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This is the fourth issue this year and although the journal is receiving more papers than before, the field of nursing is still lagging behind in the region. Dr Maryam Noori Tajer, looked at controlling costs of medical equipment in Hospitals of IUMSHS. The author stressed that a large number of medical equipment in hospitals becomes technically defective and therefore runs out of order every year, and as a result, a large proportion of hospital expenditure is allocated to supplying and repairing this equipment, and as such, great scientific damage and economic losses are imposed on the health care system of Iran. A second paper from Tehran looked at the application of recreational and leisure activities for Schizophrenic patients' self care. The authors in a pre/post test study recruited all chronic schizophrenic patients who could leave the psychiatric section; then patient's psychiatrist and family filled consent forms for participating in group recreational activities. The results show that group recreational activities as a rehabilitation intervention in psychiatric participants could impact on self- care skills.

A paper from Bangladesh looked at the awareness of rural men regarding safe motherhood. Using the information from 200 ever married males of Horian Village of Rajshahi district we found that rural men are mostly less educated and their occupation mainly agricultural based and small business. Some important indicators found related to safe motherhood were likely to get medical checkup or vaccination, rest for pregnant women, regular checkups for their wives, were recorded as positive results for safe motherhood. On the other hand some negative result found from this study were respondents' educational qualification, place of delivery, types of treatment process, age of marriage, duration until first baby.

A second paper from Bangladesh looked at the impact of education, both formal and informal (via media, GOs and NGOs a), which is believed to affect the use of contraceptives and, hence, fertility levels. The authors noted the effects of media and GOs/NGOs varied according to the urban-rural residences. While television was found to have a significant effect on fertility and contraceptive use between both the urban and rural women, the effect of radio and GOs/NGOs was insignificant among the rural women. However, exposure to mass media and education (except secondary) appears to have a weak significant effects on fertility and strong on contraceptive use.

Eghlima M and Dadkhah A, looked at the social factors related to returning run away girls to rehabilitation centers. The authors stressed that the girls suffering from abuse at home and running away from intolerable situations is neither new in Iran nor confined to particular sections of Iranian society. Run-away girls from their family and their following tendency to damage and social deviation, is one of the social pathologies that may take place in each society. The authors carried out the study on 300 participants in "Omidvar" and "Horriat" centers in Tehran and Mashhad. The variables were compared in two groups: one group with one returning and the other with several returning. Research outcome reveals that demographic status in family situation, pathological condition and psychological status of clients in the two groups were significantly different. A questionnaire, Raven test and MMPI test, and statistical T test and X^2 test were used as research tools.

RETURNING RUNAWAY GIRLS TO REHABILITATION CENTERS: FACTORS RELATED TO SOCIAL PROBLEMS

ABSTRACT

Girls suffering from abuse at home and running away from intolerable situations is neither new in Iran nor confined to particular sections of Iranian society. Run-away girls and their tendency to damage and social deviation, is one of the social pathologies that take place in each society.

This research looks at the main effective factors of returning women and girls with social problems to rehabilitation centers. This research was carried out on 300 participants in "Omidvar" and "Horriat" centers in Tehran and Mashhad. The variables were compared in two groups: one group with one girl returning and the other with several returning. Research outcome reveals that demographic status of family situation, pathological condition and psychological status of clients in the two groups were significantly different. A questionnaire, Raven test and MMPI test, and statistical T test and X^2 test were used as research tools.

Key Words: Women, Girls, Rehabilitation Center, Social Problems.

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Introduction

Nowadays, with urban and industrial living expansion, and irregular progression of cities, immigration from rural areas to large cities, boundary extension, increasing social and economical problems and the great number of young people, cause rising quality and quantity of social pathologies and pave the r way for people being affected by different social problems, especially for the young generation. One of the damaging problems that threaten human society is prostitution[1]. Studies on its causes reveal that poverty, unemployment, war, variability, deception, love failing, sexual problems and familial elements, are the important factors that everyday add to prostitution of new involved people[2]. One factor which we can mention is a new generation of girls recognize that they have rights and are no longer prepared to put up with domestic abuse so by running away from home, these girls both register a protest and seek to change their situation[3].

According to the United Nation's estimate, in each year about 40 million people are bought and sold in the world(4). It has been said that prostitution and trafficking of women (smuggling) to some countries such as Indonesia, Thailand, Philippine and Malaysia from other places is a great source of economic income and parts of national gross production[5,6]. To analyze prostitution and the tendency of this group of people to commit crimes that are against norms and society, we should consider the complexity and extended dimension of this subject[7,8,9]. Some effective factors that cause delinquency are individual motivations[10], psychological[11], familial[12], environmental and biological factors[13,14]. Regarding prevalence of social pathologies and the tendency of girls and women to social deviations indicate the necessity of social and rehabilitation services[15,16,17]. To provide such services, a rehabilitation program in most of Iranian institutions and centers of social welfare is being implemented[18,19].

As statistical surveys show, about 60% of clients who pass their rehabilitation programs during rehabilitation periods, due to committing crime and disability in the management of their own lives returne to these centers. The main goal of this research is to study the effective factors of returning women and girls with social problems, to rehabilitation centers[20,21,22].

Research Hypothesis:

1. There is a significant relationship between clients returning and their demographic status.
2. There is a significant relationship between clients returning and their family situation.
3. There is a significant relationship between clients returning and their types of deviation.
4. There is a significant relationship between clients returning and their first run-away age.
5. There is a significant relationship between clients returning and their cause for running away.

Research Methods

The statistical scope consists of all damaged women and girls who have returned to Omidvar and Horriat quarantine and reception staff centers in Tehran and Mashhad.

The research sample is composed of 300 clients with 150 of them having been rehabilitated only once while the others have returned again to rehabilitation centers several times. The entire sample has been selected by a simple randomized method from Omidvar and Horriat quarantine and reception staff centers. The tools in this research are MMPI test, Raven test, a questionnaire, by which the run-aways familial and social factors were assessed. This questionnaire contains 27 valid and reliable questions. In data analysis, descriptive and inferential statistic methods have been used. In inferential statistics, T test and X^2 tests have been used.

Data Analysis:

To study the effective factors of returning women and girls with social problems to rehabilitation centers, demographic status, family situation, kinds of social deviations, the first run-away age and run-away cause were considered.

In studying demographic status, client's age is an effective factor; juvenile people are more likely to have returns. 36% of rehabilitation centers' clients were in the 18 to 20 year age groups.

Generally, 56% of returned clients of rehabilitation centers are in the juvenile age group and 33% of them have returned to these centers. 36% of clients who had primary literacy or were illiterate showed the highest level of returning. 72% of clients were single, 20% were divorced women and only 7% were married. The single clients have returned more. Most causes due to divorce were due to their husband's addiction. These women had higher levels of returning. 19% of clients to these centers were from western areas of the country, 42% were from Tehran province, 9% were from Northern provinces, 9% were from central provinces and 22% were from eastern provinces of the country.

As the above data shows, most of the clients belong to Khorasan and Tehran provinces. In a statistical survey, 35% of first time clients and 50% of returning clients were living in families with more than 6 members. 60% of clients' fathers and 80% of their mothers had primary literacy or were illiterate. Clients whose fathers had low education had higher rates of returning. A survey on the fathers' occupational status revealed that 17% of them were unemployed, 29% were workers, 18% were employees, 15% had free occupations and 14% were drivers. 52% of clients with unemployed fathers had returned again. 45% of clients had low or very low economical situations and 80% of these clients had returned again. 30% of clients were faced with parents' separation; parents of 33% of clients were dead and 18% of the sampling group had addicted parents. Returning again clients who were faced with parents' separation, parents' death and addiction, returned more than the others. Parents of 10% of clients were prisoners before and in these clients again returning is higher than the others. 26% of subjects had addiction history of which 24% have returned again. Primarily, they were addicted to heroin, narcotics and opium, in turn.

Of 34% of clients who had an imprisonment history 27% of them had returned again. Imprisonment history was an effective factor in tendency of social deviations. 56% of clients were involved in sexual deviations of which 36% had returned again. 80% of the considered sample had attempted suicide and 6% of them had returned again. In studying causes of clients' running away, factors such as maladjustment with parents, insecurity in family, economically inappropriate conditions, disintegration of family, tendency to deviations, disorganized marriage, seduction, addiction and mental problems were effective. The most effective factors were: 19/5% maladjustment with parents, 16% seduction, 15% economically inappropriate conditions, 12/5% disintegration of family. In clients' returning, the most important factors were: insecurity in their family, economically inappropriate conditions and disintegrated family, of 25% of clients who had been harmed by their parents 21% of them had returned again. 36% of harmed clients had been sexually abused, 33% of them had physical punishments, 6% of them were forced to beg, 13% of them forced to buy and sell narcotic drugs, and 17% of them had been abandoned.

The first 'run-away age' is one of the remarkable factors in this research. The first run-away age in clients were: 6% in 12 to 14 years old age group, 21% in 14 to 16 years old age group, 26% in 16 to 18 years old age group, 16% in 18 to 20 years old age group, 13% in 20 to 22 years old age group, 12% in 22 to 24 years old age group.

The highest run-away age had occurred in 16 to 18 years old age group in juvenile ages and again juvenile returning was related to individuals who had the first run-away age in the 14 to 18 age group and the 16 to 18 years old age group.

In the survey on the effective psychological factors, considered designed variables in MMPI test and Raven test. Clients' intelligence quotient (IQ) in the Raven test, were as follows: Clients' IQ with one and several returning were 94 and 78. These IQs revealed that clients with one returning were of normal intelligence. But with several returns were borderline in mental scale. In MMPI test returned clients in DD, DT, S and HS scales have gained a 70 score. Their score has a a meaningful difference from one clients' returning. Frequency distribution and Percentage of A and B groups based on run-away causes, ages, family causes, kind of harm and Raven test are shown in Tables 1, 2, 3, 4 and 5.

Discussion and Conclusion

The results revealed that clients in juvenile age have further vulnerability and to improve their functioning, rehabilitation programs should have more equipment, facilities and specialists. 37% of clients had low

literacy (if any) and 63% were in secondary school or high school. So, planning for these two groups is different because literate or illiterate clients have lower comprehension, intelligence and abstract thinking and for education and occupation learning requires proper programs.

The other effective factor of clients returning to rehabilitation centers is singleness. Also, divorced clients had more returnings[23,24]. Most divorced clients separated from their husbands because of addiction, lack of house and work[25,26].

More clients were from Khorasan and Tehran provinces and the most returning clients' were from the western area. The effective factors of clients' returning in Tehran were: urban absorption, lower family affiliation, contrast between freedom and promiscuity, immigration and boundary. In the eastern area influencing factors are various cultural transmission. The influencing factors of clients' returning in the western area are nation and tribe fanaticism and physical insecurity in family atmosphere. High family members are another effective item of clients returning to rehabilitation centers. This problem influences the economical situation of the family and attention of family members. Regarding to statistics about academic condition of clients' parents concluded that most of them have literate or illiterate parents. This issue led to cultural poverty. So, these families required cultural and educational programs.

Data on fathers' occupation revealed that most damaged clients have unemployed or falsely occupied fathers. Therefore, this had a significant effect on clients returning. Often, unemployed fathers were addicted and lead their children to beg, steal, distribute drugs and illicit relationsto earn money. The economical poverty is another factor that influences vulnerability. The subjects living in low level educational conditions had a high rate of returning. So, regarding the economical condition of the family, in most cases, client's returning to families is not advisable at all.

Familial distinction and parents separation is the most effective element in clients' returning. Clients who had grown up in confused and distressed families had high levels of damage. Parents' death also causes clients' damage and adolescence, faced with parents' death, had further rates of returning. Parents' death leads to economical poverty, affective vacuum, and disintegration of family, remarriage of fathers or mothers, without guidance and relative's interference. Addicted parents are another effective factor in adolescent tendency to social pathologies and deviations. Addiction of family guidance is a dynamic problem that affects another family life dimension. Parent's addiction leads to poverty, and delinquent individuals, insecurity in family, moral changes of addicted person, society negative attitudes to individual sand their family and adolescent tendency to delinquent friends and offenders and deviated people that parents have relations with. Clients' addiction is a factor in further tendency to social pathologies and deviations[27,28,29]. In order to provide essential expenses to buy drugs, they commit crimes, use septic syringes and relate with persons which raises risk of AIDS. Clients with an imprisonment history are faced with a higher risk of damage and most of them returned to rehabilitation centers. Prison environments caused more social pathologies and deviations.

