Title:

The effect of appropriate eating habits, depressive state, and social support on postoperative symptom experience among Japanese postgastrectomy patients.

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Abstruct

Postoperative symptoms have a major impact on quality of life of postgastrectomy patients. This study examined the effect of potential risk factors other than medical perspectives (type of surgery or reconstruction technique) on postoperative symptom experience. Subjects were 82 Japanese postgastrectomy patients (M age = 63.63 years, SD = 10.21; males = 50, females = 32). In order to control the surgical effect on symptom experience, subjects were limited only who had underwent distal subtotal gastrectomy, and who had been discharged within 3 years with no indication of recurrence. Main study variables were attribute, health status (disease stage, adjuvant therapy, time since surgery, postoperative symptoms and their frequency), eating habits, depression, and emotional support. The result showed depression (β=0.24, p<0.05) was only a significant predictor of postoperative symptoms. Besides, frequency of symptom was significantly (p<0.05) predicted by marital status (β=-0.32) and depression (β=0.21). Health status and eating habits did not contribute to incidence of postoperative symptom among the subjects. The results suggest that in order to control the postoperative symptoms, not only to encourage the patient to develop healthier eating habits, but also to enhance psychological status and provide appropriate social support may be needed.

Due to early detection of cancer and progressive treatment options, the survival rate of

Japanese cancer patients, especially gastric cancer patients, is expected to grow in the future

(Yamaguchi, 2001). With the increasing survival rate of cancer patients, their interest has

been turning away from radical treatment options toward better live with their disease. Thus,

supporting the quality of life (QOL) of these survivors is a considerable issue for health care

providers, not only in Japan but around the world.

Background

It is well known that surgical intervention for gastric cancer may result in gastrointestinal

symptoms such as heartburn, abdominal pain, nausea, dumping syndrome, etc (Aoki, & Habu,

2000). These complications often affect a patient's food intake, nutritional state, and physical

reconditioning, and may even be an obstacle to re-adaptation to normal social life. However,

different individuals may have different perceptions of these postoperative symptoms, which

may thus be difficult to control with medication.

Patients who are diagnosed with gastric cancer may have a fear of losing body functions after

surgery, but at the same time they may feel "relieved" if the malignant part is removed.

(Uchitomi & Yamawaki, 1997). However, Uchitomi and Yamawaki (1997) stated that if that

expectations are too high, patients might not accept their declining physical strength and loss

of body functions as a matter of course, and may become increasingly negative and even

depressed.

To effectively control postoperative symptoms, patients must establish new eating habits (i.e.; adjusting food intake, eating more nutritional food, timing of meals) that differ from their habits at presurgery (Nagamine, 2001). However, even though medication and improving eating habits are appropriate, there may still be individual differences in the appearance of postoperative symptoms. Nonetheless, little is known about which factors may be affecting such individual differences. Therefore, the current study investigated the effects of other factors on postoperative symptoms.

Previous studies have reported that the type of surgery and reconstruction, postoperative adjuvant therapy, and eating habits can be predictors of postoperative symptoms. For instance, total gastrectomy may result in more serious complications than partial gastrectomy (Davies, Johnston, Sue-Ling, Young, & May, 1998; Svedlund, Sullivan, Liedman, Lundell, & Sjödin, 1997; Svedlund, Sullivan, Liedman, & Lundell, 1999; Pedrazzani, Marrelli, Rampone, De Stefano, Corso, Fotia, Pinto, & Roviello, 2007). With regard to reconstruction techniques, the advantages of the Billroth technique, jejunal pouch interposition, Ru-en-Y, etc., have been reported from a physician's perspective (Pedrazzani, et al, 2007; Hoshikawa, Dennno, Ura, Yamaguchi & Hirata, 2001).

Postoperative chemothrapy may be directly inducing gastrointestinal symptoms which may be difficult to distinguish from those induced by surgery. Regarding eating habits, patients who have difficulty in controlling the amount, timing and rate of food intake are

more symptomatic (Aoki & Habu, 2000; Nagamine, 2001). In addition, Uchitomi and Yamawaki (1997) mentioned that in many cases, typical gastrointestinal symptoms such as appetite loss, body weight loss, nausea, vomiting, and abdominal discomfort were caused by psychological pain. Hence, it is very difficult to distinguish these symptoms from those caused by the surgery.

