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A This is the last issue of the first year of the journal , the launching of the journal was well received and the number of papers received has widely increased. We have applied for the journal to be indexed by EMRO regional office of WHO.

In this issue a paper from Bangladesh discussed the Contraceptive Behavior among Married Adolescents. The authors stressed that the behavioral patterns of contraceptive acceptance and use differ significantly between adolescents and adults. The study was based on the data collected under the project of UNFPA entitled "Strengthening the Department of Population Science and Human Resource Development". It has been observed from this study that family planning practices among the adolescents is lower than other groups of women. Logistic analysis shows that respondent's education, husband's education, place of residence, religion, husband's occupation, visit of family planning worker, desire for more children and having radio or television in the household are supposed to be the most influential factors on the current use of contraception.

Khoshknab MF, studied the effect of continuing home nursing services on the recurrence rate in schizophrenic patients. He followed a semi-experimental study, whereby the patients are placed into Test and Control groups, with the test group receiving home nursing services after being discharged from the hospital, and the control group not receiving them, and instead of the usual way of the patient returning to the clinic to continue treatment, at the end, the two groups were compared for recurrence rate. The results showed that after 3 months follow up of the control group, 6 of the 24 patient (25%) had a recurrence, while this number was 0 in the test group (0%). The author stressed that the results indicate the importance of home nursing services in preventing the recurrence of the illness.

A paper from Iran and Hungary looked at the relationship between the number of blocked coronary branch arterioles and existing risk factors in 30 - 45 year old men. The researchers selected 200 of 30 to 45 year old men who have been referred to the Hospitals of Tehran Medical Universities with continued references to the catheterization wards. The results showed that there was a relationship between the number of obstructed coronary arteries and high BMI, smoking, history of hypertension in family members, using fat and hydrogenated vegetable oil, eating lamb and confectionary, high blood cholesterol and triglyceride. The authors concluded that whatever the number of risk factors, the chance of coronary artery obstruction is more. So, one of the nurses' roles in societies is extensive educational training programmes for changing poor lifestyle habits and replacing them with better ones. It is recommended that more research is done in the future in women of different ages.

Taavoni S, and Sadeghi S looked at the postpartum headache syndrome. Post partum (postnatal) headache is a common but not entirely understood syndrome. The aim of the authors was to determine the prevalence of post partum headache and the relationship between pre-existing headaches (migraine or tension type) and the post partum headache, also they tried to observe for the prevalence of new onset post partum headache and to determine to what extent it can be dangerous. A total of one hundred and ninety six volunteers were interviewed and examined at the first 48 hours post partum in wards of one of the well known public and educational hospitals in Tehran. The authors concluded that the prevalence of post partum headache among Iranian women was 23.1%. About 27% (6.3% out of 23%) of the post partum headaches in our study were of new onset. There was a significant relationship between positive history of tension headache and post partum headache, but there was no relationship between post partum headache and history of migraine headache.

Mahfoozpour S, Milani MJ , and Nooritajer M conducted a descriptive study to assess the quality of provided Care Services for 0-6 years children, in Urban Health Centers (UHCs), of Shaheed Beheshti University of Medical Sciences & Health Services (SBUMS), in 2002-2003. The study revealed that forty percent of the personnel provided poor care, thirty-one & twenty-nine parents provided medium & good quality of care, respectively. The authors concluded that there is poor quality of care provided for children. The authors further stressed that more research needs to be carried out to assess the impact of interventions on quality and quantity of children's health care services.

Dr Safaa Bahjat presented a review on Malaria in pregnancy. He stressed that malaria has stalked human history for the past 50,000 years, with mention of survivors from 27500 BC during the Xia dynasty in ancient China. The author reviewed the history of Malaria and presented the recent observations on Malaria and pregnancy.

CONTRACEPTIVE BEHAVIOR AMONG MARRIED ADOLESCENTS IN SOME SELECTED AREAS OF BANGLADESH

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ABSTRACT

Adolescents ranging from 10 to 19 ye ars constitute the largest population of the world. They number over one billion and the number is increasing. The behavioral patterns of contraceptive acceptance and use differ significantly between adolescents and adults. Considering the importance of the contraceptive behavior of married adolescents, an attempt has been made in this study to investigate the contraceptive use and pattern of married adolescents in some selected areas of Rajshahi district, Bangladesh. This study is based on the data collected under the project of UNFPA entitled "Strengthening the Department of Population Science and Human Resource Development". It has been observed from this study that family planning practices among adolescents is lower than other groups of women. The current use of contraception among adolescents is 65.3 percent. The pill appears to be the most popular method among the adolescents. Rural and urban differences are still high in the current use of contraception (60.9 percent and 69.9 percent). Logistic analysis shows that respondent's education, husband's education, place of residence, religion, husband's occupation, visit of family planning worker, desire for more children and having radio or television in the household are supposed to be most influential factors on the current use of contraception.

Introduction

Any deliberate practice to reduce the risk of conception is considered as contraception, i.e., contraception is the prevention of conception by which a woman can prevent unwanted pregnancies. Contraceptive use is one of the crucial factors mediating between sexual activities and conception and it is one of the oldest methods of fertility reduction. The use of contraceptives is the most important factor that directly affects fertility.

Both married and unmarried adolescents face the added obstacles of legal and cultural restrictions which limit their access to family planning services. However, unwanted pregnancies resulting from lack of contraceptive use have led to an increasing number of abortions among young women. In many part of the world, despite the fact that young women are often denied access to legal abortion services, both the number and the proportion of abortions performed for young women have been increasing over time (Islam and Mahmud, 1995). Aside from external influences at the socio-cultural and policy levels that affect an adolescent's contraceptive behavior, factors which vary at the individual level are also important, such as whether or not contraception occurs within a stable relationship, and whether or not either partner has had previous experience with contraception.

In our society, adolescent girls often face unwanted pregnancy either through failure of contraceptive methods or by non-use. Moreover, because of early marriage, childbearing is the common norm; unintended pregnancies are not deemed very unusual (Pachauri, 1998). The decision for the pregnancy termination depends on husband or on other family members. As the socio-cultural beliefs regarding abortions are very restrictive in terms of the existing general abortion law of the country, induced abortion is viewed as a shameful act because it is frequently done to end illicit pregnancy (Maloney, Aziz and Sarker 1981).

In society, there are no special contraceptive services for adolescent groups (Pachauri, 1998). The country's social norm, tradition, and legislation has tended to disapprove and restrict contraceptive uses by adolescents (WHO, 1975). In Bangladesh, where 66 percent of adolescents are married, only 9 percent of them use contraceptives, compared to 19.1 percent of married adults (Senanayake et al., 1994). According to Bangladesh Demographic Health Survey (1996-1997), 1 in 3 married women aged between 15 and 19 are using contraceptive methods (BDHS, p. 49). It is widely believed that modern contraceptive methods, especially, the oral pill may lead to infertility. As a result, without any practice of contraception they want to have their first baby soon

after marriage. Jejeebhoy states "contraceptive use depends, to a large extent, on a woman's age, fertility, and duration of marriage; the education contraception relationship should ideally be viewed with these factors controlled" (Jejeebhoy, 1995). A Matlab study findings indicate that "contraception discontinuation was 73 percent higher among parents with no surviving sons and 72 percent higher among parents with no surviving daughters, compared with parents who have children of both sexes (Rahman et al., 1992). Adolescents tend to be begin contraceptive use 1.5 years after marriage, or at an average of 17 years old (Islam-MM et al., 1998).

Although the contraceptive use rate is gradually increasing in Bangladesh, it is still very low compared with any developed country and many developing countries. Since the average age at marriage in Bangladesh remains one of the lowest in the world, a large proportion of the potential acceptors of contraception are married adolescents. Unfortunately little exclusive and comprehensive study on the contraceptive behavior of married adolescents in Bangladesh has been undertaken; therefore, in view of the importance of this matter, an attempt has been made in this study to investigate their contraceptive behavior. For comparison purposes we consider the contraceptive behavior of married young adults along with that of adolescents.

2. Method and Materials

The data of this study was collected under the project of UNFPA entitled "Strengthening the Department of Population Science and Human Resource Development" of University of Rajshahi, Bangladesh. The individual questionnaires collected information on the respondent's fertility behavior and intentions, knowledge and practice of contraception, and availability and accessibility of contraceptives. Information on socio-demographic characteristics, such as education, religion, husband's occupation, household assets, and modern health care practices, among others, were also collected in the individual questionnaire.

These data were collected from the three residential areas, which are rural, urban and sub-urban areas of Rajshahi district, Bangladesh. We collected information of 6000 ever-married women, we found 426 married adolescents (6.39%). All this information was taken by purposive sampling method. The data of this study was collected in June 2004. Univariate tables and logistic regression analysis were used for data presentation and interpretations.

Linear Logistic Regression Analysis

When we examine each independent variable individually, it can only provide a preliminary idea of how important each variable is by itself. So the relative importance of all the variables has to be examined simultaneously by some multivariate methods. There are varieties of multivariate statistical techniques that can be used to predict a binary dependent variable from a set of independent variables. Multiple regression analysis and discriminant analysis are two related techniques but these techniques are applicable only when the dependent and independent variables are measured in interval scale under the assumption that they are normally distributed with equal variances. However, in most applications, the dependent variable may be a dichotomous one and one or more explanatory variables are qualitative or measured in nominal or ordinal scales and the assumption of normality is violated. To overcome this problem, a very interesting and appropriate technique is the linear logistic regression method developed by Cox (1970), which does not require any distributional assumption. This regression is useful when the dependent variable is dichotomous. Since it does not require any distributional assumptions, unlike many other multivariate techniques (i.e. the variables are normally distributed with equal variances), it can appropriately handle situations in which the independent variables are qualitative or measured in nominal and ordinal scale. The logistic regression model can be used not only to identify risk factors but also to predict the probability of success. This model expresses a qualitative dependent variable as a function of

several independent variables, both qualitative and quantitative (Fox, 1984).

Let Yi denote the dependent variable for the 1st observation and Yi = 1, if the 1stith individual is a success and Yi = 0, if the 1stith individual is a failure. Suppose that for each of the individuals k independent variables Xi1, Xi2,…,Xik are measured. These variables can be either qualitative such as residence, religion, education etc. or quantitative such as age, number of living children etc. in logistic regression model, it is assumed that Yi's are normally distributed with mean Pi and variance σ^2, and Pi is defined as the probability of success, that is,

$$P_i = \Pr(Y_i = 1) = \frac{\exp\left[\sum_{j=1}^{k} X_{ij}\beta_j\right]}{1 + \exp\left[\sum_{j=1}^{k} X_{ij}\beta_j\right]}$$

And

$$Q_i = 1 - P_i = \frac{1}{1 + \exp\left[\sum_{j=1}^{k} X_{ij}\beta_j\right]}$$

Where, $X_{i0} = 1$ and β_j's are unknown coefficients.

Estimation of the parameters of β_j's from equation (1) and (2) seems to be very complicated. However, the logit transformation of Pi turns out to be a linear function of Xij, that is

$$\text{Logit}(P_i) = \text{Log}_e \frac{P_i}{1 - P_i} = \sum_{j=0}^{k} X_{ij}\beta_j$$

which express the log odds of occurrence of an event (i.e. dependent variable) as a linear function of the independent variables. Thus logarithm of the value of "success" (P) to "failure" (1-P) are relating it to the independent variables, the logistic parameters can easily be interpreted in turns of odds ratios. Relative odds can be estimated for the categories of each independent categorical variable or combination of such variables.

In logistics regression the parameters of the models are estimated using maximum likelihood method. The contribution of individual variables in logistics regression depends on the other independent variables and the

interpretation is difficult when they are highly correlated. A statistic that is used to look at the partial correlation between the dependent variable and each of the independent variable is the R statistic.

3. Results

3.1 Current Use of Contraception

The term "current use" refers to the method that was being used by an individual client at the time of the survey. Thus, any respondent (or her spouse) using a family planning method at the time of survey was regarded as a current user.

Table 1.1 summarizes the current level of contraceptive use among the adolescents and young adults who were currently married. The results indicate that about 65.3 percent of adolescent women are currently using contraception methods. On the contrary, the corresponding figure for the young adults and for over all ever married women is 87.0 and 75.0 percent respectively. The comparable figure for adolescent women as obtained from 1989 BFS was 15.3 percent (Islam and Mahmud, 1995). The current overall contraception using rate in Bangladesh is 58.1 percent (BDHS, 2004).

From the 1.1 we also see that, among the individual methods, oral pill is the most used method of contraception for adolescent women (79.6 percent), young adults (74.7 percent), and all ever married women of reproductive age (68.2 percent).