Returning of clients with sexual deviations was more than others. It can show that the higher the damage, the more clients returning.

To be harmed by parents is another element that worsens clients' damaged condition[30,31]. These harms are physical punishment, with clients forced to buy and sell narcotic drugs, ignorance and sexual abuse.

Psychological factors also cause clients with broader boarder intelligence levels to return and in MMPI test variables they gained high scores. This information shows that psychotherapy programs, individual counseling and medication are affective and required. Rehabilitation of these clients needs a relaxing atmosphere that unfortunately is mostly ignored.

Recommendation:

1. Providing rehabilitation designs based on research results.
2. Classifying clients and separating them by age.
3. Avoiding clients' returning to families with moral problems and deviations.
4. Providing protective and economical services for clients who are living with their families.
5. Separating clients based on various levels of their pathological condition.
6. Separating of clients with psychological disorders from others.
7. Establishing specialized rehabilitation centers in western areas of the country.
8. Special counseling with clients' families to reduce their problems.

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Table 1: Frequency distribution and Percentage of A and B groups based on run-away causes

Run-away causes	A Frequency	B Frequency	Quantity Frequency	A Frequency Percentage	B Frequency Percentage	Quantity Frequency Percentage
Maladjustment with Parents	22	35	57	7/5%	12%	19/5%
Insecurity in Family	25	13	38	8%	5%	13%
Economical Inappropriate Situation	22	8	30	7%	3%	15%
Disintegrated Family	27	10	37	9%	3/5%	12/5%
Tendency to deviations	17	6	23	5%	2%	7%
Disorganized Marriage	15	25	35	3/42%	9%	12/5%
Seduction	14	33	47	5%	11%	16%
Addict	9	1	10	3%	0.3%	3/3%
Mental Problem	4	11	15	1%	4%	5%
Sum	150	142	292	49%	49%	100%

A: Clients with several returning
B: First time referring clients

Table 2: Frequency distribution and Percentage of A and B groups based on individual age

Age Distribution	A Frequency	B Frequency	Quantity Frequency	A Frequency Percentage	B Frequency Percentage	Quantity Frequency Percentage
12-14	19	2	11	6%	66%	6/5%
14-16	45	18	63	15%	6%	21%
16-18	45	32	77	15%	11%	26%
18-20	25	27	47	7%	9%	16%
20-22	11	26	37	4%	9%	13%
22-24	5	29	34	2%	10%	12%
24-26	5	6	11	2%	2%	4%
26	-	10	10	0 %	3 %	3%
Sum	150	150	300	50%	9%	100%

A: Clients with several returning
B: First time referring clients

Table 3: Frequency distribution and Percentage of A and B groups to be harmed by their family

To be harmed by Family	A Frequency	B Frequency	Quantity Frequency	A Frequency Percentage	B Frequency Percentage	Quantity Frequency Percentage
Yes	62	13	75	21%	4%	25%
No	88	137	225	29%	46%	75%
Sum	150	150	300	50%	50%	100%

A: Clients with several returning
B: First time referring clients

Table 4: Frequency distribution and Percentage of A and B groups based on kinds of harm

Distribution category	A Frequency	B Frequency	Quantity Frequency	A Frequency Percentage	B Frequency Percentage	Quantity Frequency Percentage
Abuse	20	2	27	33%	3%	36%
Physical Punishment	20	5	25	27%	7%	33%
Forced to Beg	4	1	5	5%	2%	6%
Forced to Buy and Sell Drugs	8	2	10	12%	3%	13%
Released	5	5	5	8%	0%	6/6%

Sum	62	10	75	85%	15%	100%

A: Clients with several returning
B: First time referring clients

Table 5: A comparison between intelligence quotient of A and B groups by Raven's test

Statistical Variables	A Group	B Group
Numbers	56	56
Average	78	94
Standard Deviation	13/64	11/92

A: Clients with several returning
B: First time referring clients

AWARENESS OF RURAL MEN FOR SAFE MOTHERHOOD: A STUDY ON HORIAN VILLAGE IN RAJSHAHI DISTRICT OF BANGLADESH

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ABSTRACT

The aim of this paper is to investigate the awareness of rural men regarding safe motherhood. Using the information from 200 ever married males of Horian Village of Rajshahi district we found that the average age of respondents' wives at first marriage was <18 years, with the average duration time of first baby was found to be <2 and the majority of the women had their first delivery under age 20. It was found that rural men are mostly less educated and their occupation mainly agricultural based and small business. Some important indicators found that were related to safe motherhood were likely to have medical checkup or vaccination, rest of pregnant women, and regular checkup for their wives, were recorded as positive results for safe motherhood. On the other hand some negative results found from this study were respondents' educational qualification, place of delivery, types of treatment process, age of marriage, duration time to first baby.

Key words: safe motherhood. Male population, awareness, pregnancy checkup, Rajshahi District.

Introduction

When the safe motherhood initiative was launched in 1987, death from the complications of pregnancy and childbirth was a little-known, seriously neglected problem. Ten years later, preventing these deaths is an international priority, and many countries have made significant progress in expanding and improving maternal health services. The global initiative has become a unique partnership of governments, donors, technical agencies, non-government organizations and women's health advocates in more than 100 countries. These partners are now working to protect the health and lives of women, especially during pregnancy and childbirth.

In Bangladesh, maternal mortality represents the end point in a lifetime experience of gender discrimination, neglect and deprivation. Its high rate also represents the failure of the health system to effectively provide services and care for women. The near absence of skills and facilities to cope with obstetric emergencies is matched by a virtual absence of strategic responses and ability of the health system to respond to the dimension of violence. Improvement of Bangladeshi women's health is not just a social and moral necessity; it is also an economic imperative. The government of Bangladesh thus envisions a fulfillment of the right to safe motherhood by all women in the country with a mission to reduce maternal mortality and morbidity and also to enhance the self-esteem and status of women.

Until now, maternal-death-rate is a matter of concern in Bangladesh. Around 20 thousand mothers have died due to the complexity of pregnancy and delivery in the country per year. Maternal death rate is four per thousand in the country. The causes of maternal death are acute bleeding after delivery (26 %), problem of high blood pressure (16 %), dangerous miscarriage (21 %), contagion/infection after child birth (11 %), obstructed childbirth (8 %), as well as poverty, illiteracy, superstition, social discrimination, malnutrition, lack of proper treatment etc. (The Daily Ittefaq, May 28, 2006).

Only 12 % of mothers go to the hospitals and health centres in Bangladesh. The number of skilled midwives is only 10 percent in the country. As a result many pregnant mothers, from various complexities during their childbirth suffer vesico-vaginal fistula (VVF).

to build awareness. So, after being aware of safe motherhood village men must be involved in every step of safe motherhood.

Importance of this study

In Bangladesh, three women die every hour of complications due to pregnancy and childbirth. These women die a silent but tragic death. This translates into one of the highest maternal mortality rates in the world. It is five times higher than Sri Lanka and Vietnam and about ten times higher than Malaysia. Since maternal mortality rate is recognized as a global indicator of the status of women in a country, it reflects clearly the status of Bangladeshi women. This study is meant to contribute to understanding rural men's awareness of Bangladesh by examining the situation prevailing in one particular area Rajshahi, Bangladesh. The questionnaire and the result that are in the survey are barely adequate for researchers regarding awareness of the rural men about safe motherhood. This study has also a great importance to find out the age of marriage, age of first child birth and place of child delivery as a determinant of safe motherhood. To see the effects of different socio-economic and demographic

determinate of safe motherhood this study may play a vital role on national population policy. This study is mainly to examine rural men's awareness to improve the safety of motherhood.

Data Sources and Methods

These data were collected from a rural area (Horian Village) of Rajshahi district, Bangladesh. From this area we have collected information of 200 ever-married males by interview method. All the information is taken by purposive sampling method and the methodology applied for this study was percentage distribution, mean, median, standard deviation and graphical representation.

Results

In Bangladesh, for women in reproductive age, getting proper maternal health care services was found to be beyond their reach, which is mainly due to their poverty, illiteracy, general backwardness and adherence to superstitious beliefs, lack of awareness about safe motherhood and inadequate facilities. Most of the rural men in this study area are not aware of their wives reproductive health as well as safe motherhood. Some basic characteristics of the study population have been incorporated in Table 1, which are very much related indicators of safe motherhood.

In this study respondents means rural men who are married and most of them having children. So, their age should be 18 years or more.

Table 1 shows the level of age group of <25 years, 25-30 years, 30-35 years, 35-40 years and 40+ years are 8.6%, 32.9%, 15.7%, 24.3% and 18.6% respectively. It should be mentioned that the average age of respondents is 25-30 years (32.9%).

Education is the factor, which modifies the life, attitude, outlook and the status of a person as well as reproductive behavior. The education of rural men is important to ensure safe motherhood.

Table 2 has revealed that a number of village men (32.9%) acquired secondary level schooling and 24.3% to primary schooling. About 2.9% are illiterate and 18.6% can only sign their name. The rest 15.7% and 5.7% are higher secondary and higher education respectively. It is observed that the rate of total secondary and primary level education is the highest.

Bangladesh has among the lowest indicators of use of maternal health care services in the world. Around 67% of all pregnant women had no antenatal check-up throughout their whole pregnancy, (ICDDR, B, 2003).

The study has revealed that 94.3% of village men agreed that their wives should have a checkup or vaccination during their pregnancy period.

Place of birth is very important to ensure safe motherhood. In 2003 ICDDR, B, stated that around 92% of deliveries occur at home and approximately 87% of deliveries occur without the presence of a skilled attendant (ICDDR, B, 2003).

Table 4 shows about 70.0% of deliveries occur at home, 27.1% at Government, hospital and the remaining of 2.9% deliveries occur at private hospitals.

Treatment process is one of the most important indicators to ensure safe motherhood.

The study has revealed that most of the respondent's wives have taken treatment from village doctors (50.0%), about 24.3% by skilled doctors from government hospitals, 22.9% doctors from family planning centers and 2.9% homeopathy doctors, during their pregnancy period.

Family is the basic social unit and deals with the care of pregnant women. The families have important socio-economic functions and provide the basic emotional, financial and economic support necessary for proper care of mother's health. The following table shows the distribution of monthly income of the respondent's family.

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Table 6 presented above has revealed that the monthly income of 35.7% respondent's family is Tk. 2000-3000 and only 12.9% is above Tk. 5000. About 24.3% family's monthly income is Tk. <2000 and 10.0% is Tk. 3000-4000. About 17.1% family's monthly income is Tk. 4000-5000. It can be said that the monthly income of the majority of respondent's families is not satisfactory for care of reproductive health.

By the constitutional law of Bangladesh the minimum age at first marriage for women is 18 years and on average first age at marriage is found 20.44 years and 21.4 years in urban and rural areas, respectively (SVRS, 2002).

Table 7 stated that in the study area early marriage of respondent's wife is most frequent (77.7%) and women get married before their early eighteens. This clearly depicts that the female populations in that study area and their guardians as well as rural men are not aware of the extent of various physical and mental complications for early marriage.

Age at first birth is also a measure of proper reproductive behavior. In Bangladesh average age at first birth is 19 (BDHS, 2001). But, early pregnancy and early motherhood is commonly observed in our study area.

The study has revealed that more than 75% of married women gavehad their first birth before reaching 20 years of age that is most of the mothers are in high risk with respect to their proper physical growth of being pregnant.

Discussion

The findings indicate that the largest percentage of students in this study had a "Weak" knowledge regarding ecstasy use. Mansourian, Pashaaee and Shojaayee-Rad (2005) showed that among the students of Tehran University of Medical Sciences who were resident in the student halls 37.4%, 34%, and 28.3% had "High", "Average" and "Low" knowledge levels regarding ecstasy tablets[9], which is in contrast to the findings of the current study.

