

Relationship between demographic, obstetric factors and psychological hardiness in pregnant women referred to health centers in Mashhad

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Abstract: Psychological hardiness is a set of the personality characteristics which play a role as a source of strength when dealing with stressful life events. The greatest stress of every woman in their lives is pregnancy. So this studies have been conducted to assess relationship between demographic, obstetric factors and psychological hardiness in pregnant women referred to health centers in Mashhad . Method: This descriptive - correlative study was conducted on 500 pregnant women referred to 20 health centers in Mashhad. Random sampling method was used. Data collection tools were included: Demographic, obstetrics & gynecology Questionnaire, Hardiness Questionnaire (Survey questionnaire personal view Kobasa), and Perceived stress scale. Data were analyzed by statistical software SPSS version 16. Using ANOVA test, Kruskal-Wallis, chi-square test, Pearson correlation coefficient. The significance level was considered less than 0.05. Results: The mean score of hardiness in pregnant women was reported $92/4 \pm 23/2$. Results of Pearson correlation showed that there was a significant inverse relationship between hardiness and perceived stress ($r = -0.81, p < 0.0001$). Qualitative variables of demographic and obstetric were significantly associated with levels of psychological hardiness: Mother's education ($p < 0.0001$), Spouse's education ($p < 0.0001$), Mother's job ($p < 0.0001$), Housing conditions ($p < 0.0001$), Income ($p < 0.0001$), History of Abortion ($p < 0.002$), History of delivery ($p < 0.003$), Previous childbirth experience ($p < 0.0001$), Referring to health centers ($p < 0.04$), Pregnancy status ($p < 0.0001$), concerns about the baby's gender ($p < 0.0001$). Quantitative variables such as maternal age ($p < 0.0001$), number of alive children ($p < 0.032$), number of abortions ($p < 0.002$), gestational age ($p < 0.028$) were also significantly related to the psychological hardiness of pregnant women. Conclusion: There is a relationship between demographic, obstetric characteristics and perceived stress and psychological hardiness. Hardiness is the most important character to cope with stress. so identifying characteristics of people is needed.

Keywords: Pregnancy, Psychological hardiness, Stress

INTRODUCTION

Stress is one of the most important fields of research in this century. Scientists of different fields like physicians, psychologists, physiologists, biologists and sociologists are interested to study each aspect of stress and its effects (1,2). Clancy and Mcvicar believe that word stress mean that an individual's perception of the demands and also their capability to meet those demands. Mac grad states stress as a physical and emotional reactions when a threatening demand are over individual resources and capabilities to deal with them (4). Lazarus & Folkman also define stress as a general concept used to describe the whole range of phenomena that alter individual's mental - physiological state (5). Women have been faced physical and mental changes during pregnancy .If they do not cope with these changes, they would meet a severe stress (6,7). Stress in pregnancy causes changes in neuroendocrine and cardiovascular, which increases the risk of hypertension and postpartum depression (8).Stress in pregnancy causes poor mother's nutrition insufficient physical activity, use of cigarettes and alcohol and other adverse health behaviors (9). Holmes and Rahe considered pregnancy a stressful event and gave it a score of 40 out of 100 (10). Negative effects of maternal stress during pregnancy on the fetus could be mentioned as follows: Changes in the function of the hypothalamus and pituitary, Increased levels of stress hormones, Decreased fetal weight, Preterm delivery, Fetal abnormalities and abortion (11-14). Each person's response to stress depends on genetic factors, personality characteristics, and living conditions such as poverty, the environment, social support and previous experiences (15).Private sources define as a complex set of cognitive factors and feedback that make a part of a person's psychic ability to fight against events. In fact, relatively stable underlying characteristics that influence the choice of assessment methods and coping strategies. (1, 16)The researchers believe that moderating factors interfere in the relationship between stress and disease. Kobasa (1979) has shown that many people do not develop a disease despite the stressful living conditions. It could be explainable because of hardiness, which neutralize the adverse effects of stress (17). Investigator who raised the hardiness personality theory, Kobasa SC, declared that psychological hardiness is a set of personality characteristics which plays a role as a source of strength dealing with stressful life events. Stressful life events are associated with increased symptoms of disease. Hardiness is a general feeling that makes conditions of the environment ideal and also potentially gives stressful situations meaningful and interesting. Instead of experiencing them small and simple ,meeting them as a great opportunities(18). Kobasa, Maddi and Zola (1983), define hardiness a combination of beliefs about mankind himself and the world(19).

