

A Path Analysis of Promotion Factors of Mental Health

MAHBOOBEH CHINAVEH, NORIAH MOHD ISHAK & AMLA MOHD SALLEH

ABSTRACT

The purpose of this study is to determine if the model proposed to explain the effect of coping responses in stress that could promote mental health, fit the population of the Iranian university students. This study used path analysis to examine the Goodness-of-fit of the mediating effect of coping responses on stress in promoting mental health among Iranian undergraduate students. Three hundred and twenty-six students took part in the study. A community survey was conducted and the students completed a set of measures that assessed stress level, Coping Responses and Mental Health. Findings from the study show that the fit indices for this model are excellent. The RMSEA was 0.06, and the GFI and AGFI were 0.92 and 0.93, respectively. Approach responses ($r = 0.24$) and avoidant responses ($r = 0.28$) were shown to have direct effect on Mental Health. All paths were significant at $p < 0.05$. Correlational results demonstrated that inter- intra personal stress had significant inverse relationship with approach responses and positive relationship with avoidance responses.

Keywords: Stress, coping responses, and mental health, avoidance responses, undergraduate

ABSTRAK

Tujuan kajian ini adalah untuk menentukan sama ada model yang dicadangkan bagi menjelaskan kesan daya tindak terhadap tekanan yang meningkatkan kesihatan mental adalah sesuai untuk populasi pelajar Iran. Kajian ini menggunakan analisis Laluan untuk menilai Goodness-of-fit kesan mediasi daya tindak ke atas tekanan dalam meningkatkan kesihatan mental pelajar universiti Iran. Seramai 326 orang pelajar mengambil bahagian dalam kajian ini. Satu tinjauan komuniti telah dijalankan di mana pelajar-pelajar diminta menjawab satu set soal selidik yang mengukur tahap tekanan, daya tindak dan kesihatan mental. Hasil kajian mendapati petunjuk-petunjuk kesesuaian model adalah sangat baik. Nilai RMSEA adalah 0.06, sementara petunjuk GFI dan AGFI masing-masing bernilai 0.92 dan 0.93. Daya tindak Penyelesaian ($r = 0.24$) dan daya tindak Mengelak ($r = 0.28$) didapati mempunyai kesan langsung ke atas kesihatan mental. Semua laluan adalah signifikan pada tahap $p < 0.05$. Keputusan kajian korelasi pula menunjukkan tekanan personal inter-intra mempunyai hubungan songsang yang signifikan dengan daya tindak penyelesaian dan mempunyai hubungan positif dengan daya tindak mengelak.

Kata kunci: Tekanan, daya tindakan, kesihatan mental, daya tindak mengelak, pelajar siswazah

INTRODUCTION

Theorists and researchers have attempted to define and study stress in different ways. Holmes and Rahe (1967) defined stress as a stimulus event. They explored the relationships between stressful life events and physical illness. Selye (1976) defined stress as a response (physiological arousal) elicited by different external events (stimuli). Selye (1976, 1974) formulated a theory about stress reactions which he referred to as the general adaptation syndrome. Lazarus and Folkman (1984) described stress as a specific stimulus-response transaction which threatens an individual. In this transactional model, the stress on experiences is not in a situation or in a person, but in a transaction between the two (situation and person) depending on how a person appraises the situation and adapts to it. Lazarus and Folkman (1984) dealt with hassles (stressors) which might

be described as trivial events associated with one's everyday living. Their focus was on an individual's cognitive interpretation of the stressful situations.

Studying stress is a very complex topic as there are numerous stressors and coping methods which may overlap and interact with each other producing multiple behaviors. As stress researchers came to understand the prominence of coping resources in adapting life demands. The theory which assumes coping methods as mediator between stress and disorder is very interesting because this theory (Lazarus 1984) tries to explain the relation between stress and disorder. This theory assumes that in a limited stress condition, individuals who use the effective coping experience less disturbed behaviors and consequently suffer less mental disorder. Therefore, in examining the stress, the reactions to it is much more important than the factors creating stress (Aldwin 1994; Snyder 2001; Thoolen et al. 2009).

THE MODEL OF DETERMINANTS AND EFFECTS OF
COPING RESPONSES

The model of the interaction between context, coping and adaptation reflect a systems orientation and a focus on the social context of coping. A system orientation recognizes that both dispositional and contextual approaches are needed to understand the coping process. Dispositional approaches in general, preferred coping styles that transcend particular situational influences, whereas contextual approaches reflect how a person copes with a specific type of stressful event and assimilates changes in coping efforts during a stressful episode (Figure 1).

