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Factors affecting job satisfaction among the nurses working in public sector hospitals (A Case of Lahore, Pakistan)

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ABSTRACT

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Keywor ds

Nepotism-Favoritism, Cronyism, Stress.

Introduction

Nursing is one of the oldest professions in history of human being. Florence Nightingale was probably first person who defined nursing as "A patient may cure by nature but what a nurse do, she put patient in comfortable conditions and environment so that curing process complete as early as possible" (Nightingale, F., 1859).

Nursing is multipurpose profession however there are major six purpose of nursing which emerged as: (Royal college of Nursing)

- i. Promoting and maintenance health activities.
- ii. Caring of people when their health is compromised.
- iii. Provide assistance in recovery.
- iv. Facilitate independency.
- v. Meet needs of patients in as well as out of ward.
- vi. Improve and maintenance of quality of life.

The Pakistan Nursing Council is playing very important role regarding Nursing profession in Pakistan (PNC). PNC was established in 1948 and its office situated at Islamabad. Pakistan is facing nursing deficit. Nurses are encountering many problems while working in hospitals in Pakistan.

According to Pakistan Nursing Council statistics of 2007, only 2343 nurses, 2285 midwives and 911 leady health visitors were trained in Pakistan. There should be eight nurses to one doctor but in our country there is only one nurse for every 15 doctors, and this is a very poor ratio and clearly demonstrates the shortage of nurses. (Baloch, F., 2009)

Many researchers argued that job satisfaction is assessment of many factors including workload, physical conditions, and carrier aspirations of individuals. However more specifically, job satisfaction is defined as the quality of life at work as experienced by the employee, and the condition that could be promoted by social responsibility programs executed by the employer. An important study was conducted by Furnham (1992). He classified the job influence factors into three categories. First category includes organizational policies and procedures that have to do with the nature of the remuneration

Nursing is one of the most crucial health care jobs for any country. The main goal of the study was to determine the job satisfaction of nurses and to explore the factors which play significant role in their job satisfaction. This was cross sectional study. Sample was proportionally allocated to relative hospital sizes. There were 449 nurses selected from six public sector hospitals of Lahore, Pakistan. Descriptive and inferential analyses were done to explore the job satisfaction level of nurses across various classifications. Moreover, using multiple logistic regression different logit models were developed in order to find the predictive strength of job satisfaction using different predictors.

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package, supervision and decision-making practices, and the perception of the quality of supervision. Aspects of the total workload, the variety of skills applied, autonomy, feedback and the physical nature of the working environment were included in second category. The job influencing factors include in third category were Personal aspects such as self-image, ability to deal with stress and general satisfaction with life.

In this study job satisfaction of nurses is determined. There are different types of nurses working in hospital but in this study three types of nurses are included: Staff Nurse, Nursing Supervisor and Head Nurse. These nurses perform different role and duties in hospital ward.

Literature Review

After study of literature on Nurses job satisfaction it is revealed that numerous studies have conducted so far on this issue by many Researchers and Bio-statisticians.

Al-Ahmadi (2009) aims to find out the factors which influence the performance of nurses working in different hospital of Riyadh Region, Saudi Arabia. According to Regression analysis it has been found that Performance is depending upon job satisfaction and organizational commitment. Also there is strong interdependency between some personal factors, including year of experience, nationality, gender and marital status. Furthermore, education level is negatively correlated with Performance.

Dogan et al. (2009) analyzed the job satisfaction and find out the relationship between job satisfaction and factors affecting it like as Pay, Promotion, encouragement of management, holidays, work environment, behavior of colleagues, relationships of coordinates, Participation in decision etc. They find out that management style of supervisor play significant role in determining Job satisfaction level while the other important determinant factors are level role of clearness, health facilities, autonomy, and participation in decision, job involvement, and training and educational facilities.

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Erdern (2008) focused on job satisfaction and burnout levels of hospital staff. The impact of job satisfaction on burnout levels were also investigated in this study. From six hospitals situated at city centre of Elazýð (Turkey) 338 workers were selected. There was significant relationship between job satisfaction and burnout aspects. It may conclude that worker's burnout may reduce if they were facilitated and their job satisfaction level was increased.