Hardiness defines audacity, toughness and Wiry by Amid Dictionary. It also defines as high energetic person, hard working with full force and deal with problems powerfully in Oxford dictionary .Molana defines it resistance, patience and challenging(20). Hardiness originated of a single structure comprising three related components: control, commitment and challenge (6,21) . Commitment is described as a belief system that minimize the threatens of the perceived difficult and stressful life. Commitment is the belief in importance of being interesting, meaningful and valuable of life activities (22, 23). Those who are strong in the control component believe that life events are predictable and also they are able to influence them by hard working. People with challenge personality believe that challenges are the natural process of life. Expecting for changes is motivation for growth and development, not a threat to one's safety. (18, 22). Druss & Douglas reported the two following experiments that make people more likely to be hardy:1-Such people are probably have positive and healthy role models in terms of commitment, control and challenge.2- Since hardiness can be learned, probably people in the face of life events, have gained control and efficacy over the environment (24). hardy people impact two components of assessment.1- assessment reduces the threat. 2- expectations increases a successful adaptation. Also hardiness directly related to the choice of strategy to cope with the difficulties of life. In general, it can be said that hardy people show more adaptive coping behaviors .on the other side less maladaptive coping behaviors. They also use health tips more positively (25).

Low hardy people in the face of life's problems show a strong emotional response and suffer long term psychological pressures (26). Kobasa studies have shown that stress levels increases cholesterol, blood pressure and cortisol only in people who have lower hardiness. On the other hand, hardy people stay healthy facing life events. Apparently, they gain acquired or natural immunities against the effects of stress factors. In fact, hardiness define as an intense physiological arousal caused by stressful events. Selye and other researchers believe that hardiness is a negative factor against diseases (27,28). Hills & Norvel(1991) reviewed the relation between stress and a hardiness. They concluded that hardiness adjust stress and its consequences. In this way they confirmed the moderating role of hardiness (29). Hardiness make an optimistic vision is to stressors. This feature can be useful in coping with stressful life events (27). Hardiness seems to be a better predictor variable for mental health rather than physical health. Shirbim et al. (2009) showed there was a significant relation between mental health and psychological hardiness (30).Alert & Smith (1989) reported that hardy people, in comparison with those with low hardiness show lower tensions and arousal in stressful events (22). The results of Delahajj(2010)showed that the more hardy someone is ,more appropriate coping strategies uses (31). Soderstrom study (2000) showed that there was a significant positive correlation between commitment, control and challenge with active coping strategies and planning ($P=0.01$) while there was a significant negative correlation between each of the components of commitment, control and challenge and avoidance strategies ($p=0.01$) (32).

Since pregnant women feel so much stress because of changing during this part of their lives and also hardiness is the most important characteristics which stand over stress , this studies have been conducted to assess relationship between demographic, obstetric factors and psychological hardiness in pregnant women referred to health centers in Mashhad. It should be also mentioned that less studies have been done in this field .

METHODS:

This descriptive - correlative study was conducted on 500 pregnant women referred to 20 health centers in Mashhad who meet the inclusion criteria in 2015.

Inclusion criteria were included: Being pregnant, Being able to communicate verbally, a fifth-grade education at least, No history of medical illness and high risk pregnancies, No drug addiction, No history of visiting a psychiatrist or psychologist, Not taking medication, Not hospitalized due to mental illness in recent years, not under major stress during the last 6 months.

Based on preliminary study, sample size was calculated 500 with confidence level 95% ($05/0 = \alpha$) and power of 80% ($\beta=0.2$).

Multi-stage sampling method was used. A complete list of health research centers and from five health regions of Mashhad (named one, two, three, five and Samen) was prepared. Some were selected randomly from almost all regions.

After approval of the study by Ethics Committee, Mashhad University of Medical, and also the introduction letter of the nursing-midwifery faculty to the health centers, researcher started sampling. Pregnant women were selected based on the inclusion criteria in each Trimester .