The model depicts the environmental system (panel I) as composed of ongoing life stressors, as well as social resources. The personal system (panel II) includes individuals' demographic characteristics and personal resources such as cognitive and intellectual abilities, self-confidence, social competence, optimism and extroversion. Panel I reflects relatively enduring aspects of the environment, whereas panel III includes transitory conditions such as new life events and participation in intervention and treatment programs. Considering these two sets of transitory life circumstances together highlights the point that both sets reflect new contexts that provide opportunities for learning and the potential for personal development or decline.

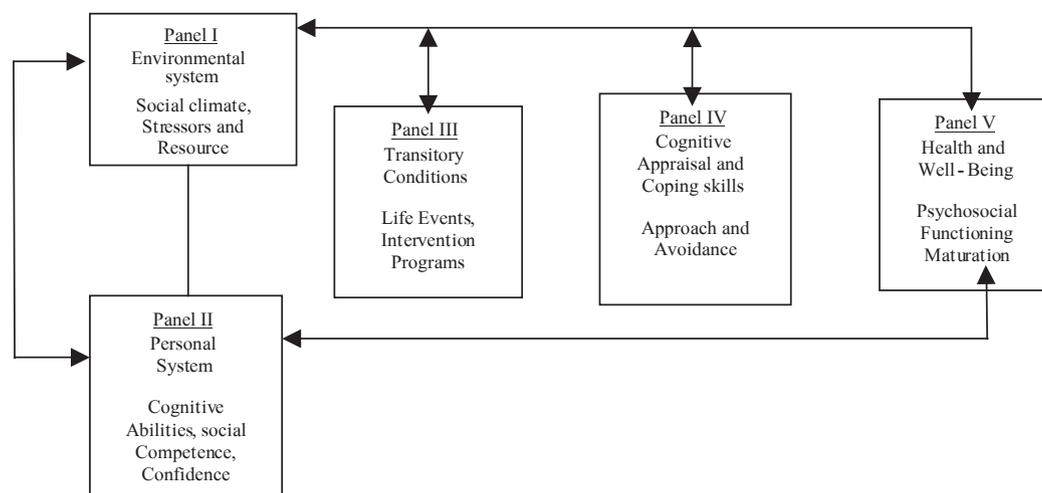


FIGURE 1. A Model of the Interaction between Context, Coping and Adaptation

The model posits that (1) ongoing environmental and personal factors foreshadow these transitory conditions, and (2) these three sets of factors (environmental system, personal system, and transitory conditions) shape cognitive appraisal and coping skills (Panel IV). In turn, appraisal and coping skills influence individual health and well-being (Panel V). The framework emphasizes the key role of cognitive appraisal and coping skills in the stress and coping process (Moos & Halahan 2003).

While some coping strategies may seem appropriate for a particular situation, they might fail to achieve a peaceful resolution, in which case a new strategy should be chosen. Coping strategies can be either positive or negative. Positive coping techniques are those that prove effective in satisfactory dealing with stress, based on the accomplishment of a peaceful resolution. This is the goal of all effective coping strategies: not merely to survive, but to thrive in the face of adversity. Negative coping strategies, on the other hand, provide no enlightened resolution. Instead, they perpetuate perceptions of stress and further ineffective responses

in a vicious circle that may never be broken or intercepted. Some examples of negative coping strategies are avoidance of the problem or inhibition of action, victimization, emotional immobility (worrying), hostile aggression, and self-destructive addictive behaviors (e.g. drinking, drugs and food binging). In this model, approach coping response is problem-focused and positive coping technique; it reflects cognitive and behavioral efforts to master or resolve life stressors. In contrast, avoidance coping tends to be emotion-focused and negative technique, it reflects cognitive and behavioral attempts to avoid thinking about a stressor and its implications, or to manage the affect associated with it (Moss 1997).

The aim of this study is to examine the relationship of coping responses to stress and mental health in sample of Iranian university students by using the model of the interaction between context, coping and adaptation (explain above) as a framework. The hypothesis is "Coping responses is mediator between stress and mental health".