However, it should be pointed out that advent of ecstasy is a new phenomenon in Iran which has only recently come to the fore, and that the respondents in the current study are young female pupils who are inevitably less familiar with such substances than university students and perhaps even less well-informed than other sections of society. For instance only 25 pupils (6.3% of the sample) were fully knowledgeable about side effects of ecstasy use. This clearly indicates the importance of educational programmes for this young group who are evidently at risk.

Findings also indicate that the attitude of the largest percentage of female pupils (56%) towards using ecstasy is "negative". Mausavi and Tabatabaee (2006) also showed that 25.5% of men and 39.9% of women have a "positive" attitude, with 46.6% of men and 39.9% of women have an "average" attitude, and 25.9% of men and 20.3% of women have a "negative" attitude towards prevention of ecstasy use[10]. It could be argued that perhaps presenting this substance as a harmful and dangerous drug has led to a "negative" attitude towards using ecstasy among this group and the study's respondents. This is a significant finding and even though only a small percentage of participants in the current study have a "positive" attitude in this respect, nevertheless there is a need for putting wide-ranging and specific plans into action in order to prevent them from having leanings towards this drug. Bagheri and Bahrami (2003) reported that if people were aware of, and believed the undesirable effects of drug use on mental and physical health, their career prospects, and the impact upon their families, it would have been less likely for them to resort to drug taking[11].

Findings of the current study indicate that there is a positive relationship between Knowledge and Attitude of the female pupils regarding ecstasy use. Jazayeri et al quoting Rahimi-Movaghar (2003) reported that one of the preventative methods is providing knowledge regarding the dangers and harmful effects of illicit drugs bringing about a change in their attitude from "Positive" to "Negative" towards addiction, addicts and drugs[12].

Conclusion & Recommendations

The study is related to the awareness of rural men regarding safe motherhood using primary data collected by purposive sampling method from Horian village in Rajshahi district of Bangladesh. In this study we found that the average age of respondents wife at first marriage was <18 years, average duration time of first baby was found to be <2 and the majority of the women gave their first child delivery under age 20; Which are very important considerations regarding safe motherhood.

It was found that rural men are mostly less educated and their occupation mainly agricultural based and small business. Some important indicators were found which very much related to safe motherhood like checkup or vaccination, rest of pregnancy women, regular checkup to their wives were recorded positive result for safe motherhood. On the other hand some negative result found from this study like respondents educational qualification, place of delivery, types of treatment process, age of marriage, duration time of first baby, these are very much important indicators to ensure safe motherhood.

Based on the discussion some recommendations have been suggested that would help the government and NGO's to take initiatives to promote maternal and child health care facilities.

- The results of this study indicate that there is a strong need to focus strategic measures upon the increase of health facilities, such as the THC, health clinic and FWC. Emphasis should be given to the IEC activities of the national health programme that communities, particularly the poor and uneducated women become aware of the need for regular antenatal care check up and safe deliveries by competent health personnel. Trained TBAs should be linked with the health service facility-delivery system at different levels to ensure their utilization.
- As most people go to TBAs and village doctors they should be given proper training and integrated into the main stream of government health intervention programmes, which should upgrade the poor maternal and child health care status existing in Bangladesh to a greater extent.
- Policies to expand educational opportunities, particularly for girls, would increase access to information and health services and improve their ability to make good use of it in order to lead healthier lives. Besides, it would ensure male involvement in maternal health related issues.
- To make rural men conscious of maternal health and health services during their pregnancy and during their childbirth.
- To create the demand for available maternal health services and to change or develop the persons who providethe health services.
- Taking intensive measures for the rural male regarding consciousness of safe motherhood; if needed they should be given advice, suggestions, and proper training.
- To give proper training and provide necessary treatment equipment to cope with the emergency situations of the pregnancy period and delivery period of the mother, to the employed doctors in the thana health complexes.
- To give emphasis about the age

at marriage of girls/women, i. e. no women shpuld marry marriage before 18 years of age.

- To fulfill the need of the rural women's medical checkup on a regular basis during their pregnancy period.
- Increase the consciousness of the family members so that the pregnant women can get rest or keep themselves away from hard work. In this regard the family planning workers can play an effective role.
- To create a responsible structure in the whole medical system.
- Above all, we can say that the distance of health care centre or medical facilities is the main hindrance to get proper health services for women. In these circumstances, if we can deliver the services to the doorsteps of the mass of people and decrease poverty, illiteracy, superstition, ignorance, and familial hindrance etc. then it is possible to ensure the safe motherhood and enhance women's dignity, self-esteem and status. So, a massive awareness drive should be launched at the rural level for ensuring safe and better motherhood.
- Lastly no policy can be fulfilled if it does not follow from grass root to the national level. I hope this study will help the policy makers to adopt strategies to improve male knowledge regarding safe motherhood in order to reduce maternal and child mortality in Bangladesh.

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Table-1: Age of Respondents

Age	Percentage	Mean	Median	Std. Deviation
<25	8.6	3.11	3.00	1.29
25-30	32.9			
30-35	15.7			
35-40	24.3			
40+	18.6			
Total	100			

Table-2: Educational level of respondents

Education level of respondents		Mean	Median	Std. Deviation
Illiterate	2.9	3.57	4.00	1.21
Only Sign	18.6			
Primary	24.3			
Secondary	32.9			
H Secondary	15.7			
Higher	5.7			
Total	100			

Table 3: Any checkup or vaccinate in pregnancy period

Checkup or Vaccinate	Percentage	Mean	Median	Std. Deviation
Yes	94.3	0.94	1.00	0.23
No	5.7			
Total	100			

Table 4: Place of first birth delivery

Place	Percentage	Mean	Median	Std. Deviation
Govt. Hospital	27.1	2.42	3.00	0.89
Private Hospital	2.9			
At home	70.0			
Total	100			

Table-5: Types of treatment process

Types	Percentage	Mean	Median	Std. Deviation
Village Doctor	50.0	2.20	1.50	1.28
Homeopathy Doc.	2.9			
Govt. Hospital	24.3			
Family planning centre	22.9			
Total	100			

Table-6: Monthly income of respondent's family

Income	Percentage	Mean	Median	Std. Deviation
<2000	24.3	2.58	2.00	1.36
2000-3000	35.7			
3000-4000	10.0			
4000-5000	17.1			
5000+	12.9			
Total	100			

Table-7: Age at first marriage of respondent's wife

Age	Percentage	Mean	Median	Std. Deviation
<18	77.1	1.9	2.0	0.4
18>	22.8			
Total	100			

Table-8: Age of respondent's wife at first child delivery

Age	Percentage	Mean	Median	Std. Deviation
<20	75.7	1.94	2.00	0.79
20>	24.3			
Total	100			

Figure 1: Age of Respondents

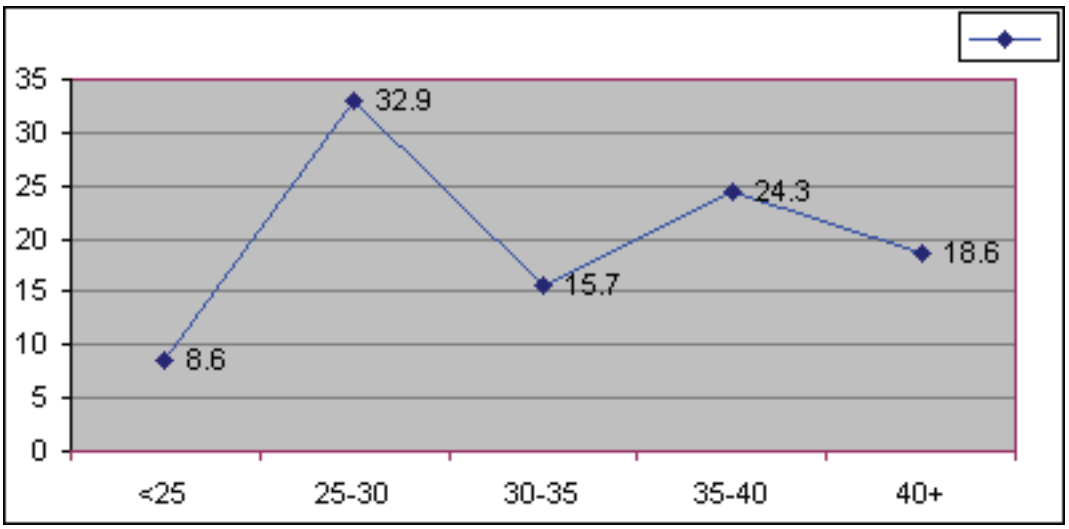
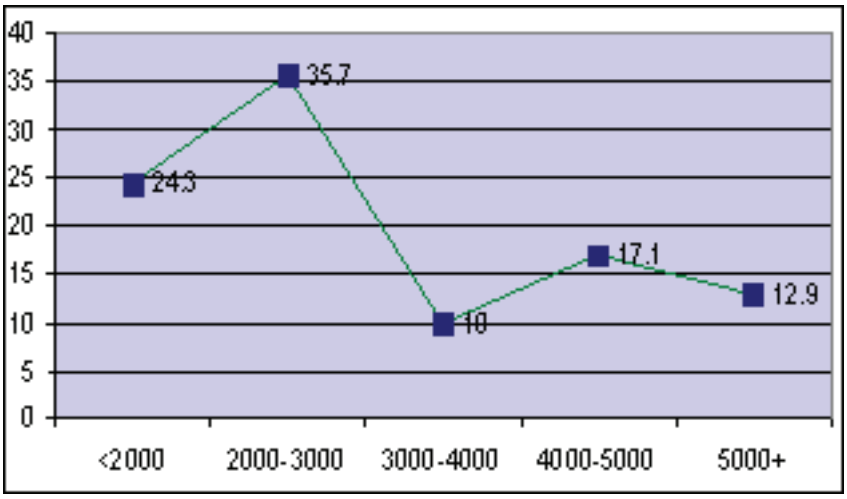


Figure 2:



THE APPLICATION OF RECREATIONAL AND LEISURE ACTIVITIES ON SCHIZOPHRENIC PATIENTS' SELF CARE

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ABSTRACT

Alzheimer's disease and other dementias are illnesses that affect the body physically, mentally, and emotionally. According to the Alzheimer's disease Education and Referral Center (2004), Alzheimer's disease is the most common form of dementia. As a result of these diseases, one's ability to perform everyday activities becomes greatly hindered. However, by incorporating specific recreational activities into this population's daily curriculum, the possibilities of them living more accomplished lives at this stage can increase. Recreational activities can counter-affect the symptoms of Alzheimer's disease and render positive effects to those suffering from these diseases. In a pre/post test study we recruited all chronic schizophrenic patients who could leave the psychiatric section; then the patient's psychiatrist and family filled consent forms for those participating in group recreational activities. Finally, 45 patients were assigned to the study and included a pilgrimage-recreational trip to Mashhad (East of Iran) for 10 days. Participants were obliged to take responsibility of their self-care and participate in collaborative activities as well as having a role in planning the trip and activities. Results show that group recreational activities as a rehabilitation intervention in psychiatric participants could impact on self- care skills.

Keywords: Recreational; Leisure Activities; Schizophrenic patient; Iran.