Table 1.2 presents the current level of contraception by the currently married women's husband. Among the married adolescent's husband 25.6 percent use contraception, while the corresponding figure for young adult's husbands and all ever married women's husbands is 14.7 and 14.3 respectively. This indicates that husbands are less interested in using contraception, rather they may want their wife's to use the method of contraception. That is the husbands of adolescents are using contraception more than their counterparts of young adults' husbands. Among the various methods of contraception, condom appears as the most popular method of contraception used by the husband

of the married women. About 99.1 percent of adolescents' husbands are using condoms as contraception, while the corresponding figure for young adults and all ever married women's husbands are 97.3 percent and 93.3 percent respectively.

3.2 Discussion about Family Planning

The women in Bangladesh still feel shy about their needs and especially about their family planning needs. Whatever methods they use, almost all of them do not decide on their own. They take the decision from those closely relatedto them. Table 1.3 presents the percentage of women who are currently using contraceptive methods taking the decision from various close relatives. The table indicated that about 93.5 percent of adolescents who are currently using contraceptive methods are taking the decision after discussion eith their husband. The corresponding figures for young adult women is 85.2 percent and for overall women it is 80.3 percent.

That is, husbands are the most reliable person with whom women are taking the decision about family planning. We found that young adult women are more reasonable toward discussong it with a family planning worker. This may be because they are more mature and feel the need of them. Some small percentages were also found about those who discussed family planning with their mothers, mother in law and other close relatives.

3.3 Differentials in Current Use of Family Planning

Current use of family planning varies by various socio-economic variables. Table 1.4 summarizes various socio-economic, demographic and geographic differentials in current use of contraception in terms of percentages using any method at the time of survey. They are useful to identify among other things the sub-groups of population that may be in need of more care and attention in the delivery of family planning devices. The current use of contraception was found to be directly associated with respondent's and their husband's education, number of living children, desire for more children, place of residence and religion.

Among all the characteristics, education of both the respondents and their husbands seem to have the strongest and most positive effect on current use of contraception. The results suggest that the higher educational levels of the respondents are associated with higher contraceptive use i.e., as educational level increases, the percentage of women using contraceptiin increases rather rapidly. However, this effect is more pronounced in the case of adolescent women than of the young adult women. The current use of contraception is 49.6 percent among adolescents who have no education and reached to a high of 56.0 percent for those who have primary education, 62.3 percent for those who have secondary education and reached to 65.8 percent for those who have higher level of education. While for young adult women the corresponding figure is 81.8 percent, 88.9 percent, 89.1 percent and 89.1 percent respectively.

For adolescent women current contraceptive use shows strong variation by the place of residence. Adolescent women who are from rural areas have the percentage of currently using contraception at 60.9 percent and the respective figure for urban and sub-urban places is 69.9 percent and 63.6 percent respectively. However, for young adult women and for all currently married women, place of residence shows moderate variation on current use of contraception; and urban area shows higher use of contraception than sub-urban and rural areas.

Household assets index also shows a significant variation in the current use of contraceptives for adolescents. The result indicates that current use of a contraceptive method is 74.5 percent among adolescents who were form upper classes and reached to a low of 61.5 percent for middle class adolescents and 55.5 percent for lower class adolescents. While for young adult women the corresponding figure is 88.6 percent, 87.4 percent and 82.8 percent respectively.

Number of living children has shown some differential effect on current use of contraception. The result shows that adolescent women who have no

living children are less likely to use any method. Use of contraception among adolescents increases to a maximum of 75.6 percent for those adolescents with 3 or more living children and then descended to 65.1 percent for those having 1 or 2 living children. For young adult women and overall women the use of contraception is the maximum when they have three or more living children, and then declines.

Contraceptive use increases with regular visits of family planning workers, indicating a positive relationship between family planning workers who visit a couple regularly and contraceptive use. The use of contraception is higher (about 60 percent) for adolescent women who have been contacted by family planning workers regularly than those who have been contacted irregularly by the women (57 percent) and who have not been contacted by the women (53 percent). The same picture is also seen for both young adults and overall women.

Husband's occupation appears to make a difference in contraceptive practice. The result suggests that contraceptive use is highest among those whose husbands are servicemen followed by businessmen, farmers, laborers and others. The higher level is related to higher education of husbands. The lower level represents husbands living in rural areas and consequently who may have a lower level of education.

Those who do not desire additional children are more likely to be current users than those who desire additional children. The contraception use is considerably higher, 72.1 percent, for adolescents who do not desire more children than for adolescents who desire additional children (62.9). This is also true for young adult women.

Experience of child loss also has a negative effect on contraceptive use for both adolescents and young adult women.

3.4 Factors Affecting the Current Contraceptive Use among the Adolescents and Young Adults

In this section, we apply logistic regression technique to estimate the effects of selected socio-demographic

and programmatic factors on current contraceptive use among adolescents and young adults.

The logistic model is fitted by considering current use of contraception as the dependent variable, which we dichotomized by assessing 1 if the respondent is using any method of

contraception and 0 for not using any method. The explanatory variables considered in the model are as follows: respondent's education, husband's education, place of residence, religion, husband's occupation, visit of family planning worker, want more children, number of living children, respondent's working status, having radio or TV, experience of child death.

Table 1.5 gives the estimates of logistic regression coefficient (β) corresponding the independent variables, partial R and relative odds calculated for each category of the categorical variables. The inference regarding statistical significance is based on chi-square statistics. The p-value is used to identify the significant effects to assess the relative importance of the selected variables in the model. The odds ratio has a clear interpretation and is straightforward. An odds ratio of greater than 1.00 suggests an increased likelihood of the event occurring (i.e. currently using), while odds less than 1.00 indicate a decreased likelihood of the event occurring. The category with the relative odds of 1.00 represents the reference category for that categorical variable.

Among adolescent women, according to the model, seven variables appeared as the significant predictors of current contraceptive use. These variables are: place of residence, husband's occupation, education of the respondents, husband's education, want more children, visit of family planning worker and having radio or television. The rest of the explanatory variables are found statistically insignificant. For young adult women the significant predictors of current use of contraceptives are: respondent education, husband's education, husband's occupation, desire for more children, number of living children, place of residence and

working status of the respondent.

From the results of logistic regression analysis, it appears that respondent's education have very strong and positive independent effects on contraception with the likelihood of current use increasing significantly for the women of primary, and secondary and higher education. From our data we found that, the adolescent women with primary level of education were 1.016 times as likely to practice contraception as those who had no education and adolescent women of secondary education are found 1.464 times as likely to use a contraceptive as those who are illiterate. As expected, education increases receptivity to "new technologies", including awareness and use of contraception.

Educated women also may desire fewer children than their less educated counterparts because of incompatibility between formal-sector employment and child care (Choe and Tsuya, 1991). Again among young adult women who have primary education are found more likely (odds ratio 1.043) to use contraceptives than their illiterate counterparts and young adults who have secondary and higher education are also found more likely to use contraceptive (odds ratio 1.572) than those who have no education or are illiterate.

Husband's education also exerts a positive significant effect on current use of contraceptive behavior among both adolescent and young adult women. It is observed that the adolescent wives of secondary and highly educated husbands are 1.869 times as more likely to use a contraceptive as those adolescent wives of illiterate husbands. But the adolescent wives of primary educated husbands shows a negative effect on practicing contraception. While young adult wives of primary educated husbands are 1.279 times higher and of secondary and higher educated husbands are 1.936 times higher as likely to use contraceptive as those young adult wives of illiterate husbands

While considering the place of residence, the result shows that sub-urban adolescent women are 0.536 times less likely to use a contraceptive than in rural areas, and urban women

are 4.305 times more likely to use a contraceptive than those women in rural areas. The same picture is also observed for young adult women.

Husband's occupation also has a significantly positive effect on the behavior of both adolescent and young adult users of contraceptives. From the table we see that wives of husbands employed in the service sector were 2.848 times more likely to practice contraception than the adolescent wives of agricultural laborers or farmers. We also found that adolescent wives of businessmen and laborers or other categories were 1.573 and 1.231 times higher than their adolescent wives of farmer counterparts. For young adult women we also observe that the young adult wives of servicemen, businessmen and laborers were more likely to use contraceptives; the respective odds ratios are 1.948, 1.759 and 1.333 with respect to the current contraception use with reference category of farmer husbands.

Religion has an insignificant and positive effect on current use of contraception of the adolescent women. The result shows that Muslim adolescent women are more likely to use contraception than their Non-Muslim counterparts. The same picture is also shown for adolescent women.

The analysis further indicates that frequency of visits by field workers is significantly and positively related to current use of a contraceptive method among adolescent women but insignificantly associated for young adult women. Adolescent mothers are more likely to use family planning methods when the field workers visit them regularly or several times, than those who are not visited at all by the field workers.

The multivariate analysis indicates that the probability of being a current contraceptive user is also 0.845 as low among adolescent women who did want more children compared with those who wanted no more. The corresponding odds ratio for young adult women is 0.346.

Number of living children is another important and significant factor affecting the use of contraceptives

among females; adolescent women have 0-1 children, 0.596 times less likely to use contraceptive than that of having 2 or more living children, and for young adult women having 0-1 children 0.607 times less likely to use contraception than of young adult women having 2 or more children.

From the results we also observe that current contraception practice is likely to be 0.003 times lower among women who were working than those who were not working. Among the young adults the corresponding odds ratio is high, that is working young adult women are 1.158 time more likely to use contraception than their non-working counterparts. It has a significant effect on current use of contraception among young adult women.

Having radio and television in the household of adolescents is an important and significant variable; it contributes positively to the current use of contraception. The relative odds ratio are found to be 1.477 indicating higher prevalence of contraceptive use among adolescents who have radio or television in the household, as compared with those having no such facility.

The experience of child loss also has an independent effect on the current use of contraception. The negative sign of the regression coefficient suggests that, with every increase in the number of children lost, current use of contraceptives decreases among currently married adolescent women and young adult women.

4. Discussions

This study examines the use of contraception among currently married adolescent and young adult women for comparison purposes in Rajshahi district, with particular focus on the extent to which socio-economic and demographic factors exert independent influence on contraceptive use. Low contraceptive use among married adolescents may be attributed to several socio-economic and cultural factors, such as education, religiosity, social conservativeness, husband-wife communication, occupation, economic condition etc. in addition, adolescents

may face greater difficulties in obtaining contraceptive supplies and they may lack proper knowledge of the use of modern contraceptive methods. Most of the adolescent users get supplies of the methods from the field worker and other private sector sources. This may be due to their limited access to the commercial supplies or due to cultural reasons that they may feel embarrassed to obtain methods from commercial supplies. Most of the adolescent married females are economically poor and uneducated; moreover their status in the family and in society is very low. Because they are normally not very active economically outside the home, they have little say in decision making in the family.

From the differential analysis of the study, we found that, education of both respondents and their husband's have a strong and positive effect on contraception use for both adolescents and young adult currently married women. Urban currently married adolescent and young adult women use a higher percentage of contraception than their rural and sub-urban counterparts. Number of living children, desire for additional children, visit of health worker and experience of child loss has also great differences in the current use of contraception among adolescents and young adult currently married women.

With regard to the selected demographic and socio-economic factors related to contraceptive use the results of this study support the hypothesis that respondent's education is one of the most important factors. Evidence suggests that education not only increases awareness of social mobility and creates a new outlook and rationalism among couples, but also reduces desired family size by raising desired living standards, bringing about a better understanding of the reproductive process, better knowledge about health care and access to modern and effective means of birth control. Husband's education also has another most important factor affecting the current use of contraception among the adolescents and young adult married women. Current contraception use is found to increase with the increase in the level of husband's education.

The analysis shows that visits of family planning workers have significant and noticeable effects on the adolescents' and young adults' current contraceptive use. Visits of family planning workers to young couples may play a more important role in developing countries like Bangladesh, where educational level and socio-economic status is very low. Frequent visits by family planning workers and their counseling about family planning methods help to motivate adolescents to accept family planning methods and use them effectively. It also may ensure that the supply of contraceptive methods for adolescents is adequate.

Husband's occupation also shows a strong positively significant association with the current use. Desire for additional children and place of residence has emerged as successively important factors. All were found to be significantly and positively associated with current use of contraception. Although having radio or television in the household is also significant in terms of contraceptive use, it is less importantly so. Among the demographic and socio-economic factors, the number of living children, working status, religion and experience of child loss were not found to have any significant net effect on current use of contraception.