METHODOLOGY

RESEARCH PROCEDURE

This study used a survey method to collect data from the sample of Iranian students. As such, data was collected only at one point throughout the study. A set of questionnaires (Coping Responses Inventory (CRI), General Health Questionnaire (GHQ), and Undergraduate students Stress Inventory (USSI)) was administered to the sample of Iranian undergraduate students during a class session. Students were given 45 minutes to respond to the questionnaires.

POPULATION AND SAMPLE

Ten universities in Iran (both public and private) were selected for the study. A total of three hundred and twenty-six students were selected randomly to participate in the study (male = 112, female = 214). Their ages ranged from 18 to 35 years with a mean of 18.7 years. Participants were enrolled during the 2008 spring semester.

INSTRUMENTS

Three instruments (Coping Response Inventory-Adult, General Health Questionnaire and Stress University student Inventory) were used for the specific purpose of this study.

COPING RESPONSES INVENTORY (CRI)

The Coping Responses Inventory (CRI) developed by Moos (2004) was used to assess participant coping responses. The validity and reliability of CRI were adjusted for use with Iranian undergraduate students. This inventory measures two different types of coping responses related to stressful life circumstances. These responses are measured in two sections: namely, the Approach scale and the Avoidance scale. The Approach scale is measured by twenty-four items and the Avoidance scale is measured using fifteen items. When responding to the CRI-Adult, individuals select and describe a recent stressor and use a four-point scale varying from “not at

all” to “fairly often” to rate their reliance on each of the 39 coping response items. The Alpha values for the two scales and overall ranged from .78 to .84. The validity of the scales based upon confirmatory factor analysis and predictive validity, were found to be acceptable.

UNDERGRADUATE STUDENTS STRESS INVENTORY (USSI)

The USSI is a research instrument designed to identify and assess specific sources of intra/inter-personal and academic stress that affects mental health in association with poor health and physical pain. Students completed the 20-item USSI, checking items that made them “feel stressed, upset or worried at least two or three times a week for the past one month.” Students rated how much each checked event “bothered” them (from not at all to always). This inventory was constructed for Iranian university students by researcher. The Cronbach alpha coefficient for the USSI was .89 and was .87 and .88 for the intra/inter-personal and academic stress subscales.

GENERAL HEALTH QUESTIONNAIRE (GHQ)

The GHQ 28-item version by Goldberg and Williams (1988) was used to assess general health. The GHQ is one of the most widely used psychometric measures in health and psychiatry and has good reliability and validity (Goldberg et al. 1988). Each item is assessed on a four-point Likert-type scale, which assesses how a person has been feeling over the past few weeks. Lower scores indicate greater degrees of mental health. The alpha coefficient for this study was 0.89.

RESULTS

Pearson product-moment correlations between aspects of stress, coping responses and mental health are shown in Table 1. As expected, in sample of Iranian students, higher scores on approach coping responses were significantly related to lower scores on mental ill-health ($r = -0.24, p < 0.05$). Mental health was positively associated with higher level of inter-intra personal, academic stress and avoidant responses.

TABLE 1. Correlation Matrix for Variables in the Path Analysis

	Aca	Ins	App	Avo	MH
Aca	1				
Ins	.26	1			
App	-.26	-.36	1		
Avo	.03	.35	-.25	1	
MH	.20	.22	-.54	.38	1

Aca = Academic stress, Ins = Inter-Intra person stress, App = Approach responses, Avo = Avoidance responses, MH = mental health

PATH ANALYSIS

This study estimated an interrelated dependence relationships and accounted measurement error in the estimation process path analysis using LISREL software to model the relationship between stress, coping responses, and mental health. Coping responses included avoidant coping and approach coping. Dependent variable was mental health. The model with estimates of the effect of each path is shown in Figure 2. A number of indices were evaluated to assess the overall model fit. Findings from the study show that the fit indices for this model are excellent. The hypothesized path model corresponded closely to the sample's covariance matrices, $\chi^2(8, N = 326) = 23.43, p = .06$. The chi-square statistic divided by the degree of freedom should be less than three. In this study the chi-square statistic was 23.43 with degree of freedom 8. Four indices Goodness of Fit Index (GFI), Adjusted Goodness of Fix Index (AGFI), Root mean square Error of Approximation (RMSEA) were selected and examined. Two indices, GFI = .95 and AGFI = .95 which are much more close to 1, indicates the complete model Goodness indices of model and small index, RMSEA = 0.06 indicates more appropriate goodness model (Table 2). Based on the goodness of fit indices the comparative fit index (.90) and standardized root-mean-square residual (.04) indicated a very close fit (Hu & Bentler 1998).