In the current study, subjects were limited to only those patients who had undergone the same type of surgery, in order to control the effect of surgical factors on differences of symptoms. Then, personal attributes, social conditions, health status variables, the level of appropriate eating habits, and psychosocial factors were examined as factors affecting postoperative symptoms.

Operational Definition of Term

Appropriate eating habit: It is behavior that postgastrectomy patients need to newly establish after surgery to effectively control postoperative symptoms. The behavior includes adjusting food intake and timing of meals such as "eating small amount of food at a time", "eating several times a day to get enough nutrition", and eating more nutritional food.

Purpose and Research Hypothesis

The purpose of the study was to clarify the causal and other relationships between postoperative symptoms and affecting factors such as appropriate eating behavior and psychosocial factors among Japanese gastrectomy patients. Considering physical symptoms

and affecting factors from various views may be beneficial for establishing an appropriate support policy.

The hypotheses which were established for this study based on the previous studies were 1) patients who have a high level of appropriate eating habits may be more adept at controlling postoperative symptoms; 2) patients' psychological state may have an affect on their postoperative symptom experience; and 3) patients who have less social support tend to have more difficulty in controlling postoperative symptoms.

Methods

Design, Sample, and Setting

The study was a cross-sectional, correlational-predictive design. Subjects included 82 gastrectomy patients who had been discharged in the last three years and had no cancer recurrence. The subjects have not had psychiatric morbidity at pre-surgery, according to their medical chart. Because it has been clalified that different type of surgery, part of resection, and reconstruction technique affected the postoperative symptom experience, subjects were limited only patients who underwent distal subtotal gastrectomy. Subjects were recruited from October 2000 to May 2001 at three general hospitals in Eastern Japan after approval from the medical directors of each hospital. In line with the ethical requirement of informed consent, the purpose of the study was fully explained to each patient. Only those who agreed to participate completed the study questionnaire packet. The total number of questionnaires

distributed were 106 and 82 (77%) were returned.   We had access to the medical records of

65 (79.3%) of these subjects.

Study Variables, Instruments, and Coding

    Sample characteristics

      Self-report questionnaires were used to collect data about subjects' age, gender,

marital status ("married" coded as "1", "unmarried" coded as "0"), and employment

status.

    Health status variables

      Health status variables studied include disease stage, adjuvant therapy, and

"time-since-discharge" (reflected as number of months).

    Postoperative symptoms.   A check list of 8 items including heartburn, abdominal

pain, nausea, diarrhea, bloating, belch, dumping syndrome and "others" was used to collect

subjects' reports of postoperative symptoms they experienced postgastrectomy.   Patients

indicated those symptoms from the list that they experienced daily following their surgery.

Multiple responses were acceptable, and each response scored "1."

    Frequency of postoperative symptoms. Frequency of postoperative symptoms was

reported as   "rare" = "0," "sometimes" = "1," "often" = "2," and "very often" ="3."

    Level of appropriate eating habits. A 6-item checklist of appropriate eating habits

was established based on Nagamine (2001) 's instruction about rehabilitation process after

gastrectomy. Sample items are: "I always take my time when eating a meal", "I eat a small amount of food at a time and chew it thoroughly", and "I do not eat too much even if I feel good". Patients were asked to rate the degree of their eating habits on a line from 0-100%. The average percentage was calculated after all the answers had been totaled.

Emotional support. Munakata's (1996) 20-item scale measures perceived emotional support from both family (10-items) and friends (10-items). Sample items are: "Do you have *any friend* who supports your behavior; who talks about your life prospects; who when meeting him/her makes you feel secure?" "*Any family member*" was substituted for "*any friend*" in the Emotional Support from Family Members subscale in our study. Responses that approximated to "sooth one's emotional feelings" were scored "1" = "yes," and "0" = "no". Scores in the two subscales were summed to get a total score and higher scores indicated higher emotional support. Cronbach's alpha for the scale was 0.97 in this study (Table 2).