The process of data collection were as follows: In the morning shifts, researcher asked pregnant women who referred to health centers because of prenatal care, follow-up testing or participating in the classes for their cooperation. If they wish to participate in the study, they were asked to fulfill the Questionnaire with the help of researcher after fulfilling Written Informed Consent in a quiet environment (waiting room or staff room).It should be noted that an explanation was given face to face about the purpose of the study and data confidentiality. In case of meeting the inclusion criteria, Demographic, obstetrics & gynecology Questionnaire, perceived stress scale and psychological hardiness Questionnaire were completed. Data collection tools were included: Demographic, obstetrics & gynecology Questionnaire, Hardiness Questionnaire (Survey questionnaire personal view Kobasa), and Perceived stress scale.

Demographic and obstetric Questionnaire consists of two parts. Part A includes personal information that has 13 questions about age, education, occupation, economic status and... (B) obstetric characteristics, which has 24 questions such as :pregnancy, abortion, alive children, dead children, the number and type of delivery, wanted/ unwanted pregnancy, gender of the baby, gestational age, etc. The face and content validity were used to determine the validity. So that after reading the latest scientific literature on the topic of study, questionnaires were prepared under the supervision and guidance of a consultant.Ten members of the Nursing and Midwifery the Faculty – Mashhad reviewed and corrected them. After the reviews, comments of them was approved.

Hardiness Questionnaire includes 50 questions, which is a 4 point Likert option. 16 expression of commitment, 17 of control and 17 of challenge. "is not true" awarded zero score and "is quite true " awarded 3 score. 39 questions (questions from 6 to 21&28 to 50) scored in reverse. Scores range is between 0-150. High hardiness range is (126-150 score), relatively high hardiness (76-125), relatively low hardiness (26-75) and low hardiness is (0-25)(33). The validity and reliability of the questionnaire was done in Iran firstly by Ghorbani using content validity in 1994. Other internal studies have also been supported the reliability of the questionnaire (34). Caska and Moritaka reported factor reliability coefficients 0.75 for total score hardiness (35). Also Cronbach's alpha validity was determined 0.86, 0.83, 0.72 and 0.69 for hardiness, commitment, control and challenge, relatively by Kiomarsi and abolghasemi (6).However it was reported 0.71, 0.88, 0.75 and 0.84 by Maddy (34) .The reliability was determined by using Cronbach's alpha. It was reported 0.92, 0.85, 0.82 and 0.81 for hardiness, commitment, control and challenge, relatively.

Perceived stress scale questionnaire includes 14 questions, scoring 5 -Likert scale , which zero means “never “and four means “most cases” . The score range reported between 0- 56. Higher scores are indicating higher perceived stress. Questions numbered 4,5,6,7,9,10,13 scored in reverse. The reliability (2011) also calculated 0.81 by using the Cronbach's alpha in a study of mazloon et. Al (36). Also the reliability was obtained 0.89 by using Cronbach's.

Data were analyzed by statistical software SPSS version 16. using ANOVA test, Kruskal-Wallis, chi-square test, Pearson correlation coefficient. The significance level was considered less than 0.05.

RESULTS:

The mean age of the study was reported 26.8 ± 5.3 in the range of 14-50 years, the average number of pregnancies 2.02 ± 0.98 , with a range of 1 to 6, the average number of alive children was also reported 0.85 ± 0.84 in the range 0 to 4. It was also reported that 22 individuals or 4.4% experienced a stillbirth, 53 cases (10.6%) abortion. The average number of abortions was determined 0.13 ± 0.44 range from 0 to 4. The average number of births was 0.86 ± 0.87 , in the range of 0 to 4. Most people (161 (52.4%) cases out of 307) reported previous experience of childbirth relatively good. Most women (448 cases or 89.6%) visits health centers regularly to receive prenatal care. 422(84.4%) of women had a planned pregnancy because they wanted to however 392(78.2%) had one because their spouse wanted to. Most of the subjects (330 equivalent to 66.0%) were not worried about the baby's gender. The mean and standard deviation of the gestational age were 22.3 ± 10.1 weeks.