Majd (2008) investigated the variables regarding organizational climates of hospital and nurses intent to stay in hospital. It has been found that in hospitals organizational climates most influenced factors were quality of care and professionalism.

Kavari, et al. (2007) investigated the depression in nurses working at Shiraz Namazi hospital and find out the factors which significantly contribute it. In nurses Depression rate of sever, moderate and mild types were 5.4%, 21.5% and 73.1% respectively. Leung (2007) tried to assess the job satisfaction and found the relationship of job satisfaction with stress, wok setting and other demographic variables among Psychiatric nurse.

Takase et al. (2005) conducted a study to examine what kind of environment expect while working in different units of hospital and caring patients, also their work values could explain their job performance and whether they fed up from their current work and intend to quit their job. The finding of study shows that nurses feel comfortable when management appreciate them and give them incentive and bonus and of course it will increase performance and impacts on their job performance. On the other side, negative environmental characteristics discourage them and they tend to quit.

Objective of Study

The main objective of this study is to explore the factors which play important role in job satisfaction of nurses. Moreover, Construction statistical model containing significant variables for different factors and estimate the predicted probabilities.

Research Methodology

This was cross sectional study consisting of descriptive and analytical components. There were seventeen public sector hospitals in Lahore (PMDC). Six hospitals were selected randomly from these hospitals. Selected hospitals were Jinnah Hospital, Service Hospital, Gulab Devi Hospital, Nawaz Sharif Social Security (N.S.S.H) Hospital, Ganga Ram Hospital and Mayo Hospital. The target population of the study was nurses of the all public sector hospitals of Lahore and sampled population was the nurses who working in these six randomly selected public sector hospitals of Lahore. Sample was proportionally allocated to relative population size. So, 449 (17.0% of population) nurses working in mentioned hospitals of Lahore city were selected randomly.

In order to collect the required information from nurses regarding job satisfaction, structured questionnaire was designed.

Data analysis:

Data analysis is divided into two sub-sections: Descriptive analysis and inferential analysis. Descriptive analysis includes graphical representation of different demographic variables.

As the main objective of this study to explore the job satisfaction factor; in order to achieve this end we have used multiple logistic regression. Fadi El-Jardali et al. (2009), Frederic et al (2009), Jon Mulholland et al (2008), P. Chimanikire et al. (

2007), and Larrabee et al (2003) used multiple logistic regression in their studies to investigate the factors which influence the job satisfaction.

Multiple logistic regressions are a type of logistic regression in which there are more than two variables, including several exponential factors. Suppose that the dependent variable Y takes values 0 and 1, and let us consider that if our interest lies to model probability of Y = 1 as a function of some explanatory (X) variables. The logistic regression does not model the relationship between the probability of Y = 1 and explanatory variables directly but through the logit function it can be possible. The model assumes a linear relation between the log of odds and independent variables, $X_1, X_2, X_3, \ldots, X_p$, and can be written in the following form:

Let $\pi(x) = P(Y=1)$ Then,

$$g(x) = \log\left[\frac{\pi(x)}{1 - \pi(x)}\right]$$

= intercept +
$$\beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p$$

The maximum likelihood estimation (MLE) is used to obtain the estimates of the model parameters in the logistic analysis. After estimators of intercept, β_1 , β_2 ,, β_p are computed, it is easy to compute the predicted probabilities using the following formula derived from the above equation:

$$\pi(x) = \frac{e^{\operatorname{intercept} + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p}}{\left(1 + e^{\operatorname{intercept} + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p}\right)}$$

Let Z= intercept + $\beta_1 X_1 + \beta_2 X_2 + \dots + \beta_p X_p$ Then $\pi(x) = \frac{e^z}{(1+e^z)}$

Numerator and denominator is divided by e ^z

$$\pi(x) = \frac{e^{Z}/e^{Z}}{(1+e^{Z})/e^{Z}}$$

$$\pi(x) = \frac{e^{Z}}{(1+1/e^{Z})}$$

i.e.,
$$\pi(x) = \frac{1}{(1+e^{-Z})}$$

 $\pi(x) = \frac{\pi(x)}{(1 + e^{-z})}$ If parameter β is positive, then $\pi(x)$, predicted probability of

(Y=1), is higher for higher values of xi; if β i is negative, $\pi(x)$

is lower for higher values of Xi. (Hosmer & Lemeshow, 1989).