Depression. Zung's (1965) 20-item Self-rating Depression Scale in Japanese (Fukuda & Kobayashi, 1973) was used to measure feelings of depression. Dugan and associates (1998) had examined the utility and reliability of Zung's scale with 1109 cancer patients and concluded it was a useful tool to identify depressive symptoms in that population. The item "I noticed that I am losing weight" in the scale was eliminated from our study because weight loss after gastrectomy is not a psychological issue in these subjects, but a medical one;

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therefore, 19 items of the scale were used in the present study. Response options ranged from

"1" = "a little of the time" to "4" = "most of the time." Expected minimum/maximum score

range was 19 to 76 and a higher score indicated a higher level of depression. Cronbach's

alpha was 0.83 in this study (Table 2).

Data Analysis

Three main analyses to estimate the study hypotheses were performed using the Statistical

Package for Social Sciences, version 11.0 (SPSS Inc, Japan). These analyses included

descriptive analyses of the patients' sample characteristics, Mann-Whitney's U test to

examine the differences of both postoperative symptoms (number of symptoms) and

frequency of symptoms by attributes or health status variables, Pearson's correlation

coefficient to estimate relationships between both postoperative symptoms and their

frequency, and the study variables, and multiple regression analysis to examine the effects of

the study variables on postoperative symptoms and their frequency.

Results

Eight-two patients participated in the study (males = 50 [61%], females = 32 [39%])

females. Mean age was 63.63 years (SD = 10.21), and age ranged from 39 to 82 years.

Among the participants, 46 (56.1%) had previously been diagnosed with early stage gastric

cancer, and 19 (23.2%) had advanced stage cancer. About 90% (n = 74) of the participants

were married, and 56.1% (n = 46) were employed at the time of investigation.   The

dominant postoperative symptoms were diarrhea (n = 25 [30.1%]), belching (n = 23, [27.7%]), and heartburn (n = 12, [14.5%]) with 54.9% of the patients experiencing a few of these symptoms. Almost half of the patients (n = 39 [47.6%]) experienced these postoperative symptoms "sometimes" (see Table 1).

The results of Mann-Whitney's *U* test showed no significant *(p<0.05)* differences between postoperative symptoms and variables such as gender, marital status, job status, disease stage, and whether or not the patient had undergone chemotherapy. The frequency of symptoms did not show significant *(p<0.05)* differences by those variables, except for marital status. That is, unmarried patients complained more frequently about experiencing symptoms *(z=-2.95, p=0.001)* than married patients did (see Table 3).

There was a significant *(p<0.05)* correlation between postoperative symptoms and depression *(r=0.24)* in Pearson's correlation analysis. In addition, significant *(p<0.05)* correlations were found between frequency of symptoms and marital status *(r=-0.36)* and depression*(r=0.27)*. Postoperative symptoms and frequency of symptoms showed comparatively high correlations *(r=0.56, p=0.001),* which meant that patients who complained of many symptoms tended to exhibit symptoms more frequently (see Table 4).

On the other hand, the level of appropriate eating habits did not significantly *(p<0.05)* correlate to either postoperative symptoms or frequency of symptoms. With regard to age, time since discharge, and emotional support, there was no significant *(p<0.05)* correlation to

either postoperative symptoms or their frequency.

The result of multiple regression analysis, in which postoperative symptoms were set as an independent variable and a significantly related variable (depression) was set as a dependent variable, showed that depression had a significant *(p<0.05)* effect on postoperative symptoms *(β =0.24),* explaining 6% of variance. Additionally, the same procedure was done with setting the frequency of symptoms as an independent variable. As a result, marital status *(β =-0.32)* and depression *(β =0.21)* were significant *(p<0.05)* predictors of the frequency of symptoms, explaining 15% of variance (see Table 5).

Discussion and Clinical Implications

This study examined postoperative symptoms after gastrectomy, which have a great impact on quality of life, and their affecting factors such as eating habits and psychosocial factors. We were especially interested in what kinds of factors may effectively contribute to postoperative symptom management.

First of all, the effects of type of surgery were controlled by recruiting subjects who had undergone the same type of surgery. Then, the effects of the disease stage and whether or not the subject had undergone chemotherapy, which were physiological affecting factors of gastrointestinal symptoms, were tested. However, postoperative symptoms and their frequency did not show any statistical difference by these variables. This was contradicting result to study hypothesis. It was probable that the 9 subjects out of 11 who underwent

chemotherapy were given by internal use at the time of investigation. Therefore, their perception of gastrointestinal symptoms might be less and it might be a reason why no significant difference was observed between the groups regarding postoperative symptoms and its frequency. Although patients might develop various coping strategies over time, no significant correlation was observed between time since discharge and postoperative symptoms. Therefore, the effect of health status variables on postoperative symptoms may be small among the participants.