Introduction

Historically human beings have sought treatment of physical and mental illnesses. Owing to this, treating physical illnesses has been successful, but in the field of mental illnesses, because of their complexity in nature and contribution of bio-psychosocial factors on one hand and negative biases and beliefs in society on the other hand, therapeutic and rehabilitation interventions and their efficacy in this group are faced with some difficulties[1]. In mental disorders, particularly schizophrenia results in hospitalization. It is estimated that the prevalence of schizophrenia ranges from 1-1.5. Two thirds of schizophrenics need hospitalization, but in spite of need of treatment only half of them undergo treatment[2]. Individuals with mental disorders face relapses frequently. Some conditions are untreatable and result in chronic mental illnesses. In the US it is estimated that the rate of individuals with severe and progressive mental illnesses ranged from 1.7 - 2.4 millions with 350-800 hundred thousands with severe forms. In Iran the prevalence of individuals with psychosis, particularly, is similar to other countries and is about one percent in the general population. With regard to Iran general population of about sixty millions, it is speculated that about 600,000 persons need therapeutic and rehabilitation services and even hospitalization[4]. Also several studies have been conducted in the field of treatment and caring for mental disorders in other countries and some interventions have been implemented on schizophrenic patients. But results indicate that there is no significant difference between these interventions. Schizophrenia is a mental disorder which requires rehabilitation. Rehabilitation is very time consuming, because of the variety of symptoms and diagnostic difficulties, and faces a person with complexity. In short, their treatment of choice is divided into two options: organic (pharmacotherapy, electroconvulsive therapy etc) and non organic (individual and group psychotherapy and family therapy). Individuals with schizophrenia suffer from some disabilities in personal, social, educational and vocational dimensions, which require rehabilitation. There are several types of rehabilitation activities and each of them in turn, obviate some disabilities in clients.

While activities that are not therapeutic will not help the patient reach their full potential of reestablishing their lives[7], they give some guidelines for making each activity purposeful and effective. Activities should no longer be viewed as a way to keep the patients busy but should provide a way to establish meaning in their daily lives. Each activity should accomplish a variety of outcomes and enable the patient to contribute, play, learn, feel safe, and be with others. One of the group interventions in rehabilitation psychiatric nursing of schizophrenic patients is recreational activity interventions. In this type of intervention the therapist tries to include patients in recreational activities and hobbies that promote activities of daily living and self-care skills. Recreational activities intervention, based on recent studies, have been successful with regard to externalization of feelings and other emotions such as depression and anxiety[7], enhancing social skills and personal and group decision making[6].

Some investigations have shown that group recreational activities promote socialization and daily performance[7, 8, 9], social skills and

sociability and result in enhanced physical and affective well-being, as well as improve self-care skills through taking responsibility and sharing in recreational activities. All of these skills play a role in establishing appropriate behaviour[10]. Overall, group recreational activities result in promotion of self-care skills in patients and increase their chance to remain in the society context. Group recreational activities help individuals to be successful in society. Our purpose is to examine the effect of group recreational activities as a rehabilitation method on schizophrenic patients' self-care skills and if application of group recreational activities cause enhanced self-care skills in clients?

Materials and Procedures

The present study is a pre/post test study. Our purpose was to determine the effectiveness of group recreational activities on chronic schizophrenic patients' self- care skills in Razi psychiatric, educational and therapeutic center. At first, we recruited all chronic schizophrenic patients who could leave the psychiatric sector. Exclusion was comorbidity with other disorders, mental retardation. Then the patient's psychiatrist and family filled out a consent form regarding participating in group recreational activities. Finally, 45 patients were assigned to the experiment which included a pilgrimage-recreational trip to Mashhad which took about 10 days. The therapeutic team such as psychologist, psychiatric nurse, occupational therapist and social worker traveled with the team. The therapeutic and rehabilitation team undertook some duties and participants had major responsibilities in order to enhance self-directedness, promote collaboration and increase daily living skills. Participants were obliged to take responsibility of their self-care and participate in collaborative activities. All participants had an active role in planning the trip and activities such as shopping, pilgrimage, visiting, eating breakfast, lunch and dinner, caring for weaker participants etc.

Tools

To assess participants' self-care skills, we used a self-care skills scale. The self-care skills scale consists of 12 items such as washing, brushing, combing, shaving, and health care, nail cutting, clothing, appropriate use of drugs, ability to spend money appropriately. Each item has 4 options, which ranged from 0-3 points and the total score was 30. (Ability to engage in skill, 3 points; ability to engage in skill with encouragement, 2 points; ability to engage in skill but unwillingness to do so, 1 point, inability to do skill 0 point)[11, 12], and we employed this measure in Iran[8, 9, 10, 11].

Ethical consideration

Participants and their family filled consent forms in individual and group form. Psychiatrist and therapeutic team members justified participation in group recreational activities.

Results

45 participants were selected for research of which 30 were men (66/7) and 15 participants were women (Table 1). The mean and SD of participants' age was 39/8 and 3/31 respectively. Singles consisted of 53/3 of the sample (24) and 6/7 percent were married(3), and 40 percent were divorced (18). In total 13 percent were living alone (Table 2). Self-care skill dimensions which, consisted of washing, brushing, bathing, individual health, combing, grooming, shaving, nail cutting, eating habits, clothing, drug use and ability to handle money, results show that there were significant differences between before and after, statistically in 8 items (brushing, individual health, grooming, combing, shaving, eating rituals, clothing, drug use). In 4 items such as washing, nail cutting, bathing, using money, although skills had increased they did not show any significant differences (Table 3). Overall, Table 3 shows at a glance that means of self-care skills have increased from pre (29/56) to post intervention (32/16). T student test showed significant differences of pre and post intervention (p:0.000). (Table 3).

Discussion

As regards the investigation of the hypothesis of study, we can now gain more support for significant influence of group recreational activities on enhancing self-care skills. Results are consistent with other studies by Laurenhue[7]. Four dimensions in which there were no significant differences (however they were on the threshold), maybe due to bathing and nail cutting in Razi center conducted routinely twice a week, and because participants bring little money into the center, these skills are less encouraged.

Conclusion

In general, results show that group recreational activities as a rehabilitation intervention in psychiatric participants could impact on self-care skills. Therefore designing such interventions for treating and rehabilitation of schizophrenic patients could lead to better performance in variable dimensions of self-care skills and independence.

Acknowledgment

We would like to express our special thanks to Razi center, psychiatrists, psychiatric nurse, psychologist, occupational therapists, social workers, transportation and audiovisual center and charity institute to support Razi psychiatric patients, participants and their families who help us in conducting this study.

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Table 1. The frequency and relative percent with regard to patient's gender

Gender	Absolute frequency	Relative frequency
Male	30	%66/7
Female	15	%33/3
Total	45	%100

Table 2. The frequency and relative percent with regard to marital status

Marital status	Frequency	Relative percent
Single	24	%53/3
Married	3	%7/6
Divorced	18	%40
Total	45	%100

Table 3. Interpretation of self care skills scale

	Skill	Pre (M)	Post(M)	T score	DF	P value
1	Brushing	1/49	2/04	-3/953	44	*0/000
2	Combing	2/27	2/64	-3/900	44	*0/000
3	Nail cutting	2/60	2/76	-1/735	44	0/090
4	Bathing	2/69	2/89	-2/449	44	*0/018
5	Shaving	1/93	2/51	-4/619	44	*0/000
6	Eating rituals	2/76	2/93	-2/231	44	*0/031
7	Wearing clothes	2/93	3	-1/773	44	0/083
8	Care of appearance	2/38	2/67	-2/930	44	*0/005
9	Personal health	2/22	2/40	-1/835	44	0/073
10	Application of drug	2/76	2/93	-2/231	44	*0/031
11	Money management	2/47	2/67	-1/421	44	0/162
12	Washing	2/60	2/71	-1/51	44	0/256
13	Sum of items	29.56	32/16	-4/063	44	*0/000

CONTROLLING COSTS OF MEDICAL EQUIPMENT IN HOSPITALS OF IUMSHS

ABSTRACT

Much medical equipment in hospitals has become technically defect and therefore runs out of order every year, and as a result, a large proportion of hospital expenditure isallocated to supplying and repairing this equipment, and as such, great scientific damage and economic losses are imposed on the health care system of Iran. The purpose of the present cross sectional study was to evaluate the maintenance status and the controlling costs of medical equipment in the hospitals of IUMSHS. In this regard, 284 items of medical equipment and devices being used for at least 5 years in the hospitals of IUMSHS were selected, (using the stratified sampling method) and evaluated. The data collection tool was a questionnaire completed by the enquirer; descriptive and deductive statistics, biased variance analysis, and Spearman's correlation coefficient were used for data analysis. The research findings revealed that about 60% of the medical equipment in the hospitals of IUMSHS is controlled by the related employees, and that a medical engineering and maintenance department was absent in the investigated hospitals. In addition, variance analysis revealed that the mean score of controlling costs of the medical equipment did not show a statistically significant difference as compared to various international standards. Overall, the controlling costs of medical equipment in the investigated hospitals was unacceptable in 74.6% of the cases. In addition, there was a statistically significant correlation between supplying status and the costs ($p<0.005$; $r = 0.35$), between repairing status and the costs ($p<0.001$; $r = 0.15$), and between the training status and the costs ($p<0.000$; $r = 0.35$) of medical equipment. The results of the present research indicated the absence of appropriate planning for the costs of medical equipment in the hospitals of IUMSHS.

Key Words: Controlling, costs of medical equipment.

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Introduction

Taking advantage of a sufficient number of items of medical equipment and trained employees for operating this equipment, guarantees the position of managers in providing the best possible, accurate, and prompt health care services and diagnostic systems in their hospitals.

According to studies performed in Iran, one third of the total costs of establishing and equipping new hospitals is allocated to purchasing medical equipment; on the other hand, during budgeting, 10 - 20 % of the total price of this equipment should be allocated to their maintenance and repair.

According to Kendal's study in 1998, more than 60% of medical equipment lack facilities for their maintenance and repairing is useless in some countries, and this problem should be solved using the following plans:

1. Concurrent maintenance of medical equipment;
2. Controlling medical equipment;
3. Selecting appropriate medical equipment when purchasing it; and
4. Providing basic training programs for technicians of medical equipment.

Current evidence shows that ignoring maintenance, results in malfunction of medical equipment, and ineffective maintenance reduces hospital income and also confuses the patients and wastes their time and money. On the other hand, replacing and repairing the equipment imposes great costs on hospitals.

In this regard, Walsh suggests that implementing appropriate maintenance systems may result in strategies that not only increase the productivity of medical equipment, but also reduces the mean duration of hospital admissions.

The aim of our study was the controlling costs of medical equipment in the hospitals of IUMSHS, and noting this status may be a necessity and a useful platform for future research being performed in the hospitals of IUMSHS in Tehran, Iran.

Methodology

The present cross sectional study was performed regarding the controlling costs of medical equipment in the hospitals of IUMSHS.

The study population consisted of all medical equipment in the hospitals of IUMSHS, and regarding a 95% confidence interval for estimating qualitative and quantitative variables of research and also regarding acceptable accuracy levels for each of the variables, the sample size was estimated to consist of at least 10% of the population meeting the inclusion criteria (n = 284).

In this research, the maintenance status of medical equipment consists of actions performed for the status of controlling costs of medical equipment, and includes the costs incurred for the controlling, repairing, and providing training for employees working with this equipment (being classified into 2 groups, namely: acceptable and unacceptable). Sampling was performed by the stratified sampling method with appropriate allocation, and the hospitals of IUMSHS in Tehran constituting the strata.

Then, 10-15 % of the equipment of each hospital meeting the inclusion criteria was selected by the simple random sampling method, and was evaluated as the research sample.

The data collection tool was a questionnaire consisting of 2 sections: the first section pertaining to demographic characteristics of the

research subjects; and the second section was of the 4-choice Likert type, the choices being: always (3 points), sometimes (2 points), rarely (1 point), and never (no points).

The mean and standard deviation were calculated after scoring, the criteria for controlling costs of medical equipment being defined as follows: acceptable (score of 1.5 - 3) and unacceptable (score of 0 - 1.49).

The research method was as follows: the hospital managers and related authorities were consulted for collecting background data such as the number of wards equipped with medical equipment, the type of medical equipment, and the financial authorities and related experts in the hospitals who were consulted for collecting data regarding the controlling costs of medical equipment.

At the next stage, the clinical and pre-clinical departments of the investigated hospitals (including the laboratory, operating room, ICU, CCU, physical therapy, pathology, radiology, emergency room, cardiology clinic, sterilization, internal medicine, pediatrics and neonatology, burn care unit, orthopedics, neurology, CT scan, ENT, ophthalmology, isolation unit, laser therapy, nuclear medicine, plastic surgery, infectious diseases, renal transplantation, hematology, and health care) were visited, and according to the questionnaire (data recording sheet), the operators were questioned regarding the controlling status and the training provided for each item of medical equipment. It should be noted that a separate questionnaire was completed by the researcher for each item of equipment.

