Effect of Consultant Couple Interactive (CCI) session on fertility outcome among couples attending a primary Infertility Care Centre in Bangladesh

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ABSTRACT: Background: Consultant Couple Interactive (CCI) session is an interactive session held weekly between service provider and the infertile couple. **Objective:** The purpose of this study was to assess the effect of CCI sessions on fertility outcome. **Methodology:** This mixed method study was conducted from May 2009 to August 2012. The samples were collected from a primary care center at Bheramara upazila of district of Kushtia on couples attending during that period. The qualitative part was performed on couples by asking open-ended questions as well as the focus group discussion (FGD). For quantitative part, a preformed data collection sheet (questionnaire) was used to collect data through face to face interview. **Results:** A total number of 275 couples were studied. For qualitative study, 55(20%) couples were selected, of them 41 participated. In a single focused group up to 6 (12 persons) couples were included. Among the 41 couples, 61% had primary and in 39% had secondary infertility. All the respondents were exposed to CCI sessions but 186 (67.6%) were treated with only with CCI. Out of the remaining 53 (19.3%), needed ovulation inducing oral drugs, 5 (1.8%) were treated with metformin and the others required medical and surgical treatments in different combination according to need. Out of 275 respondents, 112 (40.7%) conceived and among the conceived group, 72 (64.3%) conceived only following CCI. From the seven FGDs, it was revealed that most of the couples followed the advices provided during CCI session, majority were able to improve the relationship among partners and two third of the respondents could relieve 75% of environmental pressure exerted on them. **Conclusion**: The consultant couple interactive session has significant effect on fertility outcome among infertile couples.

KEYWORDS: Infertility; counseling; oral ovulation induction; metformin in infertility; management of infertility

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Introduction

Infertility is a Global Health issue affecting approximately 10.0% to 15.0% of couples worldwide.[1] It implies no conception within one year of unprotected coitus[2]. Overall infertility in South Asia was revealed to be 8.0% to 10.0% in India, 10.0% in Pakistan, 11.0% in Sri Lanka, 12.0% in Nepal and 15.0% in Bangladesh[3]. Primary infertility refers to couples who have never conceived, whereas secondary infertility designates those who have conceived sometime in the past[4]. In both the cases, female factors account for 40.0% of infertility, whereas male factors account for 35.0%, combined male and female factors 10.0% to 20.0% and the unexplained factors 10.0% to 15.0%[5].

People, who experience infertility, tremendously suffer from psychological, familial and social stress. Among them females suffer the most [6-8]. The stresses appear to increase with duration of treatment and with lack of success in treatment[9-10]. The investigations and treatment are exhaustive to the most of the couples. Often the investigations and treatments are highly expensive and cumbersome [11-12]. Many studies claim, management steps in infertility exposed couples to unnecessary risks of Assisted Reproductive Techniques and also to the stress of treatment and high cost[13-14]. It is therefore crucial to be aware of the prognosis in these couples in order to discriminate between those who would be benefitted from active treatment and those who are likely to conceive naturally[15]. In Bangladesh, in the midst of population boom, large number of couples sufferer from infertility and are still in deprivation of adequate treatment facilities[16]. To handle large number of infertile population only a very few number of infertility specialists are there in Bangladesh and infertility management facilities are minimum or absent at public hospitals. Wide range of informal private services in the form

of herbs, amulets, holy water (enchanted with Quranic or other religious verses), certain drugs and various spiritual rituals are existent throughout the country, while only a few biomedical services are available in private sector[17]. These private sectors during last three decades have generated much hope among infertile couples through Assisted Reproductive Techniques. But they are accessible only to negligible number of clients because they are highly expensive and can be said as an unregulated trade working over the infertile couples[18].