It has been recognized that establishing healthy eating habits, such as eating the proper amount of food at the proper time, were effective in controlling symptoms. Yet, it did not correlate to postoperative symptoms or their frequency. That means that good eating habits might not always help to reduce postoperative symptoms.

This finding suggests that there may be a significant effect of psychosocial factors on postoperative symptoms.

A depressive state was a significant predictor of postoperative symptoms and their frequency. The relationship between depressive state and postoperative symptoms was previously reported by Matsushita, Matsushima, and Maruyama. (2005); Spector, Hicks, and Pickleman. (2002). However, the causal relationship of these variables has not been described. As Uchitomi and Yanawaki (1997) stated, in many cases, typical gastrointestinal symptoms such as appetite loss, body weight loss, nausea, vomiting, and abdominal discomfort are

caused by psychological pain. In other words, the appearance of postoperative symptoms might be influenced by both organic alteration and a patient's psychological state. Thus, depressive patients might be more sensitive to their physical condition, resulting in a higher incidence of postoperative complications. However, it is very difficult to distinguish psychologically-induced symptoms from symptoms caused by surgery.

In addition, marital status was the most affective determinant of frequency of symptoms. Although association between marital status and both depression and QOL were reported in some studies (Perker et al ,2003; Shapiro, S.L., Lopez, A.M., Schwartz, G.E., Bootzin, R., Figueredo, A.J., Braden, C.J.& Kurker, S.F., 2001), the effect of marital status on physical symptom was a new finding. A spouse might be the closest and most important source of a patient's support. Many studies have suggested that perceived social support affects a patient's psychological condition and it has been widely recognized that there is a relationship between a low level of perceived emotional support and a high level of depression (Parker, Baile, de Moor, & Cohen, 2003; Stark, Kiely, Smith, Velikova, House, & Selby, 2002; Helgeson, and Cohen, 1996). In fact, emotional support and depression were significantly related (r=-0.23, p=0.04) in this study sample, and the result was corresponded to the previous studies. Regarding to support and physical symptoms, marital status significantly related to frequency of postoperative symptoms, but emotional support did not. According to House, Umberson, and Landis (1988) and Schaefer, Coyne, and Lazarus.

(1981), social support is multi-dimensional and includes instrumental support, informational support and emotional support. A spouse can be playing any or all of these roles. For instance, helping a spouse to prepare meals many times in a day may be instrumental support. Providing or sharing medical information may be informational support. Listening to the spouse's fears or concerns and encouraging him/her may be emotional support. The lack of close and multi-dimensional support by a spouse might affect physical and even psychological symptoms.

As described above, the subjects of this study were limited to only those patients who had undergone distal subtotal gastrectomy, in order to control the effect of surgical factors on differences of symptoms. Besides, the significant relationship between postoperative symptoms and health status variables or appropriate eating habits was negative. Under such conditions, differences in observed postoperative symptoms implicitly included the effect of personal cognition, which itself was affected by psychosocial factors such as psychological status and perceived social support.

The results of the present study suggest that in order to control the condition of postoperative symptoms, it may be necessary not only to encourage the patient to develop healthier eating habits, but also to enhance psychological status and provide appropriate forms of social support, each instrumental, informational, and emotional.

Limitations of the Study

Limitations of this study are that the research design was cross-sectional, that was, presented result could explain the association among physical, psychological, and psychosocial factors only at a certain point of time of post-surgery. Thus, it is uncertain that the effect of psychological vulnerability at pre-surgery on physical and psychological state at post-surgery. Likewise, the sampling was nonrandom, and the sample size was marginal. Thus, the study findings may have potential bias and may be difficult to generalize to other patient populations. The variables in the present study accounted for 6-15% of the variance in postoperative symptoms and their frequency, suggesting that some factors outside the scope of the study may better explain postoperative complications. Regarding the level of subject's appropriate eating habits, the result might be relevant and could help to understand the subject's situation. However, the checklist to assess eating habits might be insufficient as a research tool, because the validity of it has not been examined. It should be considered in a future study.

Further study is needed to identify additional potential risk factors. Moreover, the findings need to be corroborated in other patient populations such as patients who have undergone different types of surgery or who are at different disease stages.