In addition, descriptive statistics were used for achieving the objectives of the research, for answering the research questions, and for analyzing the data; Spearman's correlation coefficient and biased variance analysis were used for evaluating the relationship between maintenance status and controlling costs of medical equipment.

In the entire research, the criteria for calculating the means were the scores obtained (with 0 being the minimum and 3 being the maximum score).

Results

The results of the present research revealed that regarding functional status, 45.7%, 64.5%, and 12.4% of the medical equipment in the hospitals of IUMSHS were diagnostic, therapeutic, and educational/investigational devices, respectively; the mean life expectancy of the equipment was over 20 years.

The highest definite frequency of purchasing and installing the medical equipment was observed from 1996 to 2000 (23.24%) and from 1991 to 1995 (21.8%).

Diagram 1 reveals that most medical equipment in the investigated hospitals met international standards and were manufactured in Germany.

Cleaning of the devices was performed by technicians, the medical equipment maintenance department, the experts, the attendants, and the professionals in 44.8% (most frequent), 3.2% (least frequent), 7.8%, 39.9%, and 3.2% of the cases, respectively.

30.4% of the investigated equipment lacked the required technical documents, and 46.47% of the medical equipment in the investigated hospitals had naming labels and the servicer's address attached to the devices.

Regarding the operators' experience in operating the devices, 32.4%, 18.3%, 14.1% 13.4%, and 9.9% of the operators had < 5 years, 5-9 years, 11-14 years, 15-19 years, and over 20 years of experience in operating the devices, respectively.

In addition, catalogues were the most frequent technical document present pertaining to the equipment in the investigated hospitals.

Most (30%) of the medical equipment in the investigated hospitals were devices used in the laboratory and the operating room.

The results obtained after surveying operators regarding their opinion about the purchasing conditions, revealed that most of them (35.2%) considered all conditions (e.g. written certificate, availability, cost-effectiveness, and possessing international standards), and 24.6% of them said that purchasing the medical equipment was cost effective.

Moreover, biased variance analysis showed that the mean scores of supply status (F = 0.91), repair status (F = 0.08), training status (F = 0.51), and cost status (F = 0.15) of medical equipment did not have a statistically significant difference compared to international standards.

Table 1 shows the mean and standard deviations of medical equipment maintenance status in the investigated hospitals and according to international standards.

Variance analysis revealed that in various standards, the mean score of medical equipment supply status did not have a statistically significant difference (F = 0.91).

In addition, the correlation coefficient matrices in Table 2 shows that statistically significant relations are seen between maintenance status and cost status of medical equipment, between supply status and cost status ($p = 0.005$, $r = 0.35$), between repair status and cost status ($p = 0.016$, $r = 0.15$), and also between the training status and cost status of medical equipment.

Discussion

According to the facts presented in the "Results" section, neither of the investigated hospitals had a medical engineering and maintenance department.

After performing research on the hospitals of England for 7 years, Hosper (1991) suggested that the presence of a medical engineering department reduces the hospital costs by 30% on average. In this regard, the results performed by Jadidi showed that neither of the hospitals in Arak, Iran have a medical engineering department. Most (28.9%) medical equipment present in the hospitals of IUMSHS

was manufactured in Germany. In Jadidi's research performed in Arak, 27.93% of the medical equipment present in the hospitals of Arak University of Medical Sciences was manufactured in Germany. This fact reveals that Germany has more commercial relationships with Iran and therefore, provides better facilities for exporters, manufacturing companies, and customers.

Evaluation of the technical documents pertaining to the medical equipment in the hospitals of IUMSHS revealed that a user manual for medical equipment was present in 37.2% of the cases in the investigated hospitals.

Due to the great importance of the user manual for training the operators, such a manual should be procured and translated (if needed).

A service manual was present in 15.6 % of the investigated medical equipment. In this manual, the servicing process and the effective inspection timetable for medical equipment is presented; thus, it should be carefully studied and carefully respected by the medical engineering and maintenance department or by the companies offering after sales service.

In this regard, Kumar (1998) performed research on describing anesthesia machines and concluded that a well-designed checklist for anesthesia machines was present in only 8.8% of the investigated hospitals.

A catalogue was present in 64.8% of the investigated medical equipment. This figure was reported to be 42% in a study performed by Mohammadi-Nejad in 1993 on the hospitals of IUMSHS.

Generally speaking, it seems that the operators and the various hospital authorities pay no attention to recording and maintaining the technical documents of medical equipment and don't consider a well-defined place for filing these important documents. In addition, during his research, Mohammadi-Nejad suggested that in neither of the investigated hospitals was a "Maintenance and Educating Committee" present for keeping the compiled guidelines.

Due to the critical role of international standards in effective maintenance of medical equipment, it is claimed that most medical equipment is under the supervision of a well known standard (such as TUV of Germany, FDA of USA, BSI of England, CSA of Canada, etc.), partly as a result of the export regulations of these countries which don't permit exportation of medical equipment lacking the required standards. Overall, 53% of the investigated medical equipment had an international standard, 28.88% of which had TUV of Germany, 5.6 % having BSI of England, 19.1% having FDA of USA, and the remaining 12.3% having IRN of Iran, and 10.56 % having JS of Japan (being present only for medical equipment manufactured in Japan).

If this equipment was manufactured in East Asian countries under the license of Japan, they usually lacked a confirmed international standard.

In this regard, biased variance analysis regarding the mean scores of the investigated medical equipment maintenance status (according to the international standards of Germany, USA, and England) did not show a statistically significant difference, i.e. neither of the TUV, FDA, or BSI standards provided services (for improving training, supplying, and repairing status) to the hospitals of IUMSHS; this could be due to a lack of appropriate planning before purchasing the equipment.

According to the research findings, in most cases (40%), cleaning the medical equipment in the investigated hospitals was performed by the attendants, and in Jadidi's research, this figure was reported to be 54%. Regarding the regulations of maintenance accompanied with prevention, in which cleaning has been entrusted to the operators or the medical engineering and maintenance department personnel, entrusting this task to the attendants isn't justifiable and may cause irreversible damage to the equipment.

Regarding the medical equipment's standards, the results of our study indicate that 46.1% of the medical equipment did not have any of the required standards (e.g. FDA, TUV, BSI, CSA, JS), probably due to inappropriate purchasing strategies and also due to ignoring the need to acquire the technical expert's opinion regarding the quality of the equipment. Usually, the lower price of the equipment is considered the most important factor at the time of purchasing.

The results of research performed by Sunseri (1999) in this regard indicated that in two thirds of the investigated hospitals, the medical equipment's status regarding international standards were such that a number of items of medical equipment (especially in departments such as pharmacies, laundries, etc.) were out of order each year and should be discarded.

Regarding the training of medical equipment operators, the results obtained show that 74.8% of the operators need training, which in turn indicates that some hospital authorities disregard the importance of training, which causes the sub-optimal utilization of medical equipment.

On the other hand, 46.1% of the operators noted they had never received any training courses related to the medical equipment; in Jadidi's research, 76% of the operators needed training.

Due to job transfer common among the operators, their incomplete understanding of the materials being instructed, or the defective training provided by the supplying companies, it is suggested that hospital authorities pay more attention to periodic and frequent training.

In this regard, training was often (in 44.9% of the cases) rendered by supervisors of the pertinent wards; however, this training should be provided by the medical engineering and maintenance department of the hospitals or the engineers of the companies providing after sales

service, which results in appropriate utilization of medical equipment.

56.7% of the equipment was useless due to the lack of spare parts and overdue repairing. In 1991, Wong performed research on medical equipment in Brazil and indicated this figure to be 20 - 40%, and suggested the spare parts to be supplied beforehand, in order to reduce the time required for repairing and servicing, and to prevent losses in hospital income or in services provided for patients.

According to the research findings, the mean time interval between the announcement of defects and the completion of repairs was at least 1 month. This could be due to a lack of coordination and also due to inappropriate relationships between hospitals, the company's monopoly, or overdue payment of repairing and servicing fees by the financial departments of the hospitals.

Regarding the importance of the mean repair time of the medical equipment, Dikerson suggested that since the mean repair time indicates promptness of after sales services provided by the companies and the attention they pay to their customers, this time interval should be reduced to the least possible interval, i.e. a few days.

In 2000, Augusta performed research on preventive maintenance of medical equipment, and suggested that decision-making regarding preventive maintenance is accomplished using two managerial tools:

1. Management plan of medical equipment, and
2. The valuation system of medical equipment maintenance.

The results of his research revealed that 49% of the defects could be prevented by preventive maintenance.

The authorities of the maintenance department and the procurement department in the hospitals should emphasize and pay attention to other commitments. In the present study, the least frequent (2.9%) commitment acquired was related to consumed accessories, because most of these accessories are produced in Iran, and also because hospitals store them in their warehouses.

The controlling costs of medical equipment indicated that the costs of medical equipment was unacceptable in 77.4% of the cases, and 9.6% of the yearly budget was allocated to repairing and servicing medical equipment. In research performed in 1993, Mohammadi-Nejad reported that documents indicating purchasing costs, maintenance and repair costs and the yearly total budget were available in neither of the hospitals of IUMSHS.

In research conducted in relation to the yearly budget of hospitals, Kendal suggested that the hospital authorities should allocate one fourth of their total yearly budget to the controlling costs of medical equipment.

In the present research, a special budget (expressed as a certain fraction of the hospital total budget) was allocated to the controlling costs in only 24% of the investigated hospitals, and regarding the mean and standard deviations (being 1.08 and 0.66, respectively), the medical equipment cost status in the investigated hospitals was defined as low to intermediate.

In his article titled "The structure of service centers for economical efficiency", Irnichw (1999) stated that for beds 100 need 1 person and that there are differences between the medical equipment in the investigated hospitals.

Therefore, statistically significant relations are seen between maintenance status and cost status of medical equipment, but the correlation coefficient matrices have no correlation coefficient between two variables showed that the perhaps reasons are that there was no correct planning system of Repair and Supply status of medical equipment.

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Table 1. Medical equipment supply status in the hospitals of IUMSHS, according to international standards, 2000.

Country	N	Mean	SD
USA (FDA)	54	1.15	0.796
Germany (TUV)	82	1.2	0.6563
England (BSI)	16	0.9	0.5837
Sum	152	1.15	0.70

Table 2. The correlation coefficient matrices between the various maintenance (supplying, repairing, and training) variables and the controlling costs of the investigated medical equipment in the hospitals of IUMSHS, Tehran, Iran.

Variables	Supplying	Repairing	Training	Costs
Supplying	1			
Repairing	r = 0.37 p = 0.000	1		
Training	r = 0.36 p = 0.000	r = 0.26 p = 0.000	1	
Costs	r = 0.35 p = 0.005	r = 0.15 p = 0.016	r = 0.32 p = 0.000	1

*The medical equipment cost status was unacceptable in 77.4% and acceptable in 22.6% of the cases, respectively.

FERTILITY AND CONTRACEPTIVE USE IN BANGLADESH: THE ROLE OF WOMEN'S EDUCATION AND MASS MEDIA

ABSTRACT

In this paper our aim is to examine the impact of education, both formal and informal (via media, GOs and NGOsa) education, which is believed to affect the use of contraceptives and hence, fertility levels. This paper utilized the logistic regression model of Bangladesh Demographic and Health Survey data to investigate the effects of education, and exposure to mass media, on the method of contraception and on fertility. The results show educational attainment (at least secondary) and exposure to mass media substantially increases use of contraception and consequently fertility decline. Women members of GOs/NGOs, urban residence, number of surviving male children, and employment status are other factors associated with increased use of contraception and decline in fertility. Interestingly, the effects of media and GOs/NGOs varied according to the urban-rural residences. While television was found to have a significant effect on fertility and contraceptive use between both the urban and rural women, the effect of radio and GOs/NGOs was insignificant among the rural women. However, exposure to mass media and education (except secondary) appears to have weak significant effects on fertility and strong on contraceptive use.