Over the long run, evidence strongly suggested that there is a positive role of counseling in infertility care. The infertility consultation differs from other symptom- or disease-orientated consultations that counselors are not dealing so much with the objective of finding a diagnosis but far more with subjectively defined suffering determined by various personal and psychosocial features. Proper counseling and proper education about infertility along with psychological and emotional supports can lead to success when there is no gross pathology within the couple. Counseling may be: **Implications counseling-** provides sufficient information about the medical aspects of the treatment, so that it will assist the patient in making decisions about the most appropriate course of action; **Support counseling-** aims to give emotional support to patients experiencing distress; **Therapeutic counseling-** focuses on reflection of individual and family problems, acceptance of the situation, development of coping strategies and strategies to minimize distress, work on alternative life and self-concepts for the future.

With the above background an interactive session as part of infertility care is going on in a low resource setting for more than two decades, starting from year 1999. Initiated at district hospital, the program is extended to primary care center and selected tertiary level medical college hospital. This is a weekly session where an interactive session is made with the couple and a gynae specialist or specially trained service provider. Through Consultant Couple Interactive session, the couples get to know all those anatomical, physiological and psychological aspects of fertility including ovulation, fertilization, age factor, coital frequencies, need to life style modification etc. Different steps of care, its need, availability and cost of care; indication and site for referral, are also discussed. Awareness against harmful activities, mal-handling of cases and need for baby adoptions are talked about. The situation allows sharing of pain between the participants who attend the session. At the end of session base level investigations are done. The minimum cost of investigation and treatment and easy availability helps better access of the patients to this service. This session helps to build up life time resources in the country.

Currently there is no available data exploring the effect of education, information or counseling on infertility. This study was intended to evaluate the effect of CCI session on fertility outcome among the infertile couple attending at primary level infertility care center, determined by the rate of conception and frequency of retention of the information and led them into practice.

Methodology

Study Settings and Population

This mixed method study was conducted in within a 39 months period extended from May 2009 to August 2012. The observational follow-up study was done in a primary care center at Bheramara, Kushtia on couples attending the center after fulfilling inclusion and exclusion criteria. For quantitative part a preformed data sheet was introduced to collect relevant information after taking proper consent. The females aged, 20 to 38 years, seeking baby for at least 1 year within facility of regular unprotected coitus were the study population. They were voluntarily included in the study with their consent and they were neither supported nor additionally burdened financially. Ethical clearance was taken from the local ethics review committee.

Quantitative Part

Male partners having Azoospermia and unimproved cases of oligospermia were excluded. All the recruited couples were managed according to the traditional way, including initial evaluation of both male and female part, clinical examination and relevant base level investigations for infertility workup. All data were recorded systematically in preformed data collection form.

Qualitative Part

Couples were selected by computer generated simple random sampling technique. Then data were collected according to guide lines of Focus Group Discussion (FGD), where the researcher and small research team were the facilitators. Participants were requested to come to a household at Golapnagore, Bherama on scheduled date and time. 42 couples came but one refused to participate for time constrain. A FGD guide line was constructed to carry out the event. For general information and socio-demographic data collection two trained female data collectors were used in this study. Total 7 sessions were conducted. Around 1and half hour was spent for each session. Researcher herself facilitated all the sessions throughout 5 days of data collection from the respondents. A predesigned pretested open level questionnaire was used to collect data and interviews were audio taped. During data collection, respondents' art of expression and body languages were also taken into consideration.

Statistical Analysis

All data were compiled and reviewed meticulously. The data were screened and were checked for any missing values and discrepancy. All omissions and inconsistencies were corrected and were removed methodically. Computer based statistical analysis were carried out with appropriate techniques and systems. Quantitative data were expressed as mean and standard deviation and qualitative data were expressed as frequency distribution and percentage. Statistical analysis was performed by using window-based computer software devised with Statistical Packages for Social Sciences (SPSS-17). 95% confidence limit was taken. Probability value <0.05 was considered as level of significance. The association between variables was measured by Chi-Square test. Student's t test examined the association between quantitative variables.

Results

A total number of 275 couples were studied. For qualitative study, 55 (20%) of the couples were selected, of them 41 couples participated. Among 275 couples, 72% of the respondents were below age 30 years, majority (62.6 %) of the

respondents had ≥10 yrs. education and most of them were housewife (80.0%) (Table 1).