The mean and standard deviation of pregnant women hardiness were reported 92.4 ± 23.2 in a range of 31-133 with median 93.5 . The mean scores of psychological hardiness of commitment was reported 32.5 ± 9.0 with the range of 7-48 , control 32.7 ± 8.5 with the range of 8-51 and challenge 27.3 ± 8.5 with the range of 8-45. In terms of hardiness, 23% of women were relatively low hardy, 8/70% relatively high and 2.6% were assumed hardy people. Distribution of the levels of hardiness was shown in the diagram the in the first, second third trimester and the whole time of pregnancy.

The results of examining factors associated with psychological hardiness showed that there was no significant relation between number of dead children ($p=0.079$) , type of delivery ($p=0.425$), Parity ($p=0.060$) and psychological hardiness . Qualitative variables of demographic and obstetric were

significantly associated with levels of psychological hardiness (Table A). Quantitative variables such as maternal age ($p < 0.0001$), number of alive children ($p < 0.032$), number of abortions ($p < 0.002$), gestational age ($p < 0.028$) were significantly related to the psychological hardiness of pregnant women.

The mean score of perceived stress of subjects was reported 23.3 ± 9.6 ranging 4-56. Pearson correlation coefficient results showed that there was a significant inverse relationship between the total score of hardiness and perceived stress ($R = -0.81$ $p < 0.0001$).

Table 1- Relationship between the demographic and obstetric qualitative variables with the levels of psychological hardiness of pregnant women

group variable		Relatively low hardiness Number (percent)	Relatively high hardiness Number (percent)	High hardiness Number (percent)	total	p_value
Mothers' education	Primary	(27/0)31	(7/1)25	(2/3)1	(11/4)57	0/0001
		(43/5)50	(26/0)92	(9/7)3	(29/0)145	
	Diploma	(22/6)26	(41/2)146	(29/0)9	(36/2)181	
	Academic	(7/0)8	(25/7)91	(58/1)18	(23/4)117	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Spouse' education	illiterate	(12/2)14	(3/1)11	(0/0)0	(5/0)25	0/0001
	Primary	(13/9)16	(9/9)35	(3/2)1	(10/4)52	
	secondary	(44/3)51	(26/0)192	(12/9)4	(29/4)147	
	Diploma	(23/5)27	(39/0)138	(45/2)14	(35/8)179	
	Academic	(6/1)7	(22/0)78	(38/7)12	(19/4)97	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Mothers' job	housewife	(89/6)103	(74/6)264	(41/9)13	(76/0)380	0/0001
	employed	(10/4)12	(25/4)90	(58/1)18	(24/0)120	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Housing conditions	rented	(59/1)68	(48/3)171	(29/0)9	(49/6)248	0/0001
	personal	(40/8)47	(51/7)183	(70/9)22	(50/4)252	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Income	Less than living costs	(40/0)46	(11/6)41	(3/2)1	(17/6)88	0/0001
	Enough with living costs	(59/1)68	(80/8)286	(80/6)25	(75/8)379	
	More than living costs	(0/9)1	(7/6)27	(16/1)5	(6/6)33	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
History of dead infant	yes	(7/8)9	(3/7)13	(0/31)1	(4/8)23	0/079
	no	(92/2)106	(96/3)341	(99/69)30	(95/2)477	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)31	
History of abortion	yes	(19/1)22	(8/5)30	(3/2)1	(10/6)53	0/002
	no	(80/9)93	(91/5)324	(96/8)30	(89/4)447	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
History of delivery	yes	(59/1)68	(59/6)211	(90/3)28	(61/4)307	0/003
	no	(40/9)47	(40/4)143	(9/7)3	(38/6)193	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Delivery type	natural	(73/5)50	(67/1)143	(60/7)17	(68/0)210	0/425
	cesarean	(26/5)18	(32/9)70	(39/3)11	(32/0)199	
	total	(100/0)68	(100/0)213	(100/0)28	(100/0)309	
Previous experience of	Too bad	(6/0) 4	(1/9)4	(3/6)1	(5/6)9	0/0001
	Relatively bad	(28/4) 19	(9/0)19	(3/6)1	(12/7)39	