Key Words: Fertility, Contraceptive Use, GOs/NGOs, Mass Media, Formal and Informal Education.

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Introduction

As in many other developing countries, Bangladesh is a country that has achieved a substantial reduction in fertility despite little improvement in levels of material well-being, education, women's status, child survival and other factors frequently associated with demographic transition. The family planning program is credited with being the main driving force behind this reduction, while the role of social and economic change is de-emphasized (Larson and Mitra 1992; Cleland et. al. 1994). Bangladesh is internationally considered a success story in family planning (Freedman, 1995), with an increase in contraceptive prevalence rising from 8 percent to 54 percent and a decline in the total fertility rate from 6.3 to 3.3 in the three decades since independence (Mitra, et. al., 2001). Success in meeting these population goals were advanced with the help of concerted efforts of the government in conjunction with NGOs and donor organizations who ensured that free or affordable contraceptives were available in both public and private facilities throughout the country. Since the late 1980s there has been a large increase in the number of couples using family planning methods. Unfortunately, the use of family planning declined to 50 percent in 2001 BMMS. The decline in overall use is due to a decline in the use of traditional1 methods (from 10 to 6 percent). Use of modern methods has little changed since 1999-2000.

Social indicators, such as employment and electricity, have allowed women to gain in the development process. There has been an increase in the number of females in the workforce, nationally as well as in rural areas. The garment industry absorbed a good majority of female labor. Electricity also generates employment. Its impact on employment is both direct and indirect. The percentage of households with an electrical connection increased from 68 percent in 1991 to 77 percent in 1994 in urban areas and it doubled from 7 percent to 14 per cent respectively in rural areas (Khuda and others, 2000). Women in the electrified households are involved more in household level income-generation activities and depict better re-allocation of time for remunerative employment. The unemployment rate is relatively low in the electrified households; and a relatively higher share of non-agricultural employment in the electrified households indicates a modernization effect of electricity on occupation. It is interesting to note that the overall literacy rate for both males and females in the electrified households is higher, especially due to the household's access to electricity which has contributed much both in economic terms as well as in raising awareness about value of education (Barkat, et. al. 2002). This strongly suggests that access to radio and TV enhances literacy in an informal way. Also NGOs have encouraged women's participation in activities outside the formal sector. In Bangladesh most of the NGOs working at the community level have tried to increase opportunities for women through informal education (see appendix C.1) and micro-credit programs. There are so many NGOs currently working on health and

family planning, as well as, on other problem areas in different regions of Bangladesh, that their activities may have encouraged people to adopt contraception in the late 1980s, precipitating a change in reproductive behavior (Goni, 2008).

There exist demographic and socio-economic variations across different regions in Bangladesh. Various studies have confirmed that during the past two decades women's status, in terms of education, employment, mobility and decision-making power, has undergone major changes. Also, there is evidence that such changes have contributed to increased contraceptive use and consequently fertility decline (Khuda and others, 1990; Khuda and Barkat, 1992). Additional changes resulting from increased access to mass media have fostered modern outlooks and attitudes, thereby lowering high-fertility norms, even among the poor. Radio ownership has increased from 25 to 31 percent. Access to television from 7 to18 percent from 1993-94 to 2000 in the rural areas; moreover, there is some access to cable networks (Mitra, et. al., 2001). The role of mass media, especially radio, is a contributing factor in popularizing the family planning movement in many of the developing countries. Villages in Bangladesh are less isolated today, having been linked to the outside world by the mass media (Cleland et. al. 1994). However, recent statistics suggest that, despite a continuing increase in contraceptive use, fertility decline in Bangladesh has stalled: Three successive Demographic and Health Surveys show that the total fertility rates were 3.4, 3.3, and 3.3 in 1991-93, 1994-96, and 1997-99, respectively and that contraceptive use has little improved (Mitra, et. al., 2001). It is believed that education and media, especially radio and television, has been the most instrumental vehicle in building awareness and spreading the knowledge of use of contraception and small family norms. Utilizing the Bangladesh Demographic and Health Survey (BDHS) data, the impact of education and the role of Radio and TV as an informal medium of education in reducing fertility and increasing contraceptive use will be examined in this chapter. We will also examine whether the effects of education and media vary among married women between urban and rural areas. This paper also tries to determine the other important factors that explain fertility behavior and contraceptive use.

The paper is organized as follows. In section 2 we discuss objectives, data and methodology; section 3 presents findings and discusses trends in fertility and current use of contraception, women's education and fertility, women's education level by some selected variables, determinants of fertility and contraceptive use; summary and conclusions are presented in section 4.

Object, Data and Methodology

The major objective of this paper is to examine the impact of education, both formal (as captured by educational attainment) and informal (as captured by media, GOs and NGOs), on the use of contraceptives and fertility in the national and urban-rural levels. Also this paper looks at the trends in fertility levels and contraceptive use in Bangladesh from 1975 to 2000. National level data are used for the 1975-2000 period. For the multivariate analysis of the determinants of contraceptive use and fertility decline, the 1999/2000 BDHS data are used. The 1999/2000 BDHS employed a nationally representative, two-stage cluster sample design. In the 1999/2000 BDHS, a total of 10,544 eligible women (ever-married and aged 10-49 years) were interviewed. In this study, we consider only currently married women of reproductive age: 9,450, from the 1999/2000 BDHS. Among these women, 6,630 lived in rural areas, and 2,820 lived in urban areas.

Two dependent variables are used: (a) current use of contraception (yes =1; no=0), and (b) fertility preference (prefer another child =1; otherwise =0). The interesting outcome of this analysis is "fertility preference" which indicates women's attitudes toward their future fertility. Although these attitudes may not perfectly presage actual future behavior, they can demonstrate prevailing social norms about family size. Because one of the goals of the National Family Planning Program is to promote a small family norm, these preferences may provide answers about the degree to which the program is accomplishing its objectives. On a micro level, fertility preferences also reflect the degree to which women and their husbands feel that they exercise control over their reproduction. For the contraceptive use variable - current use of modern family planning methods and non-use of them as the proportion of women reported that they were using family planning methods at the time of interview. Modern methods are much preferred (43 percent of married women) over traditional methods (10 percent). Logistic regression will be used for each dichotomous dependent variable. The independent variables included are the woman's age, number of surviving children, currently pregnant women (according to the respondent reports), exposure to mass media, women's education, member of GO/NGOs, discussed about family planning method with husband, can go shopping center after marriage, religion, employment status, electricity connection, residence and geographic division. Age, age-square, and the number of surviving children are treated as continuous variables. Table 5 below shows descriptive statistics of the independent variables used in this paper.

Results

1. Trends in Fertility and Current use of Contraceptive Method.

The time series estimates of TFR 1 over the last 25 years beginning with the 1975 BFS indicates a decline of 48 percent in TFR, or that of 1.9 percent per year. This can mainly be accounted for by rising contraceptive use, effective immunization and reduction of child mortality. The TFR declined dramatically from 6.3 children per women in 1971-1975 to 3.3 in 1997-1999 (Figure 1). During the same period, the contraceptive prevalence rate (CPR) increased more than six-fold, from 8 per cent

to 54 per cent (Figure 2). With the help of the concerted efforts of the government with NGOs in the field, the national family planning program achieved a remarkable success in a short period of time, attaining a current contraceptive prevalence rate of 54 percent in 1999-2000. The relative share of modern methods like pill and injection increased; however, the relative share of long-acting clinical methods declined. There are regional variations in contraceptive use, with Rajshahi (59%) and Khulna divisions (64%) having the highest prevalence rate and Chittagong (44%) and Sylhet (34%) divisions the lowest. TFR is higher in rural (3.54) than in urban areas (2.45) and contraceptive prevalence rate is 52% and 60% respectively. Except the age group 15-19, fertility declined substantially in all other groups, especially among women aged 35 and older (Mitra, et.al. 2001). The pace of fertility decline slowed down recently compared to the rapid decline in the late 1980s and the early 1990s. Since then it remained almost constant (Figure 1).

2 Women's Education and Fertility

Women's education has long been recognized as a crucial factor influencing women's childbearing patterns; extensive demographic literature is devoted to examine the role of female education in promoting sustained fertility decline. There are many reasons why we would expect increased education having an impact on fertility, and many researchers have documented the close relationship between education and fertility decline. The argument made by Lucas (2003) emphasizes that the increased return in investment in education leads to fewer children. Caldwell (1982) focuses on the increased costs of raising a child and diminished expectations of the lifetime return to parents from that child - both consequences of schooling - as setting off a fertility transition.

Some other researchers have focused on the relationship between women's education and fertility decline, arguing that a woman's education reduces her desired family size, changes the relationship between her desired number of children and planned number of births, and improves her ability to achieve her desired family size (Murthi, et al. 1995). Declines in fertility and infant mortality move hand in hand, and women's education may also have an indirect effect on fertility through the role it plays in reducing infant mortality. Better-educated women are more likely to know about hygiene and nutrition, and are more likely to act on this knowledge (Caldwell, 1986). The inverse relationship between female education and fertility is often pointed out, which is usually explained by the fact that higher education leads to greater use of contraception and consequently to lower fertility. It is suggested that education may enhance women's five levels of autonomy-knowledge autonomy, i.e. decision-making autonomy, physical autonomy, economic autonomy and social autonomy that eventually affect various reproductive health behaviors (Jejeebhoy, 1995).

Women's education reduces desired family size by raising desired living standards and provides a greater range of general information, better understanding of the reproductive process, and access to modern and effective means of birth control. Educated women tend to start using contraception immediately after marriage or first birth, but the less educated use contraceptives only to prevent higher-parity births (Chaudhury, 1978). Thus the better educated are more likely to

1. marry later, use contraceptives, desire a lower number of children and raise healthier children,
2. make better decisions for themselves and their children, and
3. make greater economic contributions to the household.

According to Table1, the age at first marriage is 14 with no education, compared with 20 for those who finished at least secondary education. Among uneducated women, the proportion of those who never heard or saw a family planning message on radio or TV is 75 percent and 49 percent do not use contraception; the corresponding figure for women who completed at least secondary education is 30 and 41 percent respectively. It is evident that female education can reduce economic dependence on other family members and enhance freedom of movement outside home. 64 percent of non-educated women are employed earning cash, while it is 89 percent for those who completed at least their secondary education. Better-educated women have more freedom of movement. 26 percent of the non-educated go alone to hospital for herself or for her children; compared with 33 percent for those who completed at least secondary education.

The Bangladesh Demographic and Health Survey (1999-2000) provide interesting information about actual and desired fertility rates and current contraceptive use, access to media and educational attainment of women. As expected, the educational attainment of women is strongly associated with fertility. Looking at the relationships between women's education and TFR (Table 2), it appears that TFR (2.3) of women with at least secondary education completed is substantially smaller than that of the uneducated (4.1). TFR decreases with rising levels of education. Table 2 also presents data on the same women's total wanted fertility rate (TWFR). All educational groups of women, except those with no education, want to have around replacement-level fertility (2.1) or lower. Women with primary school-level education report that they want to have 2.2 children, whereas those with at least secondary education want to have only 1.8 children. TWFR for women with no education is above replacement level. For all educational groups, TFR exceeds the TWFR. The difference is greatest for the group with no education -TFR exceeds TWFR by 1.3 children - and decreases with education to 0.5 children for the highest-level group. Such differences between actual and desired fertility suggest that by enabling women to avoid unwanted fertility through better family planning services by both government and non-government agencies, it would lead to a fertility rate around replacement level for all women

except those with no education.

A quite similar picture emerges when one compares the use of contraceptives by education levels of women; only those who have completed at least secondary education are more likely to report a higher use of both modern and traditional methods than other women. It is worth mentioning here that TFR and TWFR are lower among those with secondary education. Generally contraceptive practice increases sharply with education (BDHS 2000). Those indicators in Table 1 and Table 2 suggest that educated women not only have different fertility goals, but also have their aspiration focused on reality.

