	5.35
10. Sexual problem/conflict	5.20
11. No babysitters	5.12
12. Children problem	4.93

3.3 Coping Strategies Commonly Used by Physicians:

The rank of coping strategies based on the mean score as rated by the Physicians has been showed in Table 5. The table shows that among coping skills, behavioral disengagement, planning, instrumental support, acceptance, religion, and active coping, were more used compared to other strategies.

Table 5. Mean of coping strategies were used by respondents

Rank	Coping strategy	Mean
1	Behavioral Disengagement	7.87
2	Planning	7.50
3	Instrumental support	7.45
4	Acceptance	7.35
5	Religion	7.09
6	Active coping	6.93
7	Self-blame	6.91
8	Positive reframing	6.36
9	Emotional support	6.32
10	Denial	6.20
11	Humor	6.20
12	Venting	6.12
13	Substance use	5.45
14	Self-distraction	5.39

*Maximum =8 and minimum =2.

3.4 Association between Socio-Demographic Factors and Coping Strategies

The results revealed that 7 out of 14 coping strategies variables were significantly associated with gender. These coping skills were active coping, behavioral disengagement, self-distraction, venting ($p < 0.001$) and denial ($p = 0.027$), humor ($p = 0.001$), planning ($p = 0.012$). Active coping was used by men more than women, and the others were used by women more than men.

Also among coping skills, active coping, instrumental support, planning, acceptance ($p < 0.001$) and denial ($p = 0.007$), substance use ($p = 0.006$), emotional support ($p = 0.005$), self-distraction ($p = 0.039$), venting ($p < 0.044$), religion and positive reframing ($p = 0.001$) were significantly associated with marital status.

Results of the study showed that some of the coping strategies namely active coping, denial, venting, religion, positive reframing ($p < 0.001$) and substance use ($p = 0.018$), behavioral disengagement ($p = 0.001$), acceptance ($p = 0.013$), self-distraction ($p = 0.001$), self-blame ($p = 0.011$) were significantly associated with having children.

As we see in Table 6, there was a significant relationship between age of the respondents and coping strategies.

Table 6. Association between age and coping strategy

Type of coping	Test	p- value
Active coping	185.669	* < 0.001
Denial	45.637	* < 0.001
Substance use	3.392	* < 0.001
Emotional support	50.539	* < 0.001
Instrumental support	11.098	* < 0.001
Behavioral Disengagement	87.367	* < 0.001
Planning	127.533	* < 0.001
Humor	104.757	*0.023
Acceptance	10.591	*0.014
Self-distraction	22.801	*0.001
Venting	17.827	*0.009
Religion	154.857	* < 0.001
Self-blame	16.604	*0.034
Positive reframing	68.892	* < 0.001

Kruskal-Wallis unidirectional test.

3.5 Association between Coping Strategies and Job Characteristics

Results showed that 11 out of 14 coping strategies were significantly associated with size of workplace. These strategies were substance use, emotional support, self-distraction, humor ($p < 0.001$) and denial ($p = 0.019$), behavioral disengagement ($p = 0.002$), instrumental support ($p = 0.040$), planning ($p = 0.044$), religion ($p = 0.004$), self-blame ($p = 0.001$) and positive reframing ($p = 0.009$).

As also, results of the study revealed that there was a significant relationship between field of work (medical or surgical) and some type of coping strategies. These strategies are substance use, emotional support, instrumental support, behavioral disengagement, humor, self-blame ($p < 0.001$) and planning ($p = 0.009$), self-distraction ($p = 0.008$), venting ($p = 0.005$).

The results of this study showed that the relationship between designation with active coping, denial, emotional support, behavioral disengagement, planning, humor, self-distraction, venting, religion, self-blame, positive reframing ($p < 0.001$) and instrumental support ($p = 0.004$), acceptance ($p = 0.005$) was statistically significant.

There was a statistically significant relationship between income and variables like active coping, emotional support, instrumental support, behavioral disengagement, planning, humor, self-distraction, religion, positive reframing ($p < 0.001$) and acceptance ($p = 0.013$), venting ($p = 0.006$), substance use ($p = 0.001$).

Results also revealed that there was statistically significant relationship between experience and some coping components. These skills were active coping, emotional support, instrumental support, behavioral disengagement, planning, humor, self-distraction, religion, self-blame, positive reframing ($p < 0.001$) and denial ($p = 0.004$), substance use ($p = 0.001$).

Results of the study showed that there was a significant association between duration of work in current

workplace and some types of coping skills like; active coping, denial, emotional support, instrumental support, behavioral disengagement, Planning, self-distraction, Religion, positive reframing ($p < 0.001$) and venting ($p = 0.001$), substance use ($p = 0.018$).

In this study the variable analysis revealed that most of coping strategy variables are significantly associated with working hours in a week. These strategies were active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, planning, humor, self-distraction, venting, religion, positive reframing ($p < 0.001$) and self-blame ($p = 0.025$).