delivery	Relatively good	(50/7)34	(55/2)117	(32/1)9	(49/5)160	
	Good	(14/9)10	(34/0)72	(60/7)17	(32/2)99	
	total	(100/0)67	(100/0)212	(100/0)28	(100/0)307	
Referring to health centers	Yes	(60/0)69	(48/62)172	(38/7)12	(50/6)253	0/041
	no	(40/0)46	(51/4)182	(61/3)19	(49/4)247	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)307	
Birth control	Regularly	(73/9)85	(94/1)333	(96/8)30	(89/6)448	0/0001
	irregularly	(26/1)30	(5/9)21	(3/2)1	(10/4)52	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Pregnancy status (mother's view)	wanted	(66/1)76	(89/0)315	(96/8)30	(83/8)421	0/0001
	unwanted	(33/9)39	(11/0)39	(3/2)1	(16/2)79	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Pregnancy status (spouse's view)	wanted	(57/4)66	(83/6)296	(96/8)30	(78/4)392	0/0001
	unwanted	(42/6)49	(16/4)58	(3/2)1	(21/6)108	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	
Concern about baby's gender	Not at all	(45/2)52	(70/3)249	(87/1)27	(61/0)328	0/0001
	slightly	(24/3)28	(16/4)58	(6/5)2	(17/6)88	
	A little bit	(24/3)28	(11/6)41	(3/2)1	(16/3)70	
	severely	(6/1)7	(1/7)6	(3/2)1	(5/1)14	
	total	(100/0)115	(100/0)354	(100/0)31	(100/0)500	

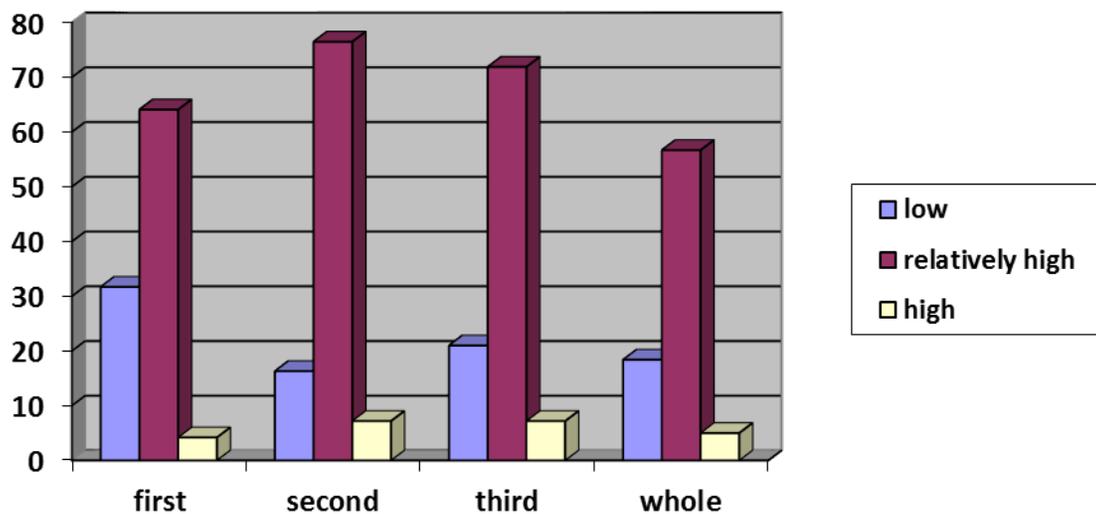


Diagram 1- Distribution of the levels of hardiness in the first, second third trimester and the whole time of pregnancy who referred to health centers of Mashhad

DISCUSSION AND CONCLUSION:

Average score of psychological hardiness of subjects in this study was more than the same score in Beyrami study. There are some differences between the results of the present study and Beyrami study titled "Prediction Strategies for coping with stress during pregnancy on components of hardiness and

social support in nulliparous pregnant women". These differences could be explainable because of the following reasons : the study of Beyrami was only conducted on nulliparous women .secondly only pregnant women in the third trimester with gestational age 38-42 were enrolled .Thirdly, the sample size was only 97 and finally Mean scores of hardiness levels in pregnant women has not been mentioned. While in this study multiparous woman were also enrolled .The sample size was more than the study of Beyrami. Even women were more hardy in the third trimester of pregnancy in this study compared with Beyrami study . Perhaps one reason is that nulliparous women in the third trimester of pregnancy endure more stress and therefore they were less hardy . The mean scores of psychological hardiness and its dimensions in this study was reported more than a study which was conducted by Moein (2011) titled "he relationship between psychological hardiness with marital adjustment" (18). This difference also could be explainable: first of all the study population varies. Secondly, in a study of Moein , samples were employees which may causes more stress. In addition, they were all educated and the mean age of samples were 40. However, by ours most of them had a diploma degree and younger .the mean of the age was calculated only 26 .