The odd ratio is essential parameter for logistic regression analysis. The ratio of two odds is called odd ratio. The odds ratio can be any non-negative number i.e., $0 < OR < \infty$. The odds ratio equals to 1, indicating the independence of two variables, serves as a baseline for comparisons. This will happen when the two success probabilities are equal. Odds ratio on each side of 1 reflect certain types of association. Values of odds ratio less than one suggest that the odds of a success are less in the first set of data than in the second, while an odds ratio greater than one indicates that the odds of a success are greater in the first set of data. (Aggressti 1996). No single approach to interpretation can fully describe the relationship between a available and the outcome probability. It has been observed that sometimes it becomes difficult for researchers and analyst to interpret the results of logistic regression when the independent and dependent variables are negatively related. Because, in this case often odd ratio are found less than 1. To tackle this situation, a transformation is made named as "inverse odd- ratio" or IOR is a way to explain the results in different metric. (Stephen L.D., 2001). It may be given as:

Inverse Odd Ratio (I.O.R) = 1 / Exp (Unstanderdized Logistic Regression Coefficient Estimate)

Or I.O.R = 1 / Odd Ratio

Furthermore, in order to test the significance of the model Wald test is used, while for checking of goodness of fit of linear logistic and model assessment Cox and Snell's R²cs (1989) is used.

Descriptive Results:

The age selected nurses ranged from 19 to 59 years and mean age was 32.34 with standard deviation of 9.45 years. \pm 9.45 (Mean \pm S.D.)

Nurses were classified into three groups according to their rank; Nursing supervisor, Head nurse and Staff nurse. Most of respondents were staff nurses. All Nursing Supervisor were satisfied. Among Head Nurses 90 % were satisfied and 10% were not satisfied. Out of 357 Charge nurses, satisfied and not satisfied were 312 (87.39%) and 45(12.61%) respectively.





At Jinnah Hospital satisfied and not satisfied nurses were recorded 87% and 13% respectively from total of 68 nurses. Out of 100 participants from Services Hospital, satisfied and not satisfied were found 90.0% and 10.0% respectively. Among 52 respondent of Gulab Devi Hospital, there were 85% who said that they were satisfied from their job while 14% said that they were not satisfied. At Ganga Ram Hospital satisfied and not satisfied nurses were found 83% and 17% respectively. Out of 51 participants of N.S.S.S Hospital, there were 88% who replied satisfied and 12% who replied not satisfied. At Mayo Hospital it was found that out of 142 nurses, satisfied and not satisfied were 89% and 11% respectively.



Figure 1.2

Among the participant married, unmarried, widow and divorced were recorded respectively 52%, 45%, 3% and 1%. Interestingly all widow and divorced nurses said that they are satisfied from their job.



Figure 1.3

The respondents having four different academic backgrounds were selected. The percentage of nurses having academic qualification Matric 49.00%, Intermediate 21%, Graduation 26% and others qualification 4 % were recorded. Mostly nurses have passed Matric.



Analytical results:

The significant factors for job satisfaction were identified using multiple logistic regression and their predictive strengths were measured. As questionnaire were divided into four subsections i.e. Demographic and Socio-Economic Factors, Facilities Provided at Hospital, Environmental Factors and General attitude about Job; so, four multiple logistic model constructed separately for each section.