4. Discussion

Results of this study showed that the ten most important sources of stress in work place (in order) were; physical environment problem (75.0%), too much volume of work (74.0%), poorly paid (72%), lack of appreciation (68.0%), inadequate supporting / nursing staff (65.0%), lack of opportunities in training (65.0%), poor prospect of promotions (60.0%), insufficient input into the management (58.0%), patients or relatives having expectations (57.0%), feeling under pressure to meet deadlines (55.0%), and keeping up to date with current clinical practices (51.0%).

These stressors were reported as important sources of stress in some studies. It means that at least one or two of them reported in each study, but not all of them due to different tools (questionnaire) used in each study. Inadequate resources, concern about money, exposure to toxic substances, and exposure to infection were mentioned as important sources of stress by all categories of hospital workers (NIOSH, 2008). Increasing workload was found to be an important source of stress (Young, Leese, & Sibbald, 2001). The working environment was mentioned as one of the most important stressors (Sharp, 2013). Insufficient resources were one of the five most important stressors experienced by doctors in Greece (Antoniou, Davidson, & Cooper, 2003). Also in the another study, feeling poorly paid was mentioned as an important stressor among doctors (Rössler, 2012).

The top five coping strategies used by Iranian doctors were Behavioral Disengagement, Planning, Instrumental support, Acceptance, and turning to religion, that is almost the same as previous studies (Salam, Yousuf, Bakar, & Haque, 2013). But different from a study in which religious coping, active coping, positive reframing, and acceptance, were commonly used (Al-Dubai & Rampal, 2012).

Association between coping strategies and socio-demographic factors were assessed in this study, and the results revealed that 9 out of 14 coping strategies variables were significantly associated with gender. These coping skills were; active coping, behavioral disengagement, denial, humor, planning, self-distraction, and venting. Active coping was used by men, more than women and others were used by women more than men. This is in contrast to a previous study in which male students used active coping less, and alcohol or substance consumption more than female (Al-Dubai & Rampal, 2012).

Results of this study also showed that of coping strategies; active coping, denial, substance use, behavioral disengagement, instrumental support, planning, acceptance, self-distraction, venting, religion, self-blame, positive reframing were significantly associated with having children.

Findings of this study revealed that ten out of 14 coping strategies were significantly associated with size of workplace. These strategies were; substance use, emotional support, behavioral disengagement, instrumental support, planning, humor, self-distraction, religion, self-blame and positive reframing.

According to the results of this study, of 14 coping mechanisms, substance use, emotional support, instrumental support, behavioral disengagement, planning, humor, self-distraction, venting, self-blame were significantly associated with the field that Physicians are working (medical or surgical).

To investigate the relationship between designation and coping variable, results of this study showed that the relationship between designation and "Behavioral Disengagement, Planning, Humor, Acceptance, self-distraction". "Venting" "Religion" "self-blame" and "positive reframing" ($p < 0.001$) was statistically significant.

Between age and some coping strategies such as active coping, denial, substance use, emotional support, instrumental support, Behavioral Disengagement, Planning, Humor, Acceptance, self-distraction, Venting, Religion, self-blame positive reframing, there was a statistically significant relationship. Humor, behavioral, substance use and emotional were used by younger physicians, and the others were used more by older respondents. These results are in line with previous studies.

There was also a statistically significant relationship between income and variables like active coping, substance

use, emotional support, instrumental support, Behavioral Disengagement, Planning, Humor, Acceptance, self-distraction, Venting, Religion, and positive reframing ($p < 0.001$).

Results also revealed that there was a statistically significant relationship between experience and some coping components. These skills were; active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, planning, humor, self-distraction, religion, self-blame, and positive reframing.

The results of the study also showed that most of the coping skills were associated with experience in current workplace. This association was between experience (duration) in current work with active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, planning, self-distraction, venting, religion, and positive reframing ($p < 0.001$).

There was also a statistically significant relationship between working hours in a week in workplace and variables like active coping, denial, substance use, emotional support, instrumental support, behavioral disengagement, planning, Humor, self-distraction, venting, religion, self-blame, and positive reframing. This is in line with previous studies.

The most important limitation of this study is that this is a cross sectional study, which precludes an evaluation of temporal precedence and causality of the observed associations. The second limitation is different understanding on individuals' perception of stressors and coping skills. This study may also be limited by participants tiring, because of long questionnaire, and bias in who responds, for example respondents who are under stress are more likely to answer. Another factor that may affect and limit the study could be inability to determine characteristics of non-respondents.

5. Conclusion

This study revealed ten important job stressors, in which the first 3 sources of stress in workplace are physical environment problem (75%), too much volume of work and poorly paid.

Also by the results of the study we can conclude that policy makers and managers would better to try to eliminate and minimize sources of stress in the workplace providing of suitable rooms for doctors on call, regulation of entry of patients to the clinics and inpatient department, improving working environment providing hospitals with enough resources like staff and equipment to enable doctors to perform their work properly and decrease exposure to occupational hazards in the hospitals.

In summary the MOH should review the current policies and rules and should implement organizational and management reforms that take in to consideration doctors' rights and their welfare. If the situation of doctors as a whole and quality of life were improved, the stress would be decreased consequently.

Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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