The results showed that there is a significant negative correlation between hardiness and perceived stress. More the psychological hardiness in women increases during pregnancy, less stressed would be perceived. The results of Beyrami (2012) et al. showed that there is a positive significant relationship between hardiness and the ability to deal with stress in pregnant women(6). the results of a study by Soderstrom et al.(2000) titled" he relationship of hardiness, coping strategies, and perceived stress to symptoms of illness" stated that there is negative relation between hardiness and persieved stress(32). Delahajj et al.(2010) in a study which is done in Nederland titled" hardiness and the response to stressful situations" reported that hardy people perceived less stress(31). The results of a study of Salvatore(2000) showed that there is a significant negative correlation between components of commitment, control and challenge with severe mental disorders ($p=0.05$) (21). A study titled "The relationship between psychological hardiness and role overload and mental health staff. Islamic Azad University of Shiraz." which is conducted by Iranian et al. (2011) showed that there is significant negative relationship between components of commitment, control and challenge and mental health (anxiety, depression, social activity and physical reactions)($p=0.05$)(17), which are consistent with the results of a present study.

Hardiness help people cope with stressful life events. Commitment plays an important role in stressful life events and makes them interesting and meaningful. Control means someone believe in Thinking that Influencing on life events . Challenge means someone believe in changes as part of normal life and a chance to grow up (34). It can be said that psychological hardiness as an individual characteristic, can cause people to feel better about themselves and the world around them, consequenting more satisfaction and more success in their life. In fact, hardy people have a model that they have been facing in terms of commitment, control and challenge . These patterns lead to a healthy positive consequences, which give people sense of efficacy and control of their own environment and find the suitable coping strategies and finally perceive less stress (35).

According to the results of the present study, there is a significant relationship between psychological hardiness and some demographic and obstetric variables such as: Mother's and spouse education, Mother's employment status, Income , Age, History of abortion, History of delivery, Referring to health centers, Previous experience of delivery, wanted or unwanted pregnancy and Concern about baby's gender. More hardy mothers are, less stress they received.

Kathy et al. (2009) reported that marital status, nationality, education and income were associated with pregnancy stress coping strategies (36). Yali et al (1999) showed that socio-demographic variables including age, income, education, and parity were significantly associated with coping strategies in pregnant women at high medical risk and perceived stress(37). Additionally ,several studies have shown that hardiness was independent from stressful life events and also some demographic variables such as: education, religion, marital status and occupational level(20) .Moein et al.(2011) reported that age and education were not significantly correlated with hardiness(18). According to Lambert, Hardiness is extrinsic not intrinsic ,which is originated from childhood and experiences ,gradually promote and fix

itself as a behavior and feeling in a person's characteristics. Therefore, hardiness as a positive skill like all other skills should be trained Theoretically and experimentally. These skills should not be expected to achieve by itself or over time by getting older or more educated(18). Feyze et al. studied the relationship between variables (age, parental education, family socio-economic status) with hardiness and coping strategies . There is no significant relation was found(38). While the results of this study are contrary to the results of the present study , that the differences could be due to study population, inclusion criteria and tools and also could because of a bigger sample size in this study.

In the present study, it was found that the increasing gestational age results in increasing psychological hardiness .Additionally , women who have had a history of abortion or delivery are more hardy than the who don't .It was also found that wanted pregnancy makes mothers more hardy with lower level of stress. A study of hardiness in pregnancy and correlated variables have not been done yet .therefore, more study in this field is needed. Individual differences and mental state of mothers influence their responds to the questions which the researcher was not able to control it completely.

CONCLUSION:

There is a relationship between demographic, obstetric characteristics and perceived stress and psychological hardiness.

Conflict of interest: No conflict of interest has been expressed

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