Demographic And Socio-Economic Factors

Table-1 depict that, the significant factor is found Hospital HOSP. (HOSP (1) = 0.000, HOSP (2) = 0.001, HOSP (3) = 0.000, HOSP (4) = 0.002 and HOSP (5) =0.004). There were six hospitals. Their names and codes were Jinnah Hospital=1, Service Hospital =2, Gulab Devi Hospital=3, Sir Ganga Ram Hospital=4, Nawaz Sharif Social Security Hospital = 5 and Mayo Hospital =6. Mayo Hospital is taken as reference category. The odd ratio of HOSP (5)= 6.278, indicates that nurses working in Nawaz Sharif Social Security Hospital were 6 times more likely to satisfy as compared to those who were working in Mavo Hospital. The odd ratio for HOSP (4) = 4.632. shows that satisfaction level of participants working at Sir Ganga Ram Hospital is 4 times more as compared to participants of Mayo Hospital. Similarly, nurses working at Gulab Devi Hospital and Services Hospital are 6 times and 7 times are more likely to satisfy as their counterpart working at Mayo Hospital as shown from their odd ratios 6.134 and 7.637 respectively. Finally as noted above, the most satisfied nurses are from Jinnah Hospital as indicated by its odd ratio which is 14.000.

Annual Increment in salary (AINCR) is found significant factor (AINCR (0) =0.021). Those who did not had annual increment were coded as "0", and other who had annual increment were coded as "1". The reference group was who had

annual increment. The IOR of AINCR (0) = 1.085 indicates that, nurses who had their annual increment were 1.085 times more satisfied as compared to their counterpart.

The effect of factor family support to become nurse (FAMS) found significant. (FAMS (1) = 0.002 and FAMS (2) = 0.138 which insignificant.) The response were coded as family supported Not at all = 1, to some extent=2 and To great extent=3. The reference category is taken as to great extent=3. The IOR of FAMS (2) and FAMS (1) are 1.760 and 7.757 respectively. It means that nurses whose family support To great extent were 1.757 times and 7.757 times more satisfied as compare to those whose family support To some extent and support not at all.

The significant factor found is about happiness of social status of nurses (HWSS). (Such that HWSS (2) = 0.394 and HWSS (1) = 0.002 and). The response was coded as Not at all = 1, To Some extent = 2 and to great extent = 3. Last category is taken as base category. Since odd ratios are less than 1, so IOR were calculated. The IOR of to some extent and not at all are 1.526 and 5.487 respectively. Hence IOR shows that nurses who were happy with their social status to great extent were 1.526 times satisfied than those who were happy with their status to some extent. The satisfaction level of respondents who were happy at great extent are about five times more as compared to those who were not happy with their social status at all.

Table-2 shows Hosmer and Lameshow test is diagnostic test. The main objective of test is to check the adequacy of the model. Here $\chi 2 = 7.444$ with P- value is 0.490 showing that there is decent fit.

Logit model and predicted probabilities

 $\hat{Y}{=}2.752{+}3.639{*}$ HOSP (1) + 2.033{*} HOSP (2) + 1.814{*} HOSP (3) + 1.533{*} HOSP (4) - 0.082{*}AINCR (0)- 2.028{*} FAMS (1) - 0.565{*} FAMS (2) -1.764{*} HWSS (1) -.423{*} HWSS (2)

Let us consider different situations, to predict probability of satisfaction of a nurse by using above model,

Case I: For a nurse who belongs to Jinnah Hospital, who Do not had annul increment, Family did not support to become nurse and did not happy with her social status. Then $\hat{Y}=0.080$ and predicted probability of satisfaction of nurse is,

 $f(\hat{Y}) = 1/(1 + Exp(-\hat{Y}))$

 $f(\hat{Y}) = 1/(1 + Exp(-0.080)) = 0.52$

So, under above said conditions there are 52% chances that a nurse will satisfying from her job.

Case II: For a nurse belong to Services Hospital, got annual increment, whose family support to become nurse to some extent and not happy from its social status at all. Then $\hat{Y}=0.012$ and chances of being satisfied are 50%.

Facilities Provided At Hospital

Table-3 portrays the effect of factor adequate equipment (AEQP) is found significant. (With P-Values AEQP (1) =0.003 and AEQP (2) = 0.432). There were there response of equipment provided at job, less adequate =1, adequate =2 and more adequate =3. More adequate equipment is taken as reference category. The IOR shows that those who had more adequate equipment were estimated to be 1.391 and 4.292 times more satisfied as compared to those who had adequate and less adequate equipment. Furthermore, AEQP (1) is significant, while AEQP (2) is insignificant as shown by their P-Value. But collectively adequate equipment is significant factor in determining job satisfaction of nurses.