One of the most functions of path analysis is measurement of indirect effects of variables on each

other. The results showed that exogenous variables (inter-intra personal and academic stress) have indirect effects by approach responses and avoidance responses on mental health. The model is specified by the following path analysis:

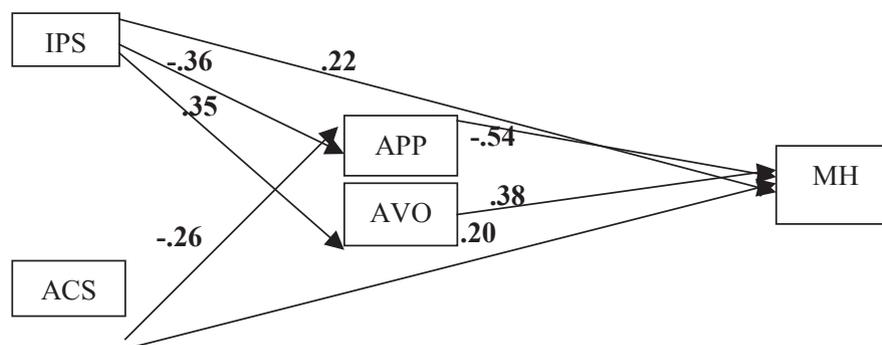
1. Indirect effect of stress features by Approach Responses = $(-0.36 \times -0.54) + (-0.26 - 0.54) = 0.3374$.
2. Indirect effect of stress features by Avoidant Responses = $0.35 \times 0.38 = 0.1330$
3. Total indirect of stress = $0.3374 + 0.1330 = 0.4674$.

All of indices supported the hypothesis (Table 2 and Figure 2). After shared variation between the coping responses and stress variable, coping responses were significantly associated with mental health ($\beta = -0.54$ and 0.38 , respectively). It was hypothesized that the coping responses mediate the relationship between stress and mental health. The indirect effect of stress on mental health through coping responses is 0.4674, which is more than 0.085. Thus, the coping responses mediate the relationship between stress and mental health. The p-value for the direct effect of stress on mental health is 0.04, which is less than 0.05. Therefore, coping responses are a partial mediator in the relationship between stress and mental health. In this model, coping responses were found to be important determinant for mental health than stress variable. The finding also shows that stress has smaller direct effect than indirect effect on mental health (Tables 2 and 3 and Figure 2).

TABLE 2. Goodness-of-fit Summarize for Coping Responses Inventory

Goodness of fit summary				
Df	χ^2	GFI	AGFI	RMSEA
8	23.43	0.95	0.95	0.06

GFI = Goodness of fit index greater than 90 indicates adequate fit, AGFI = adjusted goodness-of-fit index greater than 90 indicates adequate fit, RMSEA = root mean square error approximation less than . indicates adequate fit (Hu & Bentler 1998)



Hypothesized path model and standardized path coefficients. Each variable with a straight arrow pointing to it has associated residual error variance. Residual variances were set to inter-correlate for the two coping variables, inter/intra personal stress, and mental health $p < .01$. IPS = Inter & Intra personal stress, ACS = Academic stress, APP = Approach responses, AVO = Avoidance responses, GH = General Health.

FIGURE 2. The Path Analysis of Stress, Coping Responses and Mental Health

DISCUSSION

The model tested in this study, in which Approach and Avoidance responses were hypothesized to mediate the relationship between inter-intra personal stress and academic stress and mental health, demonstrated adequate to good fit with the data. Model was associated with a proportion of total covariance and variance, and magnitude of paths between constructs, while moderate in most cases, was convincing. The significant finding in this study is noteworthy and confirms the off-proposed-but-rarely-supported linkage between psycho educational variables and health-related variables. The significant relationship between coping responses and mental health outcomes also supported Lazarus and Folkman's (1984) theoretical propositions. The model of the interaction between context, coping and adaptation by Moos and Halahan (2003) provides a framework in which to understand how certain factors may serve a protective function in the experience of stress. Based on this model individual emphasizes the individual's appraisal of the potential treat posed by the stressor, as well as the availability of coping resources to meet the demands of the stressor. This study gives evidence supporting a causal relationship between stress and some illnesses, factors that protect against the experience of stress may also protect against the experience of illness. The present study's objective was to examine the relationship of stress level and the individual's coping responses to mental health. Correlational results demonstrated that inter-intra personal stress has significant inverse relationship with approach responses and positive relationship with avoidant responses.