The findings of the study lead to the following policy recommendations, which hopefully can be proved valuable to the policy makers.

The family planning program of the government should be more effective and successful so that a hundred percent knowledge of the people about contraception might be converted to higher use rate. For this purpose family planning workers, and health workers should be introduced to make more effective home visits.

Adolescents need special counseling to dispel misconceptions about contraceptive side effects and health concerns and enhance their negotiating skills. This could be done through special information, education, communication campaigns, and mass media exposure.

Enhance access to information and services targeted to adolescents as a high priority. Adolescents also should be provided information on the availability of the family planning methods and their effective uses.

Provide education and empowerment for the women to increase their status in society.

Many women are afraid or unwilling to discuss with their husbands about limiting the size of their families. Efforts should be made to encourage greater participation of women in all family decisions. Women also should be informed about their rights and privileges.

Lastly, reproductive health and family life education should be included at least at the secondary level of education.

Thus, the results indicate that governmental efforts towards social and economic development as well as explicit attempts to provide widely diffused family planning services will contribute to a higher level of more effective contraceptive use in Bangladesh.

References

1. Bangladesh Demographic Health Survey 1996-97 and 2004. NIPORT, Mitra and Associates, Macro Inc., USA.
2. Choe M.K. and N.O. Tsuya 1991. Why do Chinese women practice contraception? The case of rural Jilin Province. Studies in Family Planning 22(1): 39-51.
3. Cox, D.R. (1970): Analysis of Binary Data. Chapman and Hall Ltd. London.
4. Fox, J. (1984): Linear Statistical Models and Related Methods. Witey and Sons, New York.
5. Islam M.M. and M. Mahmud 1995. Contraception among Adolescents in Bangladesh. Asia-Pacific Population Journal 10(1): 21-38.
6. Islam M.M. and M.N. Islam 1998. Contraceptive use among married adolescents in rural Bangladesh. Journal of Family Welfare 44(1): 32-41.
7. Maloney C., K.M. Aziz and P.C. Sarker 1981. Beliefs and Fertility in Bangladesh (Dhaka: International Centre fro Diarrhoeal Diseases Research, Bangladesh).
8. Jejeebhoy S.J. 1995. Women's Education, Autonomy, and Reproductive Behaviour. Experience from Developing Countries. Clarendon Press Oxford.
9. Pachuri S. 1998. Adolescents in Asia: issues and challenges. Demography India 27(1): 117-128.
10. Rahman M., J. Akbar, F. Phillips and S. Becker 1992. "Contraceptive Use in Matlab, Bangladesh: The RoleGender Preference. Studies in Family Planning 23(4): 229-242.
11. Senanayake P and M. Ladjali 1994. Adolescent health: Changing needs. International Planned Parenthood Federation. International Journal of Gynecology & Obsterics 3:103-113.
12. WHO 1975. Report of a WHO expert committee. Technical Report Series No. 308, pp. 7-27.

Table 1.1 Percentage of Adolescents and Young Adults who are Currently Using Contraceptive Method and the Specific Methods

Currently Using	Adolescent	Young Adult	All
Yes	65.3	87.0	75.0
No	34.7	13.0	25.0
Using Methods			
Oral pill	79.6	74.5	68.2
Injection	13.9	17.3	16.0
IUD	….	1.7	2.1
Safe period	2.7	2.0	3.5
Others	3.8	4.3	10.2

Table 1.2 Percentage of Adolescent's and Young Adult's Husband Using Contraception and the Various Methods of Contraception

Currently using	Adolescent	Young Adult	All
Yes	25.6	14.7	14.3
No	74.4	85.2	85.7
Using methods			
Condom	99.1	97.3	93.3
Azal	…	2.4	4.4
Vasectomy	…	…	2.0
Others	0.9	0.3	0.4

Table 1.3 Percentage of Adolescent and Young Adult who are Currently Using Contraception to Taking Decision with the Discussion of Close Relatives

To whom discussion about family planning	Adolescent	Young Adult	All
Husband	93.5	85.2	80.3
Mother	4.0	6.2	7.4
Mother in law	4.5	7.3	6.2
Family planning worker	26.6	30.7	21.3
Others	6.6	7.3	7.1

Table 1.4 Differentials in Current Use among Adolescents and Young Adults

Factors	Adolescents	Young Adults
Respondent's education		
No education	49.6	81.8
Primary	56.0	88.6
Secondary	62.3	89.1
Higher	65.8	89.1
Husband's education		
No education	54.9	82.1
Primary	56.1	88.6
Secondary	59.1	89.1
Higher	60.1	91.0
Place of residence		
Rural	60.9	82.4
Urban	69.9	90.6
Sub-urban	63.6	87.6
Household asset index		
Lower	55.5	82.8
Middle	61.5	87.4
Upper	74.5	88.6
Number of living children		
0	45.0	56.7
1-2	65.1	88.5
3+	75.7	94.1
Desire for additional children		
Want more	62.9	81.4
Want no more	72.1	92.9
Visit of family planning worker		
Regular	60.1	88.3
Non-regular	57.1	87.7
No	53.4	81.7
Husband's occupation		
Farmer	56.4	83.0
Service	59.2	92.5
Business	56.6	88.9
Labor	56.1	81.6
Others	55.5	76.7
Experience of child loss		
Yes	57.2	87.0
No	64.4	84.8

Table 1.5 Parameter values of Logistic Regression analysis of Current Contraceptive Use among the Adolescents and Young Adults

Variables	Adolescent			Young adult		
	Coeff. (β)	S.E. of Coeff.	Odds ratio	Coeff. (β)	S.E. of Coeff.	Odds Ratio
Respondent's education						
(No education)	-	-	1.000	-	-	1.000
Primary	0.016**	0.357	1.016	0.042***	0.181	1.043
Secondary/Higher	0.381**	0.392	1.464	0.452***	0.198	1.572
Husband's education						
(No education)	-	-	1.000	-	-	1.000
Primary	0.027***	0.398	0.974	0.246**	0.196	1.279
Secondary/Higher	0.625**	0.338	1.869	0.661***	0.224	1.936
Place of residence						
(Rural)	-	-	1.000	-	-	1.000
Urban	1.460*	0.571	4.305	0.086***	0.215	1.090
Sub-urban	-0.623	0.414	0.536	-0.265	0.173	0.767
Religion						
(Non-Muslim)	-	-	1.000	-	-	1.000
Muslim	1.401	1.095	4.060	0.202	0.415	1.224
Husband's occupation						
(Farmer)	-	-	1.000	-	-	1.000
Service	1.047***	0.363	2.848	0.667***	0.240	1.948
Business	0.457**	0.405	1.573	0.565*	0.200	1.759
Labor/others	0.208	0.509	1.231	0.288	0.206	1.333
Visit of family planning worker						
(No)	-	-	1.000	-	-	1.000
Yes	0.235***	0.335	1.265	0.104	0.141	1.109
Desire for more children						
(Want no more)	-	-	1.000	-	-	1.000
Want more	-0.168*	0.282	0.845	-1.061**	0.147	0.346
Number of living children						
(2+)	-	-	1.000	-	-	1.000
(0-1)	-0.517	0.312	0.596	-0.499*	0.307	0.607
Working status						
(Not-working)	-	-	1.000	-	-	1.000
Working	-5.710	14.510	0.003	0.147**	0.304	1.158
Having radio/Television						
(No)	-	-	1.000	-	-	1.000
Yes	0.390**	0.283	1.477	-0.167	0.153	0.847
Experience of child loss						
(No)	-	-	1.000	-	-	1.000
Yes	-0.993	0.821	0.371	-0.116	-0.242	0.890
Constant	7.328	14.537		1.682		0.638

Note: Reference category is in the parenthesis

*** P<0.01, ** P<0.05, * P<0.1

ABSTRACT

Background: One of the most vulnerable groups of the community is under children 6 years, considered as a vital source, in assuring a good future for the country. This study has been conducted to assess the quality of provided Care Services for 0-6 years children, in Urban Health Centers (UHCs), of Shaheed Beheshti University of Medical Sciences and Health Services (SBUMS), in 2002-2003.

Materials and methods: This descriptive study was conducted to assess the quality of care provided for 0-6 years children in urban health centers affiliated with SBUMS. In this research 49 family health department personnel from UHCs were selected through multiple stage sampling, andand according to the different types of services they provided for 490 children, their performances were observed and andthen recorded by only one researcher. The physical environment information of each health center was also recorded for further statistical analysis between variables.

Results: Forty percent of the personnel provided poor care, thirty one, andand twenty-nine parents o provided medium andand good quality of care, respectively. One hundred percent of the developmental care and 94 percent of nutritional care provided, was at a poor level. Provision of referral, follow-ups and reception services was at a mid-range of 77.8 and 74.3 percent accordingly, and growth assessment services were provided at a good level of 58.9 percent. There was a positive correlation between demographic characteristics of the personnel such as; age, marital status, number of their children, course of study, study degree, employment condition, years of work experience, and years of work experience in children services department, with the quality of service provided. The chi-square test also showed a significant statistical relationship (p<0.05), on the other hand, there was no correlation between other demographic variables like the place of living, and in-service education, with the quality of care. Most of the UHCs (57.1%) had a medium level of physical status and facilities, and none of them was reported with good condition. There was a positive correlation between the physical status of UHCs and care services provided by the personnel, the chi-square test was significant (with p<0.001).

Conclusion: Regarding the importance of children under 6 years old health, and the research results, that showed a poor quality of care provided for them, we suggest more research to be carried out to assess the impact of interventions on quality and quantity of child health care services.

QUALITY ASSESSMENT OF PROVIDED CARE SERVICES FOR 0-6 YEAR OLD CHILDREN, IN URBAN HEALTH CENTERS OF SHAHEED BEHESHTI UNIVERSITY OF MEDICAL SCIENCES AND HEALTH SERVICES, TEHRAN, IRAN

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Key Words: Quality of care, Child health care services.

Introduction:

Children under six years old are the most vulnerable group in society. Healthy children are a vital resource to ensure the future well being of a nation (1, 2). Children's health care and development have a broader meaning, which includes the growth and the development of the country. Furth ermore, children's health care is an invaluable investment, and it has an enormous impact on the country's economy and its political stability (3). Therefore, the government takes on the responsibility of providing health care services for the children. Now, providing inadequate services can cause serious problems for the children, their families and ultimately the society. The slow process of the growth and the development of a child makes the explanation of the consequences of insufficient quality of childcare, more difficult; therefore, the poor quality of childcare may not be noticeable for many years (4). Children's health care services have some deficiencies in their quality of care (5). On the other hand, in many other countries, the quality of care in governmental health care units has not been acceptable by the people (6).

Providing a qualitative care is a national priority. Therefore, a profound scientific study is necessary for indication of the quality of children's health care services (7).

Previous research shows that around 68 percent of the services, provided to this age group, had the best quality (1). In case of the type of services, the quality of services provided, were different, for example: Hegelin and colleagues (1998) showed that the services provided in the process of development monitoring were poor. (8). But in Shokrollahi's(1999) research these services were at a good level(8). With respect to the importance of this vulnerable group of society (children under six years old) and due to the existing controversies regarding the quantity and quality of services which have been provided, and also for the purpose of determining the quality of health care services provided for children under six years old by the personnel of urban health centers; this research has been conducted in urban health centers of Tehran affiliated to the SBUMS in 2002-3.

Methods and materials:

Each personnel's performance in different types of services provided by them for 10 children under six years old were observed. Therefore all the services provided for the total of 490 children, were observed and recorded in the checklists. Data collection tools consisted of a questionnaire for demographic characteristics

completed by the research units and two types of observational checklists one related to the observation of physical environment of each health center, and the other for observation of the quality of care in different types of services provided by the personnel, including: growth and development assessment, children's nutritional status assessment, health education of mothers, referral and follow-ups, vaccination, and cold chain maintenance, which were observed and completed by only one researcher.

To determine the validity and reliability of the research tools, content validity and inter rater reliability for the observation checklists, and test-retest reliability for demographic questions was used. Also, the study was approved by the university ethical committee and health authorities.

Results

The results of this research were obtained from 10 urban health centers, with performance observation of 49 personnel of these centers (research units) and 490 children. The observation's percentage in urban health centers of Shemiranat, North and East district health centers in Tehran, were 14.3, 30.6 and 55.2 percent respectively. The demographic characteristics of the personnel at the studied centers showed that: the age of personnel was 32.3 7.9 years old, 71.4% were married, 28.6% were single, 60% of them had between 2 to 4 children and 40% of them had less than 2 children; they had studied midwifery (67.3%), family health (24.5%) and public health (8.2%), and the majority of them had a bachelor degree (63.3%) and 36.7 percent had associate degree. Their job experience was 8.5

The quality of care performed by the personnel of each urban health center, was categorized by different services as presented in chart 1, and shows that services such as assessment of development process, & nutrition, were the poorest services provided. The referral & follow up services were at a medium level; but the immunization & growth assessment, were provided by the personnel at a good level.