The significant factor found is Facilities Regarding Leave (FLEA). (With P-values FLEA (1) = 0.009 and FLEA (2) =

0.046. The response of facilities regarding leave has three options, less adequate =1, adequate =2 and more adequate =3. The higher code was taken as base category. There is small change in satisfaction level of Nurses who had more facilities regarding leave as compared to those who had equal facilities regarding leave as IOR is 1.100. On the other hand, respondents who had more adequate facilities regarding leave were 3.289 times more projected to be satisfied as compared those who had less adequate facilities regarding leave.

Among facilities provided at Hospital, the significant factor found is Reasonable Income (RINCO). (With P-values RINCO (1) = 0.019 and RINCO (2) = 0.130). The response of Reasonable Income has three category less adequate =1, adequate =2 and more adequate =3. The higher code was taken reference category. The satisfaction level of nurses who said that they had more reasonable income was 4.950 higher as compared to those who responded adequate reasonable income. While the satisfaction level of those who had more adequate reasonable income was substantially very high as compared to those who said less as the IOR was 11.364.

The effect of moderate working hour (MWHR) was found significant (With P-value MWHR (1) = 0.001). The response was coded as no=0 and yes=1. So, odd ratio shows that satisfaction level was 3.084 times higher for those whose job provides moderate working hours as compared to their counterpart.

Table-4 illustrates Hosmer and Lameshow goodness of fit statistic and help to determine whether the model adequately describes the data. Here $\chi^2 = 10.326$, with df =8 and P-value is 0.243 which shows the model adequately fits the data. Therefore we are 95% confident that the fitted model is appropriate.

The logit model for facilities provided at hospital

Case I: A participant whose job provide adequate equipment facilities to some extent, adequate Facilities regarding leave to some extent, provide reasonable income to some extent and no moderate working hour. Then $\hat{Y} = 2.58$ and there are 92 % chances that participant is satisfied from her job.

$$f(\hat{Y}) = 1/(1 + Exp(-\hat{Y}))$$

 $f(\hat{Y}) = 1/(1 + Exp(-0.080)) = 0.92$

Case II: A person whose job provides less equipment, less facilities regarding leave, not reasonable income and no moderate working hour. Then $\hat{Y} = -0.459$ and there are 37% chances that she is satisfied i.e. there are less chances of satisfaction under these circumstances.

Environmental Factors

Table-5 demonstrates the significant factor is found how doctors pay respect DOCTR. (With P-values DOCTR (1) = 0.021 and DOCTR (2) = 0.017). The response was coded as less=1, equal=2 and more=3. The last code is taken as base category. The nurses who said doctor pay more respect are likely to be twice time more satisfied than those who said doctor pay equal respect. On other hand, satisfaction level of those who said doctor pay more respect.

Superintendent Behavior was coded as bad=1, normal=2 and good=3. The significance values are SUPB (1) = 0.007 and SUPB (2) = 0.038. The last category is taken as base category. The satisfaction level of nurses who said Superintendent Behavior with them is good is 4 and 14 times higher than those who said superintendent behavior is normal and bad respectively with them.

Among the environmental factor Heavy work load HWLOD is also found significant (With P- value HWLOD (1) = 0.010). Heavy work load is classified as no=0 and yes=1. From table 4.9 it may conclude that the satisfaction level of nurses who said that there is no heavy work is 3.106 higher as compared to their counterpart.

Table-6 represents the Hosmer and Lemeshow test given in the table shows that the symptomatic fitted model is adequate with chi-square 4.668, based on df = 8 and p = 0.792, indicating a decent fit. So model is appropriate and adequately fits the data.

Logit Model For Environment Factors

 $\hat{Y}{=}~4.222$ - 1.569* DOCTR (1) - 0.97* DOCTR (2) - 2.687* SUPB (1) -0.785* SUPB (2) + 1.133 * HWLOD (1)

Case I: For a nurse whom doctor pays equal respect, with her Superintendent Behavior is normal and there is no heavy work for her, then the calculated $\hat{Y}=3.6$ the probability of satisfaction is 0.97.