But here it is hardly recognized that the successive two BDHS 1996-1997 and 1999-2000 (Mitra, et.al, 2001) suggested that contraceptive use has increased among women with little or no education (5%), while this figure is only 3% for those who had at least secondary education. This is really surprising. Access to media may be a factor explaining this progress among the illiterate; especially listening to the radio is more common among rural than urban women. It is that urban women are more likely to have access to radio and television than rural counter parts; and the urban-rural difference is much greater with TV watching (see Table 5). Since the 1996-1997 BDHS survey, the ownership of radios in urban areas decreased from 52 to 45 percent, while there is little or no change in rural areas at 29 percent (Mitra et. al., 2001). Listening to radio and watching TV are positively associated with educational attainment; both increase with increasing educational level of respondents.

If mass media is related to fertility preference and contraceptive use, we have Tables 3 and 4. Table 3 shows that of those who listen to radio and watch TV, 67.8 and 70.3 percent respectively do not want an additional child. Similarly 57.8 percent of those listening to radio use contraceptive methods. In the case of TV watching, 62.2 percent are users of contraceptives. Therefore, Tables 3 and 4 suggest that women listening to radio and watching TV are more likely to use contraceptives and less likely to want additional children.

Further investigation into such relationships with some other socio-demographic variables taken into account will be conducted in the next section. Descriptive statistics of all the independent variables used are presented in Table 5. The average age of women in the sample is around 29 years. The number of surviving male and female children was 1.24 and 1.21 respectively. The proportion educated is 29 percent at the primary level, 24 percent at the secondary level and only 6 percent at the higher level. In the case of employment only 19 percent was employed. What is suggestive in the Table is that in percentage terms mass media is more important than formal schooling: ownership of radio (32 percent) as well as access to radio listening (34 percent) is greater than the proportion of those educated at primary school; and watching TV (24 percent) is at the same level as for secondary schooling although ownership is much less frequent in this case (10 percent). It is worth noting that those actually listening to radio are a little more numerous than those who own radio sets, while the difference is much larger for TV. This suggests that mass media can serve as an informal medium of education for the un- or less educated in rural, disadvantaged situations. Moreover, membership of GO/NGOs is 24 percent. 39 percent and 29 percent of women are respectively able to discuss family planning methods with their husband and to go to a shopping center after marriage. 36 percent are reported to have electricity connection in their house. In the sample, 13 percent of women are non-Muslim, 39 were in Rajshahi-Khulna divisions and 28 percent in Chittagong-Sylhet divisions.

National averages like these often mask some important disparities between urban and rural societies. There are some noticeable urban-rural differences. Urban women are better educated than rural women. While access to radio does not greatly vary between urban and rural areas, access to TV is substantially better in urban than in rural areas. However, it is interesting to note that the opposite is true for membership of GO/NGOs: rural women are much more likely to be a member of one of such organizations than urban women.

Given the descriptive statistics of the independent/explanatory variables above, which are likely to affect women's fertility decision (whether they want another child or not) and contraceptive use among the married women, logistic regression analysis may be conducted in the next section.

3 Determinants of Fertility and Family Planning Method

When conducting logistic regression analysis, it is important to pay due attention to urban-rural differences in the relationships between the dependent and independent variables. Thus three runs are tried for the set of dependent variables: first for the whole sample of married women, the second for the urban and the third for the rural sub-samples. Tables 4 and 5 show the logistic regression estimates of odds ratios for the effects of selected background demographic and socio-economic characteristics of married women of reproductive age on fertility and on current use of family planning methods during the reference period respectively. The results are in the expected direction for most variables, so odds ratios are shown in place of regression coefficients for the easy interpretation of results.

The results in Tables 6 and 7 show, as expected, that women who do not want an additional child, or who use contraceptive methods, increase significantly with age. This effect is statistically significant for both sub-samples (but age squared does not prove to be significant in either case). Also apparent is that currently pregnant women are likely not to want more children, and that women with male children are less likely to want any more children, which is a reflection of deep-rooted

son preference in Bangladeshi society, both urban and rural.

Table 6 shows that demand for any more children declines among the educated than the un-educated, working women than housewives, TV watching women than non-watching women, and members of GO/NGOs than non-members. Two indicators of women's "autonomy" have a similar impact on fertility preference. The probability for women who can discuss family planning methods (FPM) with their husband to want an additional child is longer than otherwise, so is that for those who can go to a shopping center alone. All these effects are estimates made by controlling for electricity connection (for a detailed study on rural electrification, see appendix C.2), religion, urban/rural residence and administrative division. Table 7 tells us a similar story with respect to contraceptive use. The probability for women to use contraceptives rises with education. The educational level of the women displayed significant positive relationships with women's odds of utilizing a family planning method. Relative to women with no education, women with primary, secondary and higher education show significantly greater odds of utilizing family planning methods. Again, women who have access to TV show a higher probability of using contraceptive methods.

Moreover, a close look at the results in columns 2 and 3 (Tables 6 and 7) reveals interesting urban-rural differences, especially in relation to education, mass media and GO/NGO membership. In urban areas, both formal education (secondary and higher education) and TV watching show significant effects on fertility and contraceptive use, while radio listening and GO/NGO membership do not. In rural areas, on the other hand, formal education (primary level upwards, but except higher education on fertility), mass media (both radio listening and TV watching) and GO/NGO memberships exhibit significant effects on fertility and contraceptive use. Given low but positive correlation coefficients between primary schooling, on the one hand, and radio listening and NGO membership, on the other (but not with TV watching; see appendix table C.3), perhaps, primary education in rural areas has a complementary effect with these factors, suggesting that informal education (via mass media and NGOs) has a significant effect on fertility and contraceptive use especially among the rural less educated women. As stated in appendix C.1, some large NGOs run a variety of informal education programs providing education to members' children who are not able to avail themselves of State-run education.

One may argue that in a developing country like Bangladesh TV is a luxury and radio an everyday luxury, so that the coefficients of these variables tend to absorb an income or wealth effect. Since, fortunately, the data allow us to separate radio listening from its ownership and TV watching from its ownership, we can check if there are strong correlations between the two. And it turns out that there is no multicollinearity problem for both radio and TV. Thus, both are included in the regression equations reported in Tables 6 and 7; and the Tables indicate that the effect of radio listening in rural areas is statistically significant even when the influence of ownership as well as electricity connection is controlled for. The same can be said for TV watching in urban areas. We also checked the results by excluding electricity from the model. But the results (not shown) were almost the same with slightly different sizes of coefficient of the TV ownership dummy. Indeed, in rural Bangladesh most people listen to radio and watch TV in their neighbour's house, typically village leader's or ward commissioner's house. There is a study by Kincaid, et al (2000) on health and family planning in relation to a drama called "Shabuj Sathi'2 of Bangladesh television. They find that currently married women (4,566) who watched the drama were 18.9 percent. 57.9 percent of them did not have their own television set, and the majority of them watched it at a neighbours' house. 52.8 percent of those who watched the drama are found to have used a modern contraceptive method compared with 38.4 percent who did not watch the drama. On radio and TV advertisements of family planning products are frequently broadcasted, with a slogan like "small family is happy family" (Soto Paribar Sukhi Paribar) in a gap of the main program, which must influence women to adopt family planning services. This kind of program can increase awareness among women and encourage them to adopt a small family norm in an informal way. Thus, the impact of mass media as a medium of informal education is independent of the income/wealth effect.

Summary and Conclusion

Bangladesh is one of the best examples of a developing country with a strong family planning program effort, which brought about a significant fertility decline even when social and economic development was sluggish. However, this study has highlighted the significance of both formal and informal education as factors influencing contraceptive use and hence, fertility decline. Three logistic regression models have been conducted. The results of the analysis shows that women's educational attainment and exposure to mass media are indeed significantly identified as contributing factors to the spread of contraceptive use and fertility decline. Relatively speaking for rural, less educated women, it seems that exposure to mass media is somewhat more important than educational attainment. Among other factors, women's membership of GO/NGOs and women's decision making position in the household (discussion of family planning issues with husband and ability to go to shopping center alone) are also noteworthy.

Therefore, this study indicates that improvements in both formal and informal education, together with family planning services should receive priorities in policies for further reduction in fertility. Family planning services are measures to help women avoid unintended pregnancies and the abortions that sometimes follow them (Rahman and others, 2001), so are formal schooling and informal education

via mass media. We find that there is a considerable amount of fertility that is in excess of desired fertility. Excess fertility is higher among women with no or little education. Informal education can play a crucial, complementary role, especially among the women with no or little education, in reducing the gap between desired and actual fertility because contraceptive use tends to increase among women with little or no formal education. GO/NGOs can also play an important role in providing opportunities for women to gain knowledge, confidence and skills to find better employment and also to promote reproductive health, including contraceptive methods. Working women are more likely to use contraceptives and have fewer children compared to non-working women (CPS 1991), so GO/NGO activities should be further encouraged across villages.

In Bangladesh, as noted earlier, the pace of fertility decline slowed down recently. Since the early 1990s TFR remained almost constant. Therefore, policy makers should carefully design family planning strategies by paying more attention to the roles that formal and informal education as well as GO/NGOs can play in order to reduce the gap between actual and desired numbers of children among less privileged families.

Notes: a Government Organizations (GOs), Bangladesh Rural development Board (BRDB) and Non-Government Organizations (NGOs) like Bangladesh Rural Advancement Committee (BRAC), Grameen Bank (GB), etc. their common activities are micro-credit and all other activities (such as training, awareness building, education, health) are surrounded by micro-credit activities.

1. Periodic abstinence, withdrawal etc. are traditional methods. Also see Alan, et al. (1997).
2. Kincaid, et. al (2000) studied on Shabuj Sathi (which in Bangla means “ever-green friend”) on television drama. The objective of the drama was to increase health related knowledge and healthy behavior of men and women. The main health topics featured in the drama are family planning, safe motherhood, childhood diseases and immunization, HIV/AIDS and nutrition. They collected data through face-to-face interviews of 10,400 men and women aged 15-49 and the analysis of the TV drama was conducted on the sub sample of all 4,566 currently married women. Overall health knowledge was significantly related to watching the drama, having the strongest relationship with knowledge of HIV/AIDS, followed by knowledge of nutrition and knowledge of childhood diseases. Married women who saw the drama were more likely to visit a health or family planning service facility than women who did not, and more likely to use a modern contraceptive method.

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Appendix C.1

Most of the NGOs are involved in a variety of activities: vocational training for skill development, micro-credit, adolescent family life education (AFLE, see below), sex education, reproductive health services, and legal assistance in cases of violence and abuse against women and implemented both school and out of school (Barkat and Murtaza, 2003). The Government has recognized this contribution of NGOs and there is significant collaboration between them.

Adolescent Family Life Education (AFLE) Curriculum

Adolescence: The period of adolescence; physical and mental changes during adolescence of boys and girls; importance of the adolescent period.

Reproduction and menstruation: Reproductive health; male and female reproductive organs; process of ovulation and menstruation; process of fertilization; menstrual hygiene; nutrition during menstruation.

Marriage and pregnancy: Age of marriage; age of child bearing; danger of early marriage; normal pregnancy; antenatal, natal, and postnatal care; signs of complications during pregnancy and delivery.

STIs and HIV/AIDS: Common Sexually Transmitted Infections (STIs, including a discussion of personal hygiene); common STIs; signs and symptoms of STIs; risks and transmission; complications of STIs; prevention of STIs.

Family planning and birth control: Why family planning is needed; types of contraceptives; advantages and disadvantages of contraceptives; how to use contraceptives; condoms and their advantages.

Smoking/substance abuse: Smoking-related illness; reasons for substance abuse; signs and symptoms of substance abuse; health hazards resulting from substance abuse.

Gender issues: Inequality between males and females; respect between sexes; roles of males and females in reproduction.

It is difficult to measure the impact of these kinds of adolescent reproductive health information and/or services NGOs are providing at the community level. They have been responsible in great part for increasing opportunities for women through non-formal and formal education, through delivery of reproductive health services (often on the doorstep) and by providing credit programs for women. According to their stated objectives, the majority of NGOs target the poor and disadvantaged.