Table 1. Respondents according to Demographic Characteristics (n=275)

Females			**Males**	
Variables	**Frequency**	**Percent**	**Frequency**	**Percent**
Age Category				
• 20 to 24 Years	105	38.2		
• 25 to 29 Years	93	33.8		
• 30 to 34 Years	49	17.8		
• ≥35 Years	28	10.2		
Educational Status				
• Illiterate	17	6.2	21	7.6
• 1 to < 10 Years Education	86	31.3	57	20.7
• 10 to <12 Years Education	101	36.8	88	32
• ≥12 Years Education	71	25.8	109	39.6
Occupation				
• Housewife	220	80.0		
• Service Holder	52	18.9		
• Others	3	1.1		
• Farmer			26	9.5
• Business			124	44.7
• Service Holder			115	41.8
• Others			10	3.6

A good number of male respondents (39%) had education more than 12 years and 71.6% had education more than 10 yrs, and 44% of male respondent were business man, next to that 32% were service holders (Table2).
Among the respondents, 75 (27.3%) earned <5000-10000BDT per month, 126 (45.9%) earned 10001-<20000 BDT per month and 74 (26.9%) earned > 20000 BDT per month.

Semen analysis showed normal study in 249 (90.5%) respondents while 26 (9.5%) respondents had oligospermia.
Majority of the respondents had primary infertility (61%) and the rest (39%) were found to have secondary infertility
Among the conceived group 89.3% had normal semen report, while 10.7 % were oligospermic (Table 5).

Table 2. Association between Semen Status and Outcome of treatment (n=275)

Sperm Count	**Outcome of Treatment**		**Total**	**P value**
	Conceived	**Not Conceived**		
Normal Sperm Count	100(89.3%)	149(91.4%)	249(90.5%)	0.553
Oligospermia	12(10.7%)	14(8.6%)	26(9.5%)	
Total	**112(100.0%)**	**163(100.0%)**	**275(100.0%)**	

Pearson Chi-Square was done

The most of the respondents were treated with CCI only (68.0%), followed by CCI with Ovulation inducing drugs, CCI with other Treatment and CCI with Metformin which were (19.0%), (11.0%) and (2.0%) of cases respectively (Figure 1)

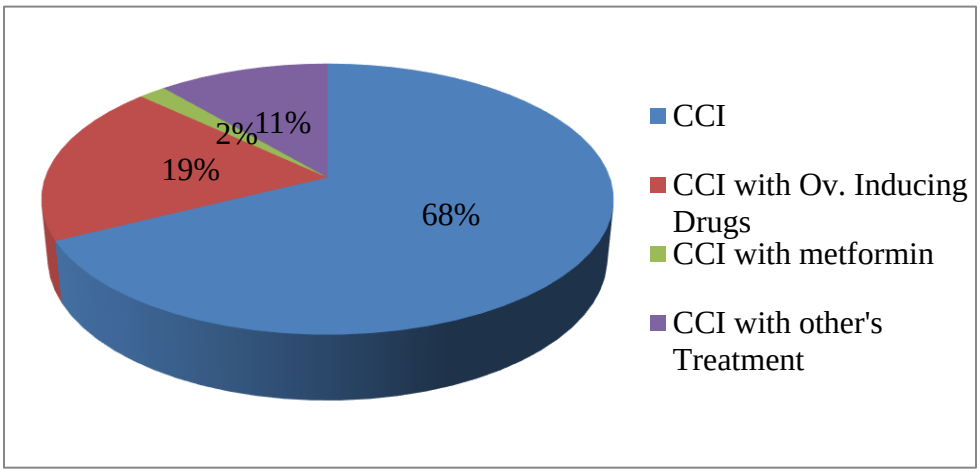

Figure 1. Pie Chart Showing Treatment Modality among Study Population (n= 275)

Among the conceived group 64.3% were treated with CCI only and 22.3% needed ovulation inducing drug along with CCI

Table 3. Association between Treatment