Case II: A respondent who is expecting that doctor pay less respect to her, Superintendent behavior is bad and there is heavy work. Then the chances of satisfaction of nurse under said conditions are 75%. For this $\hat{Y}=1.099$.

General Attitude about Job

Table-7 prescribes the significant factor found is parallel of profession (PARAL). (With P – values PARAL (1) = 0.012 and PARAL (2) = 0.002). The response was coded as Worse=1, Equal=2 and Better=3. The higher code was taken as base category. The satisfaction level of those who consider their profession better is 4.739 and 6.369 times higher as compared to those who consider their profession equal and bad as compared to other profession as clear from IOR.

How nurses evaluate (EVAL) themselves, it also affects significantly job satisfaction (With P-values PARAL (1) = 0.012 and EVAL (2) = 0.585 which is insignificant.)Nurses may evaluate themselves as Less than average=1, Average=2 and More than average= 3. The reference category was taken more than average. The IOR shows that respondent who evaluate themselves more than average are 1 times and 12 times more satisfied as compared those who evaluate them average and less than average respectively.

Among factors of general attitude about job; the significant factor was found also wastage of time WAST. (With P-value WAST (1) = 0.009). The nurses who said that they were not wasting their time were coded as "0 "and those who said they were wasting their time are coded as "1". Later category is taken as base. The IOR showed that nurses who were not wasting their time at their job station are four times more satisfied as compared those who were wasting their times.

Table-8 explain that the overall fitted model is adequate with chi-square 7.639, based on df = 8 and p = 0.469, indicating a decent fit. Hence we can conclude that model does not differ significantly from observed data. So model is appropriate and adequately fits the data.

Logit Model General Attitude About Job

 \hat{Y} = 3.015 -3.797 * PARAL (1) -1.558 * PARAL (2) -2.492 * EVAL (1) - 0.308* EVAL (2) + 1.479 * WAST (1)

Case I: A nurse who consider nursing equal to other profession, evaluate herself as an average nurse and she is not wasting her time as nurse then according to above logit model her chances of satisfaction are 93%. As the calculated is $\hat{Y}= 2.628$.

Case II: According to logit model, a participant who supposed that nursing is worse profession as compared to other, consider herself less than average nurse and feel that she is wasting her

time in this profession .Then satisfaction level become very low, there are only 9% chances that she is satisfied being a nurse. For this \hat{Y} = - 2.274. Hence, it may conclude that general attitude about job may impact a lot on job satisfaction.

Conclusion And Comparison

Our Study	Previous Studies
Out of total 449 nurses, there were 395 (88.0 %) nurses found satisfied and 54 (12.0 %) were not satisfied.	Leuong (2007) who found all nurses satisfied in his study.
Hospital, Academic Qualification, Get Salary in time, Annual increment in salary, Family support to become nurse, Happy with social status are significant.	Kavari et al (2007) found that education level impact on the job satisfaction. Also Lundh (1999) showed that satisfaction level increase when management rewards its employee.
The facilities which were found positively significant by Chi-Square test were Adequate staff, Adequate equipment, Facilities regarding leave, Reasonable income, Promotion based on merit, co-operation among colleague, Reorganization of Hardworking.	It was confirmed by the study of Erden (2008), who showed that facilities provided at work station impact positively on job satisfaction.
Doctor Respect, Superintendent Behavior and Heavy work load. Furthermore, multiple logistic regression suggested that; important factors for predicting job satisfaction were how doctor respect, Superintendent Behavior and Heavy work load.	Hogan (2005) found that there is strong relationship between the behave of Superintendent and ward nurse's performance. Ellen Becker et al (2005) documented that stress and work load are decisive in determining job satisfaction.
Among factors of general attitude about job they were; job is dignified and worthy, and nursing profession is parallel, feel as competent, and evaluation as nurse and wasting of time were positively associated with job satisfaction. According to Multiple Logistic Regression job satisfaction may predict by factors considering of Profession parallel to others, evaluation as nurse and wasting of time.	These results were found by Bartram (2004), who highlighted that competence and self determination were major factors in order to find job satisfaction of nurses.