In accounting for inter-intra personal stress correlation to avoidant responses, previous studies show that intra personal sensitive is related to emotion-focus and avoidance coping strategies (Barker-Collo 2001) in one had and these two strategies are related to anxiety and depression because emotion-affective equilibrium is scratched by anxiety and depression in the other hand (O'Hara 2002; Tremblay & King 1994). Individuals with high score's inter / intra personal stress scales review problems with wrong cognitive evaluations and as a result, they use inefficient coping responses like avoidance responses for the wrong appraisal. These individuals are often worried, anxious, aggressive, depress, impulsive and vulnerable. If individuals appraise dangers of environment more than their abilities, they will response to dangers by avoidance response and show symptoms such as high mental pressure, weak performance and anxiety.

The obtained results from the present study that pertain to academic stress and coping are consistent with previous research in these areas. Academic stress was found to be negatively related to approach responses, which is consistent with previous research

linking coping strategies to perceptions of stress and stressful life events (Damush et al. 1997). Academic stress was also related to more symptoms of mental health disorder in the present study, an association that is consistent with previous research that has tied academic stress to other physical and mental health indicators (DeBerared et al. 2004; Steiner et al. 2002). Steiner and colleagues (2002) found that high approach skills and less avoidance coping skills had fewer general health, eating and dietary, and mental health problems. Previous studies have found that positive affect is associated with effective coping that alleviates stress and its influence on health. Other studies have found similar trends whereby who utilize avoidance-coping responses demonstrated higher attrition rates, less academic success, difficulty interpersonal relationships and increased psychopathology (DeBerard et al. 2004; McCormik 2007).

Previous research relating an approach – oriented coping style to less perceive stress level and indicators of mental and physical health is also consist with the findings of the present study. Accurate observing situation and correct cognitive appraisal self ability to confront with problems and do accurate responsibilities are the symptoms of mental health and individuals with low score in academic stress have worthy characteristics. It seems reasonable to consider, based on these results, the fact that studying participants who decrease academic stress may have developed mental health indirectly through the development of approach responses such as examined in this study (i.e cognitive appraisal, problem solving). The result of present study is consistent with other studies that found a significant correlation between coping responses and aspect of mental health (Dolbier et al. 2007; Ryan & Twibell 2000).

LIMITATIONS AND SUGGESTION

The results of this study should be considered in light of at least two limitations. First, the design of the study is cross sectional; therefore, causation cannot be determined and the possibility that other variables may be accounting for some of the relationships cannot be dismissed. Future research using prospective and experimental designs would enable examination of cause and effect relationships, as well as the effectiveness of interventions targeted to enhance mental and individual protective factors in order to reduce stress and illness. Second, there may be other protective mechanisms in addition to those studied here that are important to consider in the experience of stress and illness. Third as with all survey data, self-report has inherent limitations such as potential bias due to such dispositions as negative affectivity and the subjectivity in reporting.

Health promotion interventions that focus primarily on enhancing individual factors and secondarily on

environment factors may be more successful. This “inside-out” approach recognizes that by starting with the individual and his or her tendencies and perceptions, the environment is simultaneously impacted as well by influencing the individuals who create that environment. Although this approach focuses on the individual, it recognizes the importance of addressing the environmental conditions within which the individual works, which has been the focus of newer theoretical models pertaining to work stress such as the culture – work – health model. Addressing both individual and work environment factors may contribute to a culture within the organization that creates less stress, and subsequently less illness.

CLINICAL APPLICATIONS

Counselors may benefit by coping concepts in training and assimilation programs for students. Recognizing coping as potential targets for intervention raises the issue of whether it is possible to change an individual’s general tendencies, which are by natural difficult to change. It is possible to modify such characteristic responses through increasing awareness of those that are maladaptive and training individuals in alternate patterns of responding that are more effective. For example, cognitive-behavioral therapies (CBT) have been successful in teaching adaptive coping skills and restructuring cognitions to be consistent with a hardy outlook.

The lack of researches about association between adaptive coping and mental health outcomes is seen. Some approach coping strategies (e.g, problem solving, and positive reappraisal) are currently used in clinical treatment. Further study into the effect of approach coping is necessary to determine if the relevant treatment techniques are beneficial. Additionally, the negative relations between avoidant coping and general health suggest that clinicians might be advised to administer the coping responses inventory to the clients. Clients evidencing a strong coping strategy may benefit from learning to decrease their reliance on this coping style.