The quality of the provided services

Table1. Comparing quality of care provided according to the children's age group

Quality of care provided / Age group of children	Good	Medium	Poor	Total	X² statistics
Less than 2 years old	15 (30.6)	25 (51.1)	9 (30.6)	49 (100)	P<0.001
Between 2-6 years old	10 (23.2)	32 (74.4)	1 (2.4)	43 (100)	

Chart 1: Comparing the quality of health care provided in different services
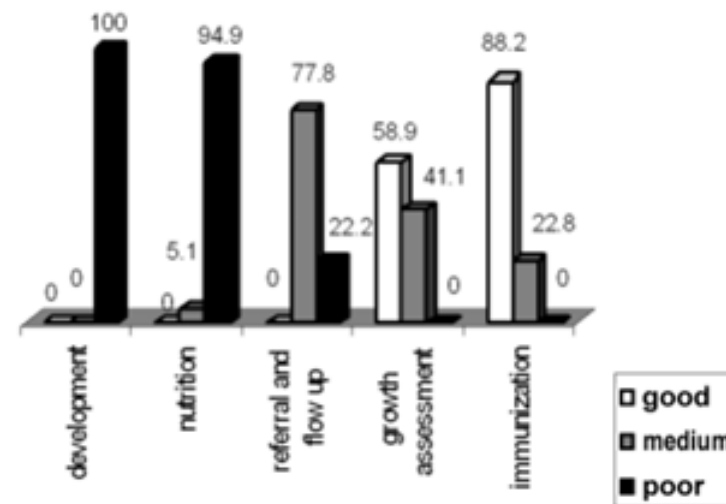
indicated the effect of the demographic characteristics of the staff, in each of the urban health centers. And when factors such as: age, the work experience, & the work experience in childcare unit increases, relatively the quality of services improve. Among the sample units, those who were married had better performance than singles, & those who had 2-4 children were better than those who had less than 2 children, in performing the services. Samples who had studied family health or public health were performing better services than those with midwifery degree, & those who had associate-degree were providing better services than those who had bachelor-degree, those who lived closer to their work places, & also those who completed their continuing education courses, didn't show a better performance (NS).

There was a positive correlation among the demographic characteristics: such as: age, marital status, number of children, study program, degree of study, years of work experience, & the experience in child care unit (r= 0.40 to 0.60 ,p<0.05).

Most of the urban health centers (57.1%) had a medium level of

physical condition & facilities & none of them had a good environmental condition. There was a positive correlation between physical condition & facilities of urban health centers with the quality of providing services by personnel. The chi-square test was significant (r= 0.70, p<0.001).

DISCUSSION

The results indicate that the quality of providing care by 40% of the personnel has been poor; Aldana & colleagues in their studies in Bangladesh in 2001 also showed that the quality of care provided by 32% of health care personnel for children was poor(1). Gest & colleagues' study in North Carolina (2000) indicates that 55 percent of health care services were also poorly provided(11). On the contrary, Seid and colleagues research in California (2001), showed that 55.1 percent of health care personnel provided good services(12). The results of our study indicated that poor services provided for the under two years old children, was 43 times higher than the poor services provided to the 2-6 years old children (p<0.05). Children under 2 years old are vulnerable; now, this question exists that, why the quality of health care for this age group is so poor?.

Can this be considered as a result of too many different services which has to be provided to the children under 2 years old? The answer might be either because of the inadequacy of personnel's knowledge & experience, or lack of enough time for learning, reviewing & education; or other issues that might exist. Therefore, with respect to the importance of the quality of these services, continuous education in some programs is recommended for the quality improvement of these services. Hundred percent of health care staff performed poorly on the child development services. Hagelin & colleague in Sweden in (1998), showed that, the development services provided for children between 2-6 years old is at a poor level(8). Glasco in Pennsylvania (2001), also indicates that majority of studied staff were weak in recognizing children's development problems(13). But, Shokrolahi in Najaf Abad, Iran, (2001), showed that 86.1 percent of the personnel provided good development services(9). She executed her observation by two researchers, and only for one time, which can be a part of the limitations in her research; because, during the observation period perhaps the health care personnel tried to perform the services in a good manner, & caused a biased observation. While in our research, each personnel was observed for 10 times providing different services to different children. This, can be considered an advantage of the present study. On the other hand, Shokrolahi's research has been performed in rural areas of Najaf Abad and it is obvious that provision of primary health care services in rural areas of Iran is better provided than urban areas. Few researchers including Guest & colleague in North Carolina showed that the primary health care in rural areas is preformed better than urban areas(11). This study also shows the poor quality of health care in the development process, & indicators for movement, speech, & recognition. Regarding to the importance of possible problems, which can prevent the progress of the problem & make early treatment possible(1), the poor quality of these services up to 100 percent in our research, is dangerous; and emphasizes the need for more

research to find out the causes. Also 94.9 percent of nutrition services, provided by health care personnel, were poor. Nowadays, nutrition is an important indicator of health care services, especially it has an important effect on children's development & growth; & it is considered as an effective & important factor in preventing diseases. Therefore, it is recommended to use nutrition professionals who are familiar with nutrition science in the health care network systems. Admission is the base of the other services for children; a good admission encourages the continuous visiting, increases the interests & cooperation of the parents. Therefore, it demands an especial attention.

The health care personnel provided the referral & follow up services at a medium level (77.8). Which was similar to the results of Gest et al study (2000),that showed 80 percent of referral & follow up services provided by the personnel was medium(11). Referral & follow up services are essential for early detection of the problems & the family becomes aware of the needed care. It is unethical if the referral & follows up services are not presented at a good level (14). The growth assessment & the immunization services were provided at a good level of 58.9 & 88.2 percent respectively. In Hageline & colleague studies, (1998) in Sweden, the growth assessment was also presented also at a good level(8). In Rezaee's study in Ilam, Iran (2000), 47.5 percent of health care personnel performed the immunization services in an average level(15) In this research, the growth assessment & immunization presented, was good, & since a good quality of these services, prevents children's intensive problems, & saves the investment of the country, it is delightful to see these services are being performed with a good quality. There is a positive correlations of medium to good range between healthcare quality & demographic characteristics such as: age, marital status, number of children, field of study, degree of education, experience, & experience in the child care unit (p<0.05). Ahmadian Shalchi's research (2000), in Savojblagh also shows that there is a correlation

between the age & experience of health care personnel & the quality of providing the services(16). Fathi's study (1999), suggested that there was no correlation between age, marital status, degree of education, living condition, number of children, & experience of health care personnel, & the quality of providing services(17). There was a correlation between the degree of education & job status of health care personnel & the quality of presenting the services(15).

Although in our country the continuous education programs are being enforced, because of its affect on quality of performance, our research showed no significant correlation between continuous education and provision of care, therefore a question which arises here is that, why these periodic educations has not led to the expected improvements in personnel performances in different services, This valuable & important finding has to be studied deeply, & the causes of the lack of success in this continuing education programs should be identified.

There was a positive & good correlation between the physical condition & facilities of urban health care centers & the quality of providing health care services. Mckey & Sobral (1997) showed that the low number of personnel & the room space affects the provision of health care(19). Aldana & colleague in their study on clients satisfaction showed that there is a correlation between waiting time & the personnel's performance(1). Green (1994) in a research on quality of surgery services for adults , showed that the type of hospital (general or specialized), the physical size of the hospital, & number of patients has an effect on the quality of health care performance(20). One of the most important & valuable findings of the present research is showing that high volume of the administrative & statistical paper works, being performed by the personnel of health care centers, seems to decrease the quality of health care services.

Mentioning this issue; it might be of great importance for the official authorities to delegate only technical tasks to the family health personnel, and consider administrative staff for

the time consuming paper works to be completed, in this way, only provision of qualitative health care in different services will be the main focus of health personnel. Reduction in the amount of paperwork's can also be an option. We, therefore, suggest more studies to be carried out about the quality of care, as it is an important & sensitive subject in family & national health of the country.

REFERENCES

1. Aldana J, Helga P, Ahmad A. Client Satisfaction & Quality of Health Care in Rural Bangladesh. Bulletin of the World HealthOrganizatio 2001; 79(6)512-517.
2. Lundy S, Janes S. Community Health Nursing. Massachusetts: Janes & Bartlett; 2001.
3. Basavanthappa B. CommunityHealthNursing. Bangalore: Jaypee Brothers; 1999.
4. Mangione R, McGlynn A. Assessing the Quality of Healthcare Provided to Children. Health Services Research. 1998; 33(4pt2)1059-1090.
5. Homer C. Kleinman LC. Goldman DA. Improving the quality of Care for Children in Health System . Health Services Research. 1998; 33(4pt2)1091-1099.
6. Asai M. "Improving Quality of Health Care". Behdasht Khanevade(Family Health) Tehran, Iran.1997;3(9),3-8.
7. Ferris T, Dougherty D, Blumenthal d, et al. A Report Card on Quality Improvement for Children's Health Care. Pediatrics. 2001; 107(1)171.
8. Hagelin E, Jackson K, Wikblad K. Utilization of Child Health Services During the First 18 Months of Life . Acta Pediatric. 1998; 87(8)996-1002.
9. Shokrolahi A. Assessing the Quality of Health Care for Children under One year Old in Rural Areas of Najaf Abad, Iran. The Thesis for Master of Health & Medical services Management, Tehran University of Medical Sciences & Health Services. 2001.
10. Wood Gl & Haber J. Nursing Research Method . 5th Edition. USA: Philadelphia; 2000.
11. Gest K, Margolis P, Bordley C, et al. Measuring the Process of Preventive Service Delivery in Primary Care Practice for Children.Pediatrics.2000; 106(4)879-885.
12. Seid M, Varni JW, Bermudez LO, et al. Parents Perceptions of Primary Care Measuring Parent's Experiences of Pediatric Primary Care Quality. Pediatrics.2001; 108(2).264-269.
13. Glasco F. Are Over Referral On Development Screening Test Really a Problem. Archeive Pediatr Adolesc Medicine. 2001; 155(1)54-59.
14. Smith C, Maurer F. Community Public Health Nursing.Second Edition. Philadelphia: WB Saunders Company; 2000: 492.
15. Rezai A. Assessing the Quality of Health personnel Performance in prevention of Common Contagious Disease in Rural Areas of Ilam, Iran. The Thesis for Master of Community Health Nursing, Shaheed Beheshti University of Medical Sciences & Health Services. 2000.
16. Ahmadiayan Shalchi N. Assessing the Quality of Health Services in Prevention & Treatment of Acute respiratory Infections in Children Under 5 Years Old in Health Homes of Savojbolagh, Iran. The Thesis for Master of Nursing, Shaheed Beheshti University of Medical Sciences & Health Services. 2000.
17. Fathishahrivar F. Evaluating the health Personnel's' Performance in Pregnancy Health Care in Health Home's of Shimiranat District Health Center,Theran, Iran. The Thesis for Master of Community Health Nursing, Shaheed Beheshti University of Medical Sciences & Health Services. 1999.
18. Mckey M, Sobral M. Staff Evaluation of High Risk Pregnancy Program. Public Health Nursing.1997; 14(2)101-110
19. Green M. "Child Health Guidelines for Health Supervision of Infants, Children".[homepage].1994.[Online].<http://www.hsr.org>.[5 Dec 2001].

THE RELATIONSHIP BETWEEN THE NUMBER OF BLOCKED CORONARY BRANCH ARTERIOLES AND EXISTENCE OF RISK FACTORS IN 30 - 45 YEAR OLD MEN.

ABSTRACT

Introduction: There are a lot of factors like, BMI, age, meat consumption, history of diseases in family, levels of cholesterol and triglyceride, which can cause coronary artery obstruction.

Objectives: To determine the relationship between the number of blocked coronary branch arterioles and existence risk factors in the 30 - 45 years old men.

Materials and Methods: This is a correlation or associational research which determines the number of obstructed coronary arteries after catheterization in the sample group. The risk factors of coronary artery obstruction distinguished after asking patients, clinical tests and laboratorial results and then the relationship between two variables, have been measured.

Samples: The researchers selected 200 of 30 to 45 year old men who have been referred to the Hospitals of Tehran Medical Universities with continued references to the catheterization wards.