References

Aoki, T., & Habu, N. (2000). *Isetujogo syougai no management. (Management of complication after gastrectomy).* Osaka:Iyakuja-narusya.

Davies, J., Johnston, D., Sue-Ling, H., Young, S., & May, J. (1998). Total or subtotal gastrectomy for gastric carcinoma? A study of quality of life. *World Journal of Surger*y, *22(10),* 1048- 1055.

Dugan, W., McDonald, M.V., Passik S.D., Rosenfeld, B.D., Theobald, D., & Edgerton, S. (1998). Use of the Zung Self-Rating Depression Scale in cancer patients: Feasibility as a screening tool. *Psycho-Oncology, 7(6),* 483-493.

Fukuda, K., & Kobayashi, S. (1973). A study on a self-rating depression scale. *Folia Psychiatrica et Neurologica Japonica, 75,* 673-679.

Helgeson, V.S., & Cohen, S. (1996). Social support and adjustment to cancer: Reconciling descriptive, correlational, and intervention research. *Health Psychology, 15(2),* 135-148.

Hoshikawa, T., Dennno, R., Ura, H., Yamaguchi, K., & Hirata, K. (2001). Proximal gastrectomy and jejunal pouch interposition. Evaluation of postoperative symptoms and gastrointestinal hormone secretion. *Oncology Reports, 8,* 1293-1299.

House, J. S., Umberson, D., & Landis, K. R. (1988). Structures and Processes of Social Support. *Annual Review of Sociolog*y, *14,* 293-318.

Matsushita, T., Matsushima, E., & Maruyama, M. (2005). Psychological characteristics of patients with digestive cancer. *Japanese Journal of General Hospital*

Psychiatry, 17(1), 37-47.

Munakata, T. (1996). *Koudoukagaku kara mita kennkou to byouki (Health and disease from the perspective of behavioral science)* (2nd ed.). Tokyo: Medical-friend Co. Ltd.

Nagamine, T. (2001). The knowledge of rehabilitation process for upper digestive trunk. In Hinohara (Eds.), *Gan kango manual (The manual of cancer nursing).* (pp.297-301). Tokyo:Gakusyukenkyusya.

Parker, P.A., Baile, W.F., de Moor, C., & Cohen, L.(2003). Psychosocial and demographic predictors of quality of life in a large sample of cancer patients. *Psychooncology. 12(2),* 183-93.

Pedrazzani, C., Marrelli, D., Rampone, B., De Stefano, A., Corso, G., Fotia, G., Pinto, E., & Roviello, F. (2007). Postoperative complications and functional results after subtotal gastrectomy with Billroth II reconstruction for primary gastric cancer. *Digestive Diseases and Sciences,* DOI 10.1007/s10620-006-9655-6.

Schaefer, C., Coyne, J.C., & Lazarus, R.S. (1981). The health-related functions of social support. *Journal of Behavioral Medicine, 4(4),* 381-406.

Shapiro, S.L., Lopez, A.M., Schwartz, G.E., Bootzin, R., Figueredo, A.J., Braden, C.J. & Kurker, S.F. (2001). Quality of life and breast cancer: relationship to psychosocial variables. *J Clin Psychol*, *57(4),* 501-519.

Spector, N.M., Hicks, F.D., & Pickleman, J. (2002). Quality of life and symptoms after surgery for gastroesophageal cancer. *Gastroenterology Nursing, 25(3),* 120-125.

Stark, D., Kiely, M., Smith, A., Velikova,G., House, A., & Selby, P. (2002). Anxiety Disorders in Cancer Patients: Their Nature, Associations, and Relation to Quality of Life. *Journal of Clinical Oncology*, *20 (14),* 3137-3148.

Svedlund, J., Sullivan, M., Liedman, B., Lundell, L., & Sjödin I. (1997). Quality of Life after Gastrectomy for Gastric Carcinoma: Controlled Study of Reconstructive Procedures. *World Journal of Surgery, 21(4)*, 422-433.

Svedlund, J., Sullivan, M., Liedman, B., & Lundell, L. (1999). Long term consequences of gastrectomy for patients' quality of life: the impact of reconstructive techniques. *The American Journal of Gastroenterology. 94 (2),* 438–445.