REFERENCES

- Aldwin, C.M. 1994. *Stress, Coping and Development*. New York: Guilford Publications Ink.
- Barker-Collo, S.L. 2001. Relationship of the Dissociative Experiences Scale to demographics, symptomatology and coping strategies in a New Zealand student sample. *Journal of Trauma and Dissociation* 2(3): 81-101.
- Chida, Y. & Hamer, M. 2008. Chronic Psychosocial Factors and Acute Physiological Responses to Laboratory-Induced Stress in Healthy Populations: A Quantitative Review of 30 Years of Investigations. *Psychological Bulletin* 134(6): 829-885.
- Damush, T.M., Hays, R.D. & Dimatteo, M.R. 1997. Stressful life events and health-related quality of life in college students. *Journal of College Student Development* 38(2): 181-190.
- DeBerard, M., Spielmans, G. & Julka, D. 2004. Predictors of academic achievement and retention among college freshman: A longitudinal study. *College Students Journal* 38: 213-228.
- Dolbier, C. Smith, S.E. & Steinhardt, M. 2007. Relationships of protective factors to stress and symptoms of illness. *American Journal of Health Behavior* 31(4): 423-433.
- Goldberg, P. & Williams, P.S. (1988). A User’s Guide to the General Health Questionnaire. *Psychological Medicine* 28: 915-921.
- Holmes, T.H. & Rahe, R.H. 1967. The social Readjustment Rating scale. *Journal of Psychosomatic Research* 11: 213-28.
- Hu, L. & Bentler, P.M. 1998. Fit indices in covariance structural modeling: Sensitivity to under-parameterized model misspecification. *Psychological Methods* 3: 424-453.
- Lazarus, R.S. & Folkman, S. 1984. *Stress Appraisal and Coping*. New York: Springer.
- Mccormick, S. 2007. Traumatic exposure, PTSD, coping responses, and emotional disclosure patterns in the college population. Doctoral Dissertation, Capella University, U.S.A.
- Moos, R. 2004. Coping Responses Inventory: An update on research application and validity manual supplement. *Psychological Assessment Resources*.
- Moos, R.H. & Holahan, C.J. 2003. Dispositional and contextual perspectives on coping: Toward an integrative framework. *Journal of Clinical Psychology* 59(12): 1387-1403.
- O’Hara, T. 2002. Coping measurement and the state effect of depression and anxiety in psychiatric outpatient. *Psychopathology* 35(1): 48-51.
- Palmer, S. & Puri, A. 2006. *Coping with Stress at University*. London: Sage publications.
- Ryan, M.E. & Twibell, R.S. 2000. Concerns, values, stress, coping, health and educational outcomes of college students who studied abroad. *International Journal of Intercultural Relation* 24: 409-435.
- Schnider, K. & Elhai, J. 2007. Coping style Predicts Posttraumatic Stress and Complicated Grief symptom severity Among College students Reporting a Traumatic Loss. *Journal of Counseling Psychology* 54(3): 344-350.
- Sharoff, K. 2004. *Coping Skills Therapy for Managing Chronic and Terminal Illness*. New York: Springer Publishing Co.
- Snyder, C.R. 2001. *Coping with Stress*. New York: Oxford University Press, Inc.
- Steiner, H., Erickson, S.J., Hernandez, N.L. & Pavelski, R. 2002. Coping styles as correlates of health in high school students. *Journal of Adolescent Health* 30(5): 326-335.
- Selye, H. 1974. *Stress without Distress*. Lippincot: Philadelphia, PA.
- Selye, H. 1976. *The Stress of Life* 2nd Ed. New York: McGraw-Hill.
- Tremblay, P.F. & King, P.R. 1994. State and trait anxiety, coping styles and depression among psychiatric inpatient. *Canadian Journal of Behavioral Science* 505-519.

Thoolen, B., De Ridder, D., Bensing, K. & Rutten, G. 2009.
Beyond good intentions: The role of proactive coping
in achieving sustained behavioral change in the context
of diabetes management. *Psychology & Health* 24(3):
237-254.

Mahboobeh Chinaveh
Islamic Azad University
29, Emam Hassan Askari AV.,
Mirza Kocheh Khan St.
Shiraz, IRAN