Results: The results showed that there was a relationship between the number of obstructed coronary arteries and high BMI, smoking, history of hypertension in family members, using fat and hydrogenated vegetable oil, using lamb and confectionary , high blood cholesterol and triglyceride.

Conclusion: With due regard to the result of this research, whatever the number of risk factors is more, the chance of coronary artery obstruction is more, too. So, one of the nurse' roles in societies is extensive educational training programmes for changing wrong lifestyle and replacing wrong habits with right ones. It is recommended that more research should have done in future in women of different ages.

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Introduction:

In spite of successful achievements in diagnosis and cure ofcardiac diseases, prevention is the most important and the best way of fighting them. Biology has the main role in prevention with diagnosis of amendable factors of diseases. (1). Alain said with due to the numerous epidemiological assessments of coronary artery disease during the last 40 years, researchers have recognized the main factors that cause these diseases and the appropriate ways to prevent and control them for decreasing mortality in different countries. (2)

With due regard to the improvement of economical and social factors in this century, the Association of Cardiac Diseases Prevention in 1986 stated: the factors like increase of population, progress, age, migration, inappropriate nourishment, obesity, smoking, inappropriate human relationships, lack of exercise, increase of stressors have been changing the main appearance of diseases (3). Among them, the most important cause of death, especially in middle–aged and adults are coronary artery diseases. These diseases were mainly limited to adults in developed and industrial countries 30 years ago but these days they have been seen in third world countries and among youth more than before. Therefore, they can involve many people in the age of economical powers and cause death. (4) .These days they have been named "The scourge of the century 982,579 people had been affected with coronary artery diseases in 1988 and 511,050 people had died because of that Due to high prevalence of these diseases and extravagant expenses of healing and high mortality rate all over the world.(5) prevention is a very important effort and in this direction, the most important step is informing people about risk factors (2). After training the American people about the risk factors of coronary artery diseases since 40 years ago, the mortality rate has decreased." In the year 1950 the number of deaths, related to age infarction, was 226 in every 1000 people but in 1987 it haddecreased to 124 in every 1000 people.(5)

One of the most important factors of coronary arteries obstruction and Myocardial Infarction (MI) is coronary artery atherosclerosis for which susceptible factors are: age, sex, hypertension, smoking, high cholesterol and triglyceride, diabetic, obesity, lack of movement and using OCP.(6)[1] Each factor can increase the risk of suffering independently." On the basis of this, this research tries to show the relationship between existence of some risk factors or most of them with the number of obstructed coronary arteries. So, it is hoped that it could show the importance of

1   □ Oral Contraceptive Pill

prevention of coronary artery diseases for high risk people. (2)

Hypothesis:

There is a relationship between the number of obstructed coronary arteries and the risk factors for them.

Materials and Methods:

This is a correlation or associational research which determines the relationship between risk factors and the number of obstructed coronary arteries. Samples of this research were 200 suspicious of coronary artery obstructed men in 30–45 age group, who have been chosen with continued sampling from the patients that have been referred for catheterization in hospitals of Tehran's medical universities . Therefore the qualified patients must have been referred to the hospitals by specialists for catheterization during the last 2 or 3 months.

The data collection instrument was a questionnaire. For data collection, the number of patients' obstructed coronary arteries, which have been distinguished after catheterization, have been recorded from their files and then the risk factors have been distinguished via interview with patients, information in their files and laboratory tests . Collected data have been analyzed with SPSS and then the relationship between each risk factor and the number of obstructed coronary arteries has been determined with statistical tests.

Catheterization had shown that 23.5 % of patients with suspected coronary artery obstruction had no sign. The results showed that most of the samples (34.5%) had 2 obstructed arteries. (Table 1)

Table 1: The number in samples (n = 200) blocked coronary branch arteriole

Coronary branch arterioles	number of men	%
None	47	23.5
One	52	26
Two	69	34.5
Three	32	16

The mean value and standard deviation of the number of obstructed coronary arteries were 1.43 and 1.02.

Results showed that only 17 men from 200 who have attended for this research had normal B.M.I.. 37% of them who were overweight and 50% who were obese, had 2 obstructed coronary arteries. Pearson's correlation coefficient showed that there is a relationship between the number of obstructed coronary arteries and B.M.I ($r=0.24$). Analysis of variance showed the positive relationship between these two variables, too. ($P < 0.05$) (Table 2)

Results showed that there wasn't any relationship between the number of blocked coronary branch arterioles and educational level, marital situation, type of profession, amount of work or sleep. There wasn't any relationship between the number of obstructed coronary arteries and living in rural or urban societies and also the history of myocardial infarction in parents.

Results showed that men who didn't have any obstructed coronary artery and history of hypertension in their families, were more in number than others. (Table 3)

X also showed the positive relationship between these two variables.

($p < 0.05$)

Table 2: The number of B.M.I in samples (n = 200 blocked coronary branch arterioles)

BMI	The number of arteries blocked			
	0	1	2	3
Thin (< 20)	29 (33.3%)	21(24.1%)	23(26.4%)	14(16.1%)
Normal (21 – 25)	0(0)	4 (23.5%)	10(58.5%)	3 (17.6%)
Overweight (26 – 30)	18 (19.6%)	25(27.2%)	34(37%)	15(16.3%)
Obese (31<)	0 (0)	2 (50%)	2 (50%)	0 (0)

Table 3: The number of coronary branch arterioles and the history of hypertension in samples (n = 200)

Hypertension in parents	the number of obstructed coronary arteries			
	0	1	2	3
Yes	8(13.1%)	21(31.4%)	21(31.4%)	11(18%)
No	38(30.6%)	28(22.6%)	39(31.5%)	19(15.3%)
Unaware	1 (6.7%)	3 (20%)	9 (60%)	2 (13.3%)

Table 4: The number of blocked coronary branch arterioles) and the number of cigarettes the men smoke (n=200)

The number of cigarettes	the number of blocked arterioles			
	0	1	2	3
0 – 2	29(33.3%)	21(24.15)	23(26.4%)	14(16.1%)
3 – 20	18 (19.6%)	25(27.2%)	34(37%)	15(16.3%)
21 – 40	0 (0)	4 (23.5%)	10 (58.5%)	3 (17.6%)
+ 14	0 (0)	2 (50%)	2 (50%)	0 (0)

Table 5: The number of blocked coronary branch arterioles and the amount of people eating lamb in samples (n=200)

The amount eating lamb	number of blockedarterioles			
	0	1	2	3
Never	0(0)	2 (40%)	3 (60%)	0 (0)
Sometimes	26 (24.7%)	24(32%)	16(21.3%)	9 (12%)
Most of the time	14(16.3%)	15(17.4%)	41(47.75)	16(18.6%)
Always	7 (20.6%)	11(32.4%)	9(26.5%)	7(20.6%)

Most of the men who hadn't smoked or have smoked less than two cigarettes didn't have any obstructed coronary artery but 58.8% of patients who have smoked 21 – 40 cigarettes had two obstructed coronary arteries. .Pearson' s correlation coefficient showed that there was a relationship between the number of cigarettes smoked and the number of obstructed coronary arteries ($r = 0.24$). Analysis of variance showed the positive relationship

between these two variables, too. (p< 0.05)

Findings showed that eating beef, birds and fish didn't have any relationship with coronary artery obstruction but Xand analysis of variance showed the positive relationship between eating lamb continually and the obstructed coronary arteries was (p < 0.05) . 47.7% of men who always ate lamb had two obstructed coronary arteries.(Table 5)

Results showed the relationship between using fat or hydrogenated vegetable oil and coronary artery obstruction (p<0.05) but there wasn't any relationship with vegetable oil.

68% of men who used fat and 50%, who used hydrogenated vegetable oil, had two obstructed coronary arteries. (Table 6)

Results showed that there wasn't any relationship between using dairy products and salt with coronary arteries obstruction but there was a relationship between the amount of eating confectionary and obstructed coronary arteries, X and analysis of variance showed a positive relationship between them (p<0.05). 26.6% of men who always ate confectionary had three obstructed coronary arteries and 50% of men who sometimes ate confectionary had two obstructed coronary arteries (Table 7).

In addition to the factors related to place of living, habits and family history of risk factors, clinical findings have been assessed and the relationship between them and the number of obstructed coronary arteries have been measured. There wasn't any relationship between patients' systolic and diastolic pressure and the number of obstructed coronary arteries but findings showed the positive relationship between the level of cholesterol and triglyceride and the number of obstructed coronary arteries. Results showed that 95% of men who had cholesterol higher than 330 mg/dl had two or three obstructed arteries, but those who had cholesterol less than 260 mg/dl had less than two obstructed arteries and the men with cholesterol less than 190 mg/dl had one obstructed artery.(Table 8) Pearson's correlation coefficient (r=0.78) and analysis of variance (p<0.05) showed the positive relationship between these two variables. Results showed that 64% of men with triglyceride higher than 220 mg/dl had more than two obstructed arteries.(Table 9) Pearson's correlation coefficient (r=0.26) and analysis of variance (p<0.05) showed the positive relationship between these two variables.

Table 6: **The number of blocked coronary arteries and the amount of people using** fat and hydrogenated vegetable oil in samples (n=200)

Amount of fat	the number of coronary arteries			
	0	1	2	3
Never	30(34.5%)	26(29.9%)	20(23%)	11(12.6%)
Sometimes	15(25.9%)	12(20.7%)	21(36.2%)	10(17.2%)
Most of the time	0(0)	6(24%)	17(68%)	2(8%)
Always	2(6.7%)	8(26.7%)	11(36.7%)	9 (30%)

Amount of hydrogenated vegetable oil		Number of blocked coronary		
	0	1	2	3
Never	17(36.2%)	9(19.1%)	14(29.8%)	7(14.9%)
Sometimes	5(18.55)	5(18.5%)	9(33.3%)	8(29.7%)
Most of the time	1(2.9%)	10(29.4%)	17(50%)	6(17.6%)
Always	24(26.1%)	28(30.4%)	29(31.5%)	11(12%)

Table 7: The number of blocked coronary branches and the amount of people using confectionery samples (n=200)

Amount using confectionery		the number of blocked coronary		
	0	1	2	3
Never	17(36.2%)	9(19.1%)	14(29.8%)	7(14.9%)
Sometimes	24(26.1%)	28(30.4%)	29(31.5%)	11(12%)
Most of the time	1(2.9%)	10(29.4%)	17(50%)	6(17.6%)
Always	5(18.55)	5(18.5%)	9(33.3%)	8(29.7%)

Table 8: The number of blocked coronary branches and the level of blood cholesterol in samples (n=200)

The level of blood cholesterol (Mg/dl)		the number of obstructed coronary artery		
	0	1	2	3
≤ 119	14(93.3%)	1(6.7%)	0 (0)	0 (0)
120 – 190	24(80%)	4 (13.3%)	2(6.7%)	0 (0)
191 – 260	6(35.3%)	9 (52.9%)	2(11.8%)	0 (0)
261 – 330	3(5.1%)	34(57.6%)	18(30.5%)	4(6.8%)
331≤	0(0)	4(5.1%)	47(50.5%)	28(35.4%)

Table 9: The number of blocked coronary branches and the level of blood Triglyceride in samples (n=200)

the level of blood triglyceride (Mg/dl)		The number of obstructed coronary arteries		
	0	1	2	3
≤99	22(34.4%)	17(26.6%)	18(28.1%)	7(10.9%)
100 – 140	18(31%)	10(17.2%)	26(44.8%)	4(6.9%)
141 – 180	6(24%)	5(20%)	5(20%)	9(36%)
180 – 220	0(0)	5(55.6%)	3(33.3%)	1(11.1%)
221≤	1 (2.3%)	15(34.1%)	17(38.6%)	11 (25%)

Discussion:

Findings showed that the existence of risk factors in samples of this research could be a factor for coronary artery obstruction. Some of the factors had no relationship with blocked arteries but some had a positive relationship.

For hypothesis testing, the number of risk factors in each person has been determined and then the relationship between them has been measured by using Pearson's correlation coefficient and X. Results showed that there

was a relationship between the number of obstructed coronary arteries and the number of risk factors in samples.(r=0.54) (p<0.05). The minimum of existence risk factors was 1 and the maximum was 14.Whenever the risk factors became higher the number of obstructed coronary arteries becamehigher too.(Table 10) So, the hypothesis has been proved.(7)

McHugh believed that nurses, as members of health team, can and should try to prevent and decrease coronary artery diseases.