Uchitomi, Y. & Yamaswaki, S. (1997). *Psychooncology. Gan iryou ni okeru kokoro no igaku (Mind medicine in medical service for cancer)*(pp.53, 201). Osaka: Shinryoshinsya.

Yamaguchi, K. (2001). The study of socially adjustment in cancer survivor. In National cancer Center (Eds.), *Annual report of the cancer research ministry of health, labour and welfare* (pp.276-278). Tokyo: National cancer Center.

Zung, W.W.K. (1965). A self-rating depression scale. *Archives of General Psychiatry, 12,*

63-70.

Table 1 Sample characteristics

Age range	39-82 years	
		Number of subjects (percentage)
Sex	Male	50 （61%）
	Female	32 （39%）
Marital status	Married	74 （90.2%）
	Unmarried	8 （9.8%）
		（4 widows/widowers inclusive）
Employment status	Employed	46 （56.1%）
	Unemployed	33 （40.2%）
	Missing data	3 （3.7%）
Time since discharge	Less than 6 months	25 （30.5%）
	6months ～12months	16 （19.5%）
	13months～24months	20 （24.4%）
	Above 25months	21 （25.6%）
Disease stage[a]	Early stage	46 （56.1%）
	Advanced stage	19 （23.2%）
Adjuvant therapy[a]	Chemotherapy	11 （13.4%）
	None	54 （65.9%）
Postoperative symptoms (Number of symptoms)	No symptoms	25 (30.5%)
	Few (1~2)	45 (54.9%)
	Many (more than 3)	12 (14.6%)
Frequency of symptoms	Rare	24 (29.3%)
	Sometimes	39 (47.6%)
	Often	8 （9.8%）
	Very often	11 (13.4%)

a. Data from 65patients whose medical records the researchers received permission to examine.

Table 2 Mean, SD, and Internal Consistency (Cronbach's alpha) of Study Tools

Variables	Possible Score Range	Mean (±SD)	Actual Score Range	Cronbach's α
Level of appropriate eating habits	0-100	68.61 (16.78)	25-100	-
Depression (SDS)	19-76	33.38 (7.81)	21-53	0.83
Emotional support	0-20	16.30 (4.29)	4-20	0.97

Table 3 The differences of both postoperative symptoms (number of symptoms) and frequency of symptoms by attribute or health status variables (Mann-Whitney's *U* test)

	Postoperative symptom		Frequency of symptoms	
	Z score	*P value*	*Z score*	*P value*
Sex	-1.40	0.16	-0.23	0.82
(Male, female)				
Marital status	-1.31	0.19	-2.95	0.001
(Married, unmarried)				
Job status	-0.17	0.86	-1.06	0.29
(Employed, unemployed)				
Disease stage	-0.86	0.39	-1.49	0.14
(Early, advanced)				
Adjuvant therapy	-1.60	0.11	-1.13	0.26
(Chemotherapy, none)				

Table 4 The relationships between both postoperative symptoms (number of symptoms) and frequency of symptoms, and study variables

	Variables	1	2	3	4	5	6	7
1	Postoperative symptom	-						
2	Frequency of symptoms	0.56**						
3	Age	-0.03	0.08					
4	Marital status[a]	-0.10	-0.36**	-0.21				
5	Time since discharge	-0.11	0.00	0.06	0.13			
6	Eating behavior	-0.05	-0.09	0.22	0.03	-0.15		
7	Depression	0.24*	0.27*	-0.24*	-0.20	-0.23*	-0.21	
8	Emotional support	-0.02	-0.15	-0.08	0.18	0.01	0.11	-0.23*

** $p < 0.01$, * $p < 0.05$

[a] Married=1, unmarried=0 (dummy variable)

The numbers indicate Pearson's product-moment correlation coefficient.

Table 5 Predictors of both postoperative symptoms (number of symptoms) and frequency of symptom based on multiple regression analysis

Dependent variables: postoperative symptom (number of symptoms)					
Independent variables	*β*	*p value*	*Adjusted R²*	*p-value*	*F value*
Depression	0.24	0.03	0.06	0.03	5.03
Dependent variables: frequency of symptoms					
Independent variables	*β*	*p value*	*Adjusted R²*	*p-value*	*F value*
Marital status[a]	-0.32	0.003	0.15	0.001	8.10
Depression	0.21	0.04			

[a] Married=1, unmarried=0 (dummy variable)