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Factors	β	S.Ε (β)	Wald	df	P-Value	Odds Ratio	IOR
HOSP(1)	2.61	0.723	13.293	1	0	13.599	
HOSP (2)	2.033	0.603	11.372	1	0.001	7.637	
HOSP (3)	1.814	0.667	17.781	1	0	6.134	
HOSP (4)	1.533	0.505	9.206	1	0.002	4.632	
HOSP (5)	1.837	0.641	8.225	1	0.004	6.278	
HOSP (6)	1						
AINCR(0)	-0.082	0.0617	1.772	1	0.021	0.921	1.085
AINCR(1)	1						
FAMS(1)	-2.028	0.649	9.767	1	0.002	0.132	7.575
FAMS(2)	-0.565	0.381	2.197	1	0.138	0.568	1.76
FAMS(3)	1						
HWSS (1)	-1.764	0.575	9.401	1	0.002	0.171	5.487
HWSS (2)	-0.423	0.497	0.725	1	0.394	0.655	1.526
HWSS (3)	1						
Constant	2.752	0.698	15.559	1	0	15.675	

Table-1 Multiple Logistic Model Out Put For Demographic And Socio-Economic Factors

Table -2 Hosmer And Lemeshow TestChi-S quaredf $\chi 2 = 7.444$ 80.490

Table -3 Multiple Logistic For Facilities Provided At Hospital

Factors	β	S.E(β)	Wald	df	P-Value	Odds Ratio	IOR
AEQP(1)	-1.458	0.492	8.796	1	0.003	0.233	4.292
AEQP(2)	-0.33	0.42	0.617	1	0.432	0.719	1.391
AEQP(3)	1						
FLEA(1)	-1.19	0.458	6.761	1	0.009	0.304	3.289
FLEA(2)	-0.095	0.332	4.257	1	0.046	0.909	1.100
FLEA(3)	1						
RINCO(1)	-2.43	1.04	5.462	1	0.019	0.088	11.364
RINCO(2)	-1.6	1.058	2.288	1	0.130	0.202	4.950
RINCO(3)	1						
MWHR(1)	1.126	0.347	10.562	1	0.001	3.084	
MWHR(2)	1						
Constant	3.457	1.120	10.092	1	0.001	31.321	

Table- 4 Hosmer And Lemeshow Test

Chi-S quare	df	P - value
2 10 00 1	0	0.010

 $\chi^2 = 10.326$ 8 0.243

Table-5 Multiple Logistic Model Out Put For Environmental Factors

Factors	β	S.Ε (β)	Wald	df	P-Value	Odds Ratio	I.O.R
DOCTR(1)	-1.569	0.678	5.349	1	0.021	0.208	4.808
DOCTR(2)	-0.97	0.408	5.657	1	0.017	0.379	2.639
DOCTR(3)	1						
SUPB(1)	-2.687	0.59	20.718	1	0.007	0.068	14.706
SUPB(2)	-0.785	0.52	8.201	1	0.038	0.231	4.329
SUPB(3)	1						
HWLOD(1)	1.133	0.442	6.568	1	0.010	3.106	
HWLOD(2)	1						
Constant	4.222	0.571	7.766	1	0.000	18.173	

Table- 6 Hosmer And Lemeshow Test

Chi-Square	df	P - value
$\chi^2 = 4.668$	8	0.792

Fable-7 Multiple Logistic Model Out Put For General Attitude About Jo							
Factors	β	S.Ε (β)	Wald	d.f	P-Value	Odds Ratio	I.O.R
PARAL(1)	-3.797	0.644	17.716	1	0.012	0.157	6.369
PARAL(2)	-1.558	0.503	9.61	1	0.002	0.211	4.7393
PARAL(3)	1						
EVAL(1)	-2.492	0.619	16.212	1	0.014	0.083	12.048
EVAL(2)	-0.308	0.563	0.298	1	0.585	0.735	1.360
EVAL(3)	1						
WAST(0)	1.479	0.417	12.6	1	0.009	4.388	
WAST(1)	1						
Constant	3.015	0.662	20.726	1	0.000	20.399	

Table-8 Hosmer And Lemeshow Test

Chi-Square	df	P - value
$\chi^2 = 8.175$	7	0.129

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