Table 10: The number of blocked coronary branches and the number of risk factors in samples (n=200)

The number of risk factors	the number of blocked coronary arteries			
	0	1	2	3
1 – 4	39(84.8%)	4(8.7%)	3(6.5%)	0 (0)
5 – 9	8(10.8%)	32(43.2%)	25(33.8%)	9(12.2%)
10 – 14	0(0)	16 (20%)	41(51.25%)	23(28.75%)

Most of the time, changing badhabits with good habits, like using hydrogenated oils instead of non- hydrogenated oils or removing poultry skin can decrease the risk of suffering from coronary artery diseases.(8)

The nutrition habits of people must have interfered with extensive healthy programmers. Tohange people's habits it is needed to have comprehensive educational programmes. So it is necessary that governments on one side and the food industry from the other side should encourage people to prepare healthy food. People need to change their wrong nutritious habits with right ones and use fresh vegetables and fruits in their daily diets more. To this purpose, it is necessary to teach everyone in society.(2)

Finally, it is suggested to do this research on women and in different ages and furthermore the importance of each factor has been defined, alone.

Acknowledge

References

1. Michael, D Feher .Lipid lowering to delay the progression of coronary artery disease Heart. 2003 April; 89(4): 451–458.
2. Alan D. Lopez, Colin D. Mathers, Majid Ezzati, Dean T. Jamison, Christopher J. L. Murray, editors .Global Burden of Disease and Risk Factors . Washington (DC) IBRD/ ; 2006
3. Thomas E. Lyles, III, Renee Desmond, Lori E. Faulk, Suzanne Henson, Kathy Hubbert, Douglas C. Heimburger, and Jamey D. Ard .Diet Variety Based on Macronutrient Intake and Its Relationship with Body Mass Index. MedGenMed. 2006: August; 8(3): 39
4. Dean T. Jamison, Joel G. Breman, Anthony R. Measham, George Alleyne, Mariam Claeson, David B. Evans, Prabhat Jha, Anne Mills, Philip Musgrove, editors Disease Control Priorities in Developing Countries 2nd. Ed 2006; Washington (DC).
5. Braune wald.E.Health disease: a text book cardiovascular medicine, 5th Ed W.Bsaunders.co:2001
6. Harrison, S.principles of internal medicine, 1991. MC Grow-Hill CO
7. F McHugh, G Lindsay, P Hanlon, I Hutton, M Brown, C Morrison, and D Wheatley.Nurse led shared care for patients on the waiting list for coronary artery bypass surgery: a randomized controlled trial .Heart;2001 September; 86(3): 317–32
8. Reza Rastmanesh, Furugh Azam Taleban, Masood Kimiagar, Yadolah Mehrabi, and Moosa Salehi .Nutritional Knowledge and Attitudes in Athletes With Physical Disabilities Athl Train. 2007; Jan–Mar; 42(1): 99–105

MALARIA IN PREGNANCY

Dr Safaa Bahjat

Mal aria: bad air (medieval Italian).

Malaria has stalked human history for the past 50,000 years, with mention of survivors from 27500 BC during the Xia dynasty in ancient China. In 1880, Charles Alfonso Louis Alphonso Lavaren identified the parasite (Plasmodium spp) responsible for malaria and at the turn of the century Sir Ronald Ross proved that it was the mosquito that spread the infection. For a while it become common to use malaria in targeting syphilis, at the time of mortal affliction. The patient would be deliberately infected with malaria to induce fever. This would be treated with quinine (isolated from an old Peruvian remedy) in the hope that the one illness be regulated, the other halted.

So long as woman has walked the earth, malaria has stalked her, however the problem of malaria in pregnancy was not described until the early 20th century. Over 50 million women are exposed to the risk of malaria in pregnancy every year. Pregnancy associated malaria results in substantial, and especially fetal and infant, morbidity, causing 7500-200000 infant deaths every year. Both Plasmodium falciparum and Plasmodium vivax infections can cause adverse pregnancy outcomes including maternal anemia and low body weight due to pre-term delivery and fetal growth restriction, but much could differ. Pregnant women are more susceptible to malaria than non-pregnant women, and this susceptibility is greatest in the first and second pregnancy. Although some other infectious diseases are also worse in pregnancy, malaria seems to be a special case. Susceptibility to pregnancy-associated malaria probably represents a combination of immunological and hormonal changes associated with pregnancy (although the nature of the latter is the subject of debate) combined with the ability of a subset of infected erythrocytes to sequester in the placenta. Extensive evidence confirms that antibodies directed against the surface of infected erythrocytes in the placenta are important in protection, and are usually absent in the first pregnancy(1). In high transmission areas such as Sub-Saharan Africa, malaria in pregnancy is predominantly asymptomatic and yet is a major cause of severe maternal anemia and low birth weight babies. In low transmission areas, such as in many parts of Asia and Latin America, women have a little acquired immunity to malaria by the time they become pregnant and so infections are often symptomatic and are more likely to become severe and result in maternal and fetal death.

On the basis of the above review, it is clear that the clinical consequences to mother and child, of malaria in pregnancy, and the magnitude of the problem, are enormous. However, we have very little information from Asia and Latin America, and even for Africa we are currently unable to make an evidence based statement on whether the overall burden of malaria in pregnancy has increased, decreased or remained at a steady state in the past few decades. At present there are substantial knowledge gaps regarding the burden of malaria in pregnancy, that impede our understanding of, and ability to control this important public health problem.

Rapid assessment of the burden of malaria in pregnancy has recently been developed and done in Asia (Bangladesh, India, Burma, Indonesia), in low transmission areas of French speaking Africa (Madagascar, Senegal, Niger, Mali ,and Mauritania), and will soon be done in North and Central America. However, these assessments have not always been done over a sufficient length of time (a full year). The first gap of knowledge is on the effect of a single plasmodium infection or asymptomatic infection on the burden of malaria in pregnancy. The second gap is on the effect of malaria in pregnancy (by gravidity) on infant and child health as well as the long-term cumulative effect of malaria on pregnancy. The third gap is on the burden of malaria in the first trimester and it's correlation with adverse outcomes. (2)

The Economic Burden of Malaria in Pregnancy

There are two possible approaches to estimating the economic burden of malaria in pregnancy. Microeconomic approaches are used to measure the effect of the disease on an individual or household, while macroeconomic approaches measure the effect of the diseases on an entire society. Taking a traditional micro level approach, economic cost can be categorized as direct, indirect and intangible and can be measured from the perspective of the government (mainly Ministry of Health) ,and households.

The direct costs of malaria in pregnancy can be divided into:

1. the cost arising from interventions targeted at all pregnant women in malaria endemic settings.

2. the additional costs arising as a consequence of malaria infection in pregnant women .

Direct cost to the health service arising from specific interventions for preventing or treating malaria in pregnancy include the cost of the Intermittent Preventive Treatment in Pregnancy (IPTp). Direct costs associated with malaria infections in pregnant women include the immediate costs of maternal infection and also the immediate and long term costs of treating the consequences of maternal infection on the infant, most of which relates to mitigating the consequences of low birth weight. Immediate costs are those of additional outpatient consultations, hospitalization, staff time, diagnostic tests, drugs and other supportive treatment. The cost incurred by the mother (or her household) include those of obtaining additional health care such as transport, drug costs and consultation fees.(3)

Case Management of Malaria in Pregnancy (4)

*Diagnosis of malaria in pregnancy: In most malaria endemic regions women do not have access to parasitological diagnosis or even

to treatment. In areas of high transmission, to leave parasitaemic but asymptomatic adults untreated is common practice. The assumption is that the natural immunity of such individuals will control the infection. However, in pregnant women the presence of malaria parasite, even transient without symptoms, is harmful for the mother and fetus, whether or not placental malaria is detected at delivery. The biological diagnosis of malaria during pregnancy is also essential to avoid the unnecessary exposure of the mother and fetus to antimalarial drugs. New treatments of malaria are more expensive and to confirm the diagnosis of malaria before treatment is cost effective, especially if one takes into account the added risks, both morbid and iatrogenic, to the fetus. The confirmation of malaria diagnosis can be done either by microscopic examination (the current gold stained) or by use of a rapid diagnostic test that detects specific parasite antigen. An experienced and well-equipped microscopist can detect 15 parasites per uL of blood. In most non-pregnant malaria cases, this is well below the pyrogenic density threshold above which patients present with symptoms. However, during pregnancy asymptomatic low parasite densities and parasites sequestered in the placenta are harmful to the mother and the fetus, so the sensitivity of microscopy is insufficient in these cases. Together with the practical strains of microscopy, the lack of sensitivity impairs the detection of pregnant women who need treatment and assessment of the efficacy of anti-malarials. More recently, rapid diagnostic tests have been developed. Such tests are practical but do not have the sensitivity needed in pregnancy. Polymerase chain reaction (PCR) is used in research settings or genotyping and detection of malaria parasites and is marginally more sensitive than microscopy. A microscopic blood examination or rapid diagnostic tests can be done either because a pregnant woman presents with symptoms (or a history of symptoms) compatible with malaria, or a part of systematic antenatal screening (bearing in mind the limitation of detection). In all malarious areas, every time a regnant woman

is seen in an antenatal consultation, a blood test for malaria should be done and positive cases treated appropriately. In areas of intense and stable transmission, the absence of evidence of plasmodia in peripheral blood on a single occasion does not exclude infection. Parasitaemia can fluctuate and be kept under the level of detection (total biomass of about 1,000,000,000 parasites) by acquired immunity or self-medication, and Plasmodium falciparum can sequester in the placenta. These factors complicate the assessment of the efficacy of anti-malarial drugs and under line the need for more diagnostic tools .The earlier in pregnancy and the more frequent the antenatal consultations and blood screening, the more likely a malarial parasite will be detected and treated. This early detection and treatment has been shown to reduce the placental burden, a key step in reducing the harmful effects on the fetus. In the presence of a well implemented, effective, and safe prevention strategy intermittent preventive treatment and vector control) the frequency of antenatal visits could be limited.

Current Recommendations For Case Management

Uncomplicated falciparum malaria
First trimester

First episode quinine 10mg/kg three times a day for 7 days preferably with clindamycin 5mg/day three times per day for 7 days.

Subsequent episodes: repeat treatment with quinine, clindamycin as above, Artemsinin based combination therapy (ACT) that is locally effective, or artesunate 2mg per day for seven days with clindamycin as above

Second and third trimester

First episode: ACT that is locally effective or artesunate plus clindamycin as above. - Subsequent episodes: artesunate plus clindamycin as above; or quinine plus clindamycin as above.

Prevention

Intermittent preventive treatment with sulfadoxin-pyrimethamine where efficacy remains.

Severe malaria

Artesuminate 2-4mg/kg intravenously at hours 0, 12, and 24 and continued for 24 hours until the patient can tolerate aretsunate 2mg/g per dose and clindamycin 5mg/kg three times daily for 7 days,

OR

Intravenous quinine: loading dose 20mg/kg given over 4 hours after the loading dose is started, followed by 10mg/kg every 8 hours for 7 days. Once the patient has recovered sufficiently to tolerate oral medication both quinine 10mg/kg and clindamycin 5mg/kg three times daily, and continued for 7 days.

Non-falciparum malaria

Chloroquine phosphate (1 tablet contains 250mg salt equivalent to 155.3mg base). Dose is 10mg/kg base once a day for 3 days followed by 5mg/kg base on the third day. For chloroquine resistant p.vivax, amodiquanine, quinine or armetsinin derivatives can be used.

Prevention

Chloroquine phosphate 600 mg base on admission followed by 300 mg base per week.

POSTPARTUM HEADACHE SYNDROMES AMONG IRANIAN WOMEN IN TEHRAN

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ABSTRACT

Background: Spiritual well-being is Post partum (postnatal) headache is a common but not entirely understood syndrome. Usually when someone speaks about benign post partum headache, migraine and tension type headache are two possible diagnoses, but we have noticed a third benign form, a new onset post partum headache. On the other hand, to the best of our knowledge, there is no report on the prevalence of post partum headache among Iranian women, also, the relationship between pre-existing headaches and post partum headache was not clear.

Aims: To determine the prevalence of post partum headache and the relationship between pre-existing headaches (migraine or tension type) and the post partum headache. Also we tried to observe for the prevalence of new onset post partum headache and to determine to what extent it can be dangerous

Materials and Methods: One hundred and ninety six volunteers were interviewed and examined at the first 48 hours post partum in wards of one of the well known public and educational hospitals in Tehran. (Sample subjects came from different districts of Tehran for delivering their baby). We selected by non-probability consequence sampling method. Participants were categorized into three groups: tension, migraine and new onset post partum headache. The descriptive and inferential statistics (X2) were used. Six cases were excluded so we continued the study with 190 mothers.