Appendix C.2: Electricity and Fertility Decline:

The social and economic impact of rural electrification program in Bangladesh is examined in Barkat et al. (2002). Their study is based on two villages with 14,000 respondents and 2,491 households, of which 1,380 are electrified and 1,111 non-electrified. They show its impact on economic aspects including income, employment, and poverty reduction; social and cultural aspects including education, health and family planning; demographic aspects including birth and death rates. Their main findings are:

1. The overall literacy rates and the quality of education (measured by expenditure of education, dropout rate and time spent for study at night by student) are much improved in the electrified households than in non-electrified households. This quality improvement in the electrified households works through many channels: more time available for study after sunset, the quality of that time due to sufficient light and fan for comfort, strengthening the knowledge-base due to access to TV (which in turn increases the appetite for learning), parents (especially mothers/other elder female members) devote more time in assisting children's education compared to before electricity etc. In terms of knowledge about the crucial public health issues, respondents in the electrified households are reported to become more aware than those in the non-electrified households. 56% of them consider TV as the main source of knowledge (the corresponding figure for TV is 28% in the non-electrified households in electrified villages, and 17% in the non-electrified villages). TV played an immense role as the major source of such enhanced knowledge on health issues. The authors also note that income and employment opportunities are higher than non-electrified households due to the fact that in the electrified households women can spend more time for their household work such as sowing, harvesting, drying, etc. after returning from outside activities.

2. All those factors are related to fertility transition. The reported mean number of children ever born to women is 4.3 in both electrified households and households in the non-electrified villages. However, the mean number of deaths is relatively lower in the electrified households (50 ever-reported deaths per 100 households) than in the non-electrified villages (62 deaths) and in the non-electrified households in the electrified villages (59 deaths). In the electrified households, not only the mean number of the ever-died is relatively low, but also both the incidences of death and severity of death (measured in terms of death of 3 or more members) are less pronounced. As a result, the demographic consequences are better: the proportion of those still surviving to the ever born is higher in the electrified households (88.4%) than in the households of non-electrified villages (85.8%). The average household size of the electrified households is slightly higher (6 persons per household) than in the non-electrified households (5.4 and 5.7 respectively for those in the electrified and non-electrified villages). It is likely that this slightly high average household size of the electrified household is due to less poverty-induced out-migration of family members, higher incidence of joint-family structure, and more job opportunities in the electrified areas. The dependency ratio is lowest (0.64) in the electrified households, highest (0.73) in the non-electrified households of electrified villages and in-between (0.68) in the households of non-electrified villages. Thus, compared to the non-electrified, the same number of active population supports a smaller number of dependent populations in the electrified households. Estimates show that availability of electricity in the household contributes to 15.7% of the reduction in TFR (based on comparison of TFRs in two extreme samples), but the contribution of the availability of electricity in the village but not in the household is only 2%. The TFR of the poor in the electrified (2.7) was 26% less than that of the poor in the non-electrified villages, and it was even 7.5% less than that of the rich in the non-electrified villages (2.9). Thus, electricity not only contributes to overall TFR decline, but also to the significant reduction in TFR among the poor. Undoubtedly the refinement of these estimates are needed with respect to the entire demographics of population and reproductive health programs. It should also be noted that in addition to electricity, there exist many other determinants of fertility (other than the family planning program per se) such as income, employment, education and age at marriage.

Appendix Table C.3: Pearson Correlation Coefficient between education level and NGOs members and mass media

Education level	With NGOs members	With Radio listening	With TV watching
Primary	0.05*	0.02*	-0.04**
Secondary	0.03*	0.05**	0.11**
Higher	0.45**	0.44**	0.18**

"**" Correlation is significant at the 0.01 level, "*" Correlation is significant at the 0.05 level, (2-tailed)

Table 1: Relationships Between Female Education and Socio-economic/Demographic indicators from BDHS (1999-2000)

Fertility indicators related to	No Education	Primary education	Secondary and higher
Desired family size			
Mean ideal number of children	2.7	2.5	2.3
Percentage of women not having heard or seen family planning message from radio or TV	74.7	57.1	29.7
Age at marriage			
Age at first marriage of women aged (20-49)	14.1	15.1	18.2
Children's health			
Infant mortality rate a	92.0	72.3	54.7
Percentage of children aged 12-23 months without vaccination b	12.4	6.1	2.1
Contraceptive practice			
Percentage of women who are not currently using contraceptive method	49.0	47.1	40.9
Decision making or women empowerment			
Percentage of women who can go alone to health center or hospital	25.9	24.5	33.1
Proportion of employed women earning cash c	64.2	74.1	89.0

Notes: a The probability of dying before the first birthday. b According to the health card or mother's report. c All other women work for kind or both cash or kind. Primary education means grade 5 and secondary and higher means-grade 10 and more.
Source: Bangladesh Demographic and Health surveys 2000.

Table 2: Women's Educational attainment, according to fertility, contraceptive use, access to media and residence: BDHS (1999-2000)

Selected Variables	No education	Primary education	Secondary and higher
TFR1	4.1	3.4	2.4
TWFR 2	2.8	2.2	1.8
Method of contraception (Any method)	51.0	53.0	59.1
Access to media			
Radio (daily) TV (weekly)	17.4 19.5	30.7 35.4	48.1 64.0
Residence			
Urban Rural	29.06 46.12	25.04 30.7	36.7 19.6

Notes: 1 see figure 1; 2 Rates are based on births to women aged 15-49 in the period 1-36 months preceding the survey.
Sources: Same as Table 1

Table 3: Fertility Preference and Mass media from BDHS 1999-2000

Mass Media	Fertility Preference		
	No	Yes	Total
Listening to radio: No	3566 (59.66)	2411 (40.34)	5977
Yes	2352 (67.76)	1119 (32.24)	3471
Total	5918	3530	9448
Watching TV: No	2844 (56.03)	2232 (43.97)	5076
Yes	3072 (70.27)	1300 (29.73)	4372
Total	5916	3532	9448

Notes: Percentage of the women within brackets.

Table 4: Contraceptive use and Mass media from BDHS 1999-2000

Mass Media	Use Contraception		
	No	Yes	Total
Listening to radio: No	2731 (45.69)	3246 (54.31)	5977
Yes	1466 (42.24)	2005 (57.76)	3471
Total	4197	5251	9448
Watching TV: No	2502 (49.29)	2574 (50.71)	5076
Yes	1696 (38.79)	2676 (61.21)	4372
Total	4198	5250	9448

Notes: Percentage of the women within brackets.

Table 5: Descriptive Statistics of the Independent Variables

Variables	Whole Nation		Urban		Rural	
	Mean	St.dev.	Mean	St. dev.	Mean	St. dev.
Age	29.05	9.022	29.37	8.615	28.91	9.186
Age square	925.07	557.94	936.97	534.93	920.00	567.40
Number of boys	1.24	1.13	1.24	1.12	1.24	1.136
Number of girls	1.21	1.21	1.21	1.23	1.23	1.223
Education: Primary Secondary Higher	 0.29 0.24 0.06	 0.454 0.428 0.231	 0.25 0.32 0.14	 0.433 0.466 0.342	 0.31 0.21 0.02	 0.461 0.406 0.151
Employed	0.19	0.392	0.19	0.396	0.19	0.390
Mass Media: Listening to radio Radio ownership Watching TV TV ownership	 0.34 0.32 0.24 0.19	 0.472 0.481 0.426 0.40	 0.34 0.33 0.49 0.24	 0.474 0.472 0.500 0.431	 0.33 0.30 0.13 0.11	 0.470 0.451 0.335 0.375
Member of GO/NGOs	0.24	0.473	0.17	0.404	0.28	0.498
Currently pregnant	0.08	0.266	0.06	0.234	0.08	0.277
Can discuss FPM with husband	0.39	0.487	0.52	0.500	0.39	0.487

After marriage can go shopping center	0.29	0.455	0.32	0.466	0.20	0.397
Electricity	0.36	0.479	0.46	0.498	0.33	0.471
Non-Muslim	0.13	0.336	0.14	0.349	0.13	0.33
Rajshahi-Khulna	0.38	0.490	0.33	0.469	0.40	0.49
Chittagong-Sylhet	0.28	0.451	0.28	0.45	0.29	0.451
No. of observations	9450		2820		6630	

Table 6: Determinants of fertility preference: logistic regression estimates of odds ratios (OR=exp(B)) of characteristics of married women of reproductive age: BDHS 1999-2000.

Independent Variables	Model 1 (National)	Model 2 (Urban)	Model 3 (Rural)
Age Age square	0.96*** 1.01	0.97*** 0.99	0.94** 1.01
Number of boys	0.34 **	0.30**	0.35***
Number of girls	1.04***	1.06 ****	1.08**
Education			
No education r	1.00	1.00	1.00
Primary	0.89**	0.87	0.90***
Secondary Higher	0.90*** 0.83***	0.91*** 0.84***	0.90** 0.91
Employment status			
Employed (Housewife r)	0.68*	0.59*	0.72**
Mass media Listening to radio (No r) Radio ownership	0.77 0.92	0.86 0.95	0.73** 0.87***
Watching TV (No r) TV ownership	0.81** 0.89**	0.76*** 0.93***	0.73*** 0.98
Members of GOs and NGOs Yes (No r)	0.78*	0.81	0.61*
Currently pregnant-Yes (No r)	0.88 ***	0.87***	0.94****
Can discuss FP with husband Yes (No r)	0.78 **	0.70**	0.78**
After marriage can go shopping center Yes (No r)	0.90 ***	0.90***	0.86***
Has electricity in household" Yes (No r) Religion Non-Muslim (Muslim r)	0.98**** 0.80 **	0.88 0.78***	0.97*** 0.85***
Area			
Urban(Rural r)	0.91***	-	-
Division			
Rajshahi – Khulna (Others r)	0.96***	0.90****	0.94**
Chittagong – Sylhet	1.19**	1.13***	1.32*
Constant	1.53**	0.65**	2.44*
- 2Log likelihood	10186.66	2968.03	7176.97
Number of observation	9450	2820	6630
df	21	20	20

Note: "r " reference category. '*' Significant at p < 0.001; '**' Significant at p <0.01; '***' Significant at p < 0.05 and '****' Significant at p < 0.10; Others = Dhaka and Barisal

Table 7: Determinants of Contraceptive use: logistic regression estimates of odds ratios (OR=exp(B)) of characteristics of married women of reproductive age: BDHS 1999-2000.

Independent Variables	Model 1 (National)	Model 2 (Urban)	Model 3 (Rural)
Age Age square	1.03 1.01	1.07 0.99	1.02 1.01
Number of boys	1.41*	1.47*	1.40*
Number of girls	0.95***	0.89***	0.81**
Education			
No education r	1.00	1.00	1.00
Primary	1.21*	1.24	1.17**
Secondary Higher	1.38* 1.98*	1.37** 1.63**	1.23** 1.82**
Employment status			
Employed (Housewife r)	1.47*	1.09***	1.81*
Mass media Listening to radio (No r) Radio ownership	1.20 1.05	1.27 1.07	1.25** 1.10**
Watching TV (No r) TV ownership	1.20** 1.17 **	1.59** 1.24**	1.18** 1.16
Members of GOs and NGOs Yes (No r)	1.41*	1.01	1.45*
Currently pregnant Yes (No r)	0.46 *	0.50	0.58*
Can discuss FP with husband Yes (No r)	1.49 **	2.21**	1.12***
After marriage can go shopping center Yes (No r)	1.47 *	1.20****	1.47*
Has electricity in household Yes (No r) Religion Non-Muslim(Muslim r)	1.12**** 1.15***	1.11 1.27***	1.09*** 1.23***
Area			
Urban (Rural r)	1.61*	-	-
Division			
Rajshahi–Khulna (Others r)	1.12***	1.13	1.12***
Chittagong–Sylhet	0.43*	0.87***	0.35*
Constant	2.16*	1.87***	2.32**
-2Loglokelihood	8128.92	2090.18	5939.49
Number of observation	9450	2820	6630
df	21	20	20

Note: "r " reference category. '*' Significant at p < 0.001; '**' Significant at p <0.01; '***' Significant at p < 0.05 and '****' Significant at p < 0.10; Others = Dhaka and Barisal