Results: The prevalence of headache was 23.16%. Migraine, tension and new onset headache had a prevalence of: 6.84%, 10% and 6.32% respectively.

There was a significant relationship between post partum headache and positive history of tension headache (p value=0.007). We found no statistically significant relationship between a history of migraine headache and post partum headache. Tension type post partum headache was the most common type.

Introduction

Headache has troubled mankind from the dawn of civilization. The Egyptians like other ancients, believed the gods could cure their ailments and followed the instructions on papyrus. A clay crocodile holding grain in its mouth was firmly bound to the head of the patients by means of a strip of linen which bore the names of the gods. This may have given relief by compressing and may cool the scalp. (1) Sadock and Sadock said: Headaches are the most common neurological symptoms and one of the most common of the medical complaints. Every year about 80% of the population is estimated to suffer from at least one headache. (2) Approximately 35% to 40% of patients who seek treatment at headache centers suffer from daily or near daily headache. All those patients had headaches for more than 15 days a month or 180 days a year, which puts them in the category of chronic tension-type headache (CTH) according to the International Headache Society (IHS) criteria.(3) A Danish study in finding a rather large proportion of subjects with mild and infrequent (once a month or less) tension-type headache, and the prevalence of frequent tension-type headaches (more than once a month) seems to be more, about 20% to 30%. Most previous studies have confirmed that tension type headache is more prevalent in women than in men, and in both sexes, the prevalence seems to decline with age. Approximately half of patients with daily or almost-daily headache of the tension type also have episodes fulfilling criteria for migraine. The migrainous aura may also occur independently of pain. The headache phase lasts from about 30 minutes to a day; occasionally a headache becomes intractable and lasts 1 week or longer. (3) About 50% of persons who feel migraine, have less than two attacks per month, the median attack frequently being 1.5 per month. At least 10% of patients have weekly attacks; 5 % of the general populations have at least 18 migraine days per year and 1% at least one day per week. (4) Approximately two thirds of migraines occur in women. The prevalence of migraine in North America, ascertained through epidemiologic studies, is 12% to 17% in females and 4% to 6% in males. Before puberty, migraine prevalence in boys is similar to or higher than in girls; during and after adolescence, prevalence increases more rapidly in girls. Prevalence increases until age 40, after which it declines altogether, a decline that is steeper in women as they approach menopause. (5) The majority of female migrainers report occurrences of attack occur exclusively at the stage of the ovarian cycle and this corresponds to menstrual migraine. (4) Menstrual headache refers to all headaches that occur just before or during menstrual flow. Sixty percent of women who experience vascular (migraine) headaches report an increased incidence during menstruation; many women have headaches that occur exclusively with menses. (6) Pregnancy influences headache patterns, and migraine especially has been found to worsen or to occur for the first time during the first trimester of pregnancy. During the second and third trimesters, most headache sufferers show improvements in their headache. Hormonal changes may play a significant role in this process.

(7) After delivery there is another change in the prevalence of headaches, it has been reported to improve (28%), worsen (56%), or not to change at all (19%). (8)

To the best of our knowledge there is no study on the prevalence of post partum (post natal) headache among the Iranian population. On the contrary, there is a paucity of reports regarding this common phenomenon and its potential risk factors in the literature. Additionally, we had noticed that some mothers experience a new onset headache after delivery and called it "new onset post partum headache".

The current study was performed to determine the prevalence of post partum headache and the relationship between pre-existing headaches (migraine or tension type) and the post partum headache. Also we tried to observe for the prevalence of new onset post partum headache and to determine to what extent it can be dangerous.

Material and Methods

In a prospective cross sectional study, we interviewed and examined 196 volunteers - post partum women in postpartum wards of one of the Educational University Hospital of Iran University of Medical Sciences in Tehran (Year 2003). This hospital is a well known public and educational hospital in Tehran and samples came from different districts of Tehran for delivering their baby in this hospital. We selected by non-probability consequence sampling method. The interviews and physical examinations were done at day one, two and three post partum. We completed Valid and Reliable questionairre and checklist. Our inclusion criterion was normal vaginal delivery of a live infant of at least 38 weeks. We defined our exclusion criteria as:

1. History of eclampsia, pre-eclampsia or essential hypertension (Blood pressure higher than 140/90),
2. The presence of any sign or symptom leading the mother or her child to be considered as "high risk",
3. Severe physical or mental disorder,
4. Analgesia cases,
5. Unwillingness for attending the study,
6. Being non-Iranian.

Headache was defined as pain in the head with or without neck pain. We didn't include the patients with pure neck pain.

We categorized the participants into three groups: Migraine headache, Tension headache (with previous history) and new onset headache. All ethical points were considered. Six mothers were excluded from the study so it was continued with 190 participants. The descriptive and inferential statistics (X2) were used.

Results

The age range was between 14-44 years. The highest age group was 20-24 years (39.47%). (Table: 1) Average gravidity was 2.13±1.44. (Table: 2) Migraine and tension headache had a history of 27.89% and 17.38% among our subjects. The prevalence of postpartum headache was 23.16%. Migraine, tension and new onset headache had a prevalence of: 6.84%, 10% and 6.32% respectively. (Table 3)

There was a significant relationship between post partum headache and positive history of tension headache (p value=0.007). We found no statistically significant relationship between a history of migraine headache and post partum headache. Tension type post partum headache was the most common type. (Table: 4)

Table 1: Percentage of sample's age

Age	NO.	%
14-19	28	14.74
20-24	75	39.47
25-29	56	29.47
30-34	15	7.89
35-39	4	7.37
40-44	2	1.05
Total	190	100

Table 2: Percentage of sample's gravidity

Gravidity	NO.	%
1	86	45.26
2	50	26.32
3	25	13.16
4	15	7.89
5	5	2.63
6	5	2.63
7	4	2.11
Total	190	100

* Average gravidity was 2.13±1.44.

Table 3: Percentage of postpartum headache according to previous history of headache

History of Headache / Postpartum Headache	Migraine headache		Tension headache		Non Chronic headache		Total	
	NO.	%	NO.	%	NO.	%	NO.	%
With	13	6.84	19	10.00	12	6.31	44	23.16
Without	43	22.63	33	17.37	70	36.84	146	76.84
Total	56	29.47	52	27.37	82	43.16	190	100

Table 4: Percentage of postpartum headache (PPH) according to family history of chronic headache (FHCH)

Family history of chronic headache / Postpartum headache	With Family history of chronic headache							
	Migraine headache		Tension headache		Non chronic headache		Total	
	NO.	%	NO.	%	NO.	%	NO.	%
With postpartum headache	12	6.3	4	2.1	1	0.5	17	8.9
Without postpartum headache	21	11.1	11	5.7	8	4.2	40	21.1
Total	33	17.3	15	7.8	9	4.1	57	30

Table 4 (continued): Percentage of postpartum headache (PPH) according to family history of chronic headache (FHCH)

Family history of chronic headache	With out Family history of chronic headache								
	Migraine headache		Tension headache		Non chronic headache		Total		Total	
Postpartum headache	NO.	%	NO.	%	NO.	%	NO.	%	NO.	%
With postpartum headache	1	0.5	15	7.9	11	5.8	27	14.2	44	23.2
Without postpartum headache	22	11.6	22	11.6	62	32.6	106	55.8	146	76.8
Total	23	12.1	37	19.5	73	88.4	133	70	190	100

Discussion

In this study, the prevalence of post partum headache among Iranian women was found to be 23.1%. There was a relationship between post partum headache and tension headache but not with migraine headache. This prevalence is much less than that reported by Stein et al (9). This difference could be a result of our failure to extend the interview and physical exam to the 6th day post partum as it had reported the post partum headache to be most frequent on days 4-6th post partum; however, this finding was not reported by an independent study. (10) Stein et al have only examined 71 women, much less than our study population. (9) Adimna et al reported the prevalence of post partum headache to be 24.3% which is very close to our observation (10). Arreguie et al (1991) indicated the highest rate of migraine in 50-59 groups (38.1%), Stewart et al (1996, 1992) showed the highest rate of migraine in 18-25 age groups (22.7%), and in 30-39 age groups (28.7%). (11) In this study we found the highest group of postpartum headache in the 20-24 age groups (34.09%), which was 8.78% of the entire samples. About 27% (6.3% out of 23%) of the post partum headaches in our study were of new onset. This percentage constitutes a great fraction of the post partum headache syndromes and we proposed that this finding may be due to a rapid change in hormonal levels. Dangerous organic diagnoses such as subdural hematoma, stroke, or cerebella infarction (12, 13, 14) were made for none of the mothers.

Conclusion

In this observation we found the prevalence of post partum headache among the Iranian women to be 23.1%. There was a significant relationship between positive history of tension headache and post partum headache, but there was no relationship between post partum headache and history of migraine headache. We concluded that a positive history of tension headache can be a risk factor for developing post partum headache that seems to be a natural finding, as the delivery is a stress for the mother. In this study we had ruled out the mothers with a "high risk child" to eliminate this extra stress but it can cause a potential bias and lead to a low incidence. A diagnosis of new onset post partum headache was made for 27% of the post partum headache group; fortunately none of them were diagnosed to have malignant diseases such as cerebella infarction.

References

1. Silberstain D. S., et al, Headache in clinical practice, UK: ISIS Medical Media, Oxford, 1998. P: 6, 61, 67.
2. Sadock B., Sadock V., Kaplan and Sadock's comprehensive text book of psychiatry seventh edition, Volume three. USA: Lippincott Williams & Wilkins. 2000. P: 807-888, 416,1981,1988,1993.
3. Oleson J. Mechanisms and treatment. Tension- type headache classification, Frontiers in head ache research, Volume 3, edited by: Oleson J. Schoenen J., USA: Raven press 1993. P: 1, 3, 9-12, 11-12, 15-16.
4. Walk D. P., Melzack R., Text book of pain, Fourth edition. UK: Churchill Living tone. 1999. P: 770-774.
5. Rozental J. M., Migraine Headache, Essential of pain medicine and regional anesthesia, edited by: Benzon H. T., USA: Churchill Living tone, 1999. P: 184-185.
6. Rooyen V. M., et al, Emergent field medicine, USA: MCGRAW- Hill Medical Publishing Division. P: 416.
7. Meisler J. G., Chronic pain conditions in women. J. Women's-health, Apr. 1999.8(3), 313-320.
8. Passchier J., Kamisnsky MM., Paarlberg KM., Van Geijn HP., I, Stress during pregnancy is unrelated to Headache change in migrainures. J. of Headache. July/ August 1996. PP.189.
9. Stein G, Morton J, Marsh A, Collins W, Branch C et al. Headaches after childbirth. Acta Neurol Scand. 1984 Feb; 69(2):74-9.
10. Adinma JI, Agbai AO. Headache following parturition. J. Obstet Gynaecol. 2000 Jan; 20(1):35-8.
11. Scher A. I., et al, Migraine and headache: a meta- analytic approach. Epidemiology of pain, Edited by: Crombie I. K., Seattle: IASP Press, 1999. P: 107, 159, 168.
12. Bansal BC, Gupta RR, Prakash C. Stroke during pregnancy and puerperium in young females below the age of 40 years as a result of cerebral venous/venous sinus thrombosis. Jpn Heart J. 1980 Mar; 21(2):171-83.
13. Vaughan DJ, Stirrup CA, Robinson PN. Cranial subdural haematoma associated with dural puncture in labour. Br J Anaesth. 2000 Apr; 84(4):518-20.
14. Nicol GL, Millns JP. Cerebellar infarction as a cause of post-partum headache. Int J Obstet Anesth. 2002 Oct; 11(4):306-9.

THE EFFECT OF CONTINUING HOME NURSING SERVICES IN THE PREVENTION OF RECURRENCES AMONG SCHIZOPHRENIC PATIENTS IN TEHRAN

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ABSTRACT

Introductions: Since recovery is not considered possible in the near future in chronic illnesses, and longterm hospitalization is not economic, nursing services should continue at home. Mental illnesses such as schizophrenia are more important since they have a recurring and debilitating nature. The aim of this research is to study the effect of continuing home nursing services on the recurrence rate in schizophrenic patients.

Materials and Method: This study is semi-experimental, whereby the patients are placed into Test and Control groups, with the test group receiving home nursing services after being discharged from the hospital, and the control group did not, and instead of the usual way of the patient returning to the mental clinic to continue treatment followed, at the end, the two groups were compared for the recurrence rate.

Patients with the criteria to be included in the study were randomly placed in the two Test and Control groups. The total number of samples in the two groups were 48 schizophrenic patients. To analyze the data, absolute and relative prevalence distribution tables were used and to study the relation between the variables, the Independent T Statistical Test and Chi-Square Test at meaningful level of 95 percent were utilized. Study tool was demographic questionnaire for registration of the recurrence rate.

Results: The results showed that after 3 months follow up of the control group, 6 of the 24 patients (25%) had a recurrence, while this number was 0 in the test group (0%).

Conclusion: This result indicates the importance of home nursing services in preventing the recurrence of the illness.

Conclusion and Discussion: The prevalence of post partum headache among Iranian women was 23.1%. About 27% (6.3% out of 23%) of the post partum headaches in our study were of new onset. There was a significant relationship between positive history of tension headache and post partum headache, but there was no relationship between post partum headache and history of migraine headache.

Introduction

One of the problems and issues in today's civilized society is mental disorders. Mental illnesses have increased daily compared to the past, so that Robbins (1994) estimated the general prevalence of these disorders at 20 percent of the population. In the United States of America, seldom a family can be found that is not dealing with a mental patient (at one time of their life). One of every three adult Americans has a diagnosis of mental disorders, and in general at any given time, 20 percent suffer from mental illnesses (1). The above statistics indicate the need for study in this field. All mental illnesses such as anxiety disorders, compulsive disorder, depressions, personality disorders and especially psychosis and among them schizophrenia, have a chronic nature and need longterm care and rehabilitation. Mental illnesses, especially psychosis and schizophrenia have three important characteristics as stated below:

1. Chronic characteristic
2. Recurrent characteristic
3. Debilitating characteristic (in physical, mental, social, career, and educational dimensions).

All three above characteristics result in requiring more attention to prevent the third characteristic or rehabilitation of these patients. When continuing treatment and rehabilitation is mentioned, the role of nurses becomes very important. Chronic illnesses require long term care in the form of outpatient, hospitalization (in-patient) and/ or states in between the two. Due to the course of this illness,

most of these patients are beset with economic poverty and homelessness, so that they live on the streets, in parks and public thoroughfares. Schizophrenia, besides afflicting the person itself, affects the patient 's family and even disrupts the family structure, performance and duties, and in many instances results in separation and divorce. The normal recurrence rate of mental illnesses is 67 percent, so that these patients have a record of repeated hospitalizations in their files. The usual method of treatment for schizophrenia in Iran, in most instances, comprises hospitalization, medication and shock therapy, and some forms of psychotherapy. The patient is discharged after a relative recovery. Schizophrenic patients usually stop taking their medication sometime after being discharged and consequently the illness recurs and results in repeat hospitalization.

It seems that these recurrences are a result of the patient being released and non-continuation of care after discharge, such as home nursing care.

Stuart and Laraia (2001) write; in recent years, a specific need is felt to have mental health services at home. The increase in health care costs on the one hand, and the changing attitudes for a community based view of health care on the other, have an important role in generating and cultivating this philosophy (2). Lego (1996) says: mental care service at home is a strategy beyond treating mental patients. He quotes Buckwalter in this regard and says: home mental care is designed to facilitate transfer (of the patient) from the hospital

the society in order to increase the person's performance level in society and decrease the economic load and national costs (3).

Homan (1996) writes that a wide spectrum of mental health staff deliver services at home but nurses constitute the basic column of the system delivering these services and have the main role in the coordination of health services at home. Delivering nursing care services at home, at present is being performed in many countries, considering technological progress, ever increasing population rates and rising costs of treatment and rehabilitation, it may be considered a suitable solution to help those patients who require special care. Nurses may deliver care services at home because of the overall knowledge they have of the patient problems and issues, and play an important role in expanding care, treatment, educational and rehabilitation programs, while supporting the patient and his family (4).

Today, the rising hospitalization costs, separation from family, and hospital originated infections result in the ever-increasing popularity of home health care. On the other hand, in chronic illnesses, since recovery is not conceivable in the near future, continuation of care at home is becoming noteworthy. Mental illnesses such as schizophrenia are not an exception. Especially schizophrenia as due to its recurring and debilitating nature, it is even more important. Since as mentioned before, the recurrence rate after being discharged from the hospital and without follow up is 67 percent, the importance of follow up of patients in the form of continuous care at home, becomes evident in the follow up and rehabilitation of chronic mental patients especially schizophrenics.

Thus, by designing research, the effect of home care on preventing recurrences among chronic schizophrenic patients in Tehran was examined.

Materials and Method

This research is of the semi-experimental kind implemented with the aim of studying the effect of home care on recurrence rate in chronic schizophrenic patients, and the theory for it was reviewed: Continuation of care at home after discharge from hospital, decreases the recurrence rate of chronic schizophrenic illness.

The study community included schizophrenic patients applying at the Razi Educational Treatment Center, in south of Tehran, who had families; their age was between 20 to 45 and they did not suffer from mental retardation.

Those patients who had the criteria for taking part in the research (having a family, age 20-45 and lack of mental retardation) were randomly placed in two groups, Test and Control. The total study samples in the two groups were 56 schizophrenic patients, out of which 8 were taken out of the study because of incorrect initial diagnosis and family disapproval to continue the study, and in total 48 patients were studied, out of which 24 were randomly placed in the test group and 24 in the witness group.

For the Test group after being discharged from the hospital, home nursing services included patient evaluation, educating the patient and his family, environmental intervention, review of medications and their side effects, family consultation, reference to psychiatrists and other care services (once every 15 days for 3 months), and for the control group these interventions were not implemented and the customary way of setting an appointment for the patient with the mental clinic for continuation of treatment was implemented, and at the end of 3 months the two groups were compared for the recurrence rate. Both groups of patients were followed up after another 3 months and at the end of six months were compared again for recurrence rate.

Research tools included demographic questionnaire, and recording recurrence cases. Demographic questionnaire was reviewed by ten expert professors and its contents approved. And in this research, recurrence means re-hospitalization. So that those cases that were re-hospitalized, were recorded as recurrent cases.

To analyze the data, the absolute and relative prevalence distribution tables were used and to review the relationship between the variables, independent T test, Paired T test and Chi-Square at a meaningful level of 95 percent were utilized.

Results

The most important results of the study were as follows:

1. The average age of the patients in two groups was 29 years. T-test did not show a meaningful statistical relationship between the mean ages of the patients in the two groups, showing that the two groups are similar (match) in this regard (P= 0.961). (Table 1)

2. Regarding marriage status, 22 (91.4%) of the patients of the test group were single and two (8.6%) married. The rate of married patients in the witness group was the same. Chi-Square test did not show a meaningful statistical difference between the two groups, and in this respect the two groups are similar. (P= 1.000) (Table 2)

3. Regarding previous hospitalization records, all 24 patients in the test group had a previous record of hospitalization (100%). In the witness group 22 persons (91.7%) had previously been hospitalized and 2 had not. Chi-Square Test between the two groups did not show a meaningful difference in this regard. (P= 0.916). (Table 3)

4. Research data shows that within 3 months after discharge, no recurrence occurred in the test group but the recurrence rate in the witness group was 25 percent (6 out of 24) and within six months after discharge, recurrence rate in the test group was 21 percent (5 out of 24) and in the witness group 46 percent (11 out of 24), and the Chi-Square test with more than 99 percent accuracy considers this difference meaningful (P= 0.002) (Table 4).

Discussion & Conclusion

As the study data showed, the research theory was proved and home nursing care can prevent recurrence of the illness, therefore follow up of the schizophrenic patient after discharge and continuation of care at home is a key point in reducing the recurrence

of the illness. The results of this study correspond to the results of Chan, Mackenzie and Tinfung (2000), who in a semi-experimental research of the before & after type, reviewed the mental situation and performance of 62 patients receiving home nursing services, and showed that the mental status and behavioral and social performance of the patients improved compared to before the intervention and was meaningful statistically, and also corresponds to the results of research by Kiviri (1981), Zander (1988), Davies (1992), Mac & Go (1996) and Jury (1998), that showed home nursing care affects the recovery of mental status and behavioral and social performance of schizophrenic patients (9).

Home nursing care services may be implemented in various forms; the most important of which are reviewed below:

Hospital Based Home Care Services

In this method, a unit is organized in the hospital under supervision of the nursing unit. Patient File, after discharge is sent to this unit and nurses establish services for the patient, based on the hospital routine and or according to the recommendations prescribed in the discharge summary form.

Community Based Home Care Services

In this method, the patient is referred or assigned to private institutions such as Home Consulting & Nursing Services and other centers performing home nursing services including clinics, health centers, health stations, health homes, delivering home nursing care (similar to a physically ill person being referred after discharge, to the related institutions for physiotherapy).

The general result being that through establishment of these kinds of services, patients and their families may be greatly helped in bearing lower expenses, so that by giving home nursing care services and timely identification of the recurrence signs in the patient, control of continuation of the medication, medication side effects, educating the patient and their family at home, that ultimately result in on-time intervention and referral of the patient to the psychiatrist on-time in order to have the medication or its dosage changed, repeat hospitalization is prevented, expenses resulting from hospitalization reduced and the patient's family relieved from paying the expenses for at least one month of hospitalization due to recurrence of the illness. And also because of the country's shortage of beds in mental hospitals and since most hospitalizations are repeat ones, by rendering home nursing care and preventing recurrence, the problem of bed shortage may partly be solved.

Table 1: Prevalence Distribution & Median Age Comparison of Study Samples in Test & Control Groups

Age Variable	Number	Average	T-value	DF	SIG
Test	24	29.88			
Control	24	29.96	-0.050	46	0.961

Table 2: Prevalence Distribution & Marriage Status Comparison of Study Samples in Test & Control Groups

Marriage Status	Single	Married	Total
Group	No./ Percentage	No./ Percentage	No./ Percentage
Test	22 (91.7%)	2 (8.3%)	24 (100%)
Control	22 (91.7%)	2 (8.3%)	24 (100%)
Total	44 (91.7%)	4 (8.3%)	48 (100%)

(P= 1.000)

Table 3: Prevalence Distribution & Relative Rate of Previous Hospitalization Records in Test & Control Groups

Previous Record of Hospitalization	Yes	No	Total
Test Group	24 (100%)	0 (0%)	24 (100%)
Control Group	22 (91.7%)	2 (8.3%)	24 (100%)
Total	46 (95.8%)	2 (4.2%)	48 (100%)

(P=0.916)

Table 4: Prevalence Distribution & Recurrence Rate of Illness in the Two Study Groups

Recurrence Rate	Recurrence No. & Rate After 3 Months	Recurrence No. & Rate After 6 Months
Test Group (24 Persons)	0 (0%)	5 (25%)
Control Group (24 Persons)	6 (25%)	11 (46%)
Total (48 Persons)	6 (25%)	16 (33.3%)

(P= 0.002)

Acknowledgement

References

1. *Suggested draft of the State Program for Organizing Mental Patients, Tehran, Secretariat Office of the State Headquarters for Organization of Mental Patients, State Welfare Organization and University of Social Welfare & Rehabilitation Sciences, September-October 1999, p 10.*
2. *Stuart G. & Laraia M., Principles & Practices of Psychiatric Nursing.*
3. *7th edition, Mosby Co. 2001. P 843-68.*
4. *Lego, S. Psychiatric Nursing: A Comprehensive Approach. J. B. Lippincott Co. 1996.*
5. *Homan, et al. Rehabilitation Nursing, 2nd Edition, Mosby Co. 1996, p 145-78.*
6. *Kaplan H. Sadok B. Comprehensive Text Book of Psychiatry. 6th edition. William & Wilkins Co. 1995, p 130-133.*
7. *Barati Sadeh, Farid, Review of Positive & Negative Signs of Schizophrenia in Schizophrenic Patients and Their Relations, Tehran, Allameh Tabatabaie University, 1998, (Thesis).*
8. *Farhadi, Yadollah & Colleagues, Review of the Effect of Clozapin on Schizophrenic Patients' Recovery, Tehran, University of Social Welfare & Rehabilitation Sciences, 1997.*
9. *Fallahi Khoshknab, Masoud, Effect of The Application of Multi-Dimensional Rehabilitation Model on Recurrence Rate of Chronic Schizophrenic Patients, Scientific-Research Journal of Shahid Sadooghi University of Yazd, Fall 2002.*
10. *Chan S, Mackenzie A, Tinfung D. an Evaluation of the Implementation of Case Management in Community Psychiatric Nursing Services. Journal of Advance Nursing. 2000; 3(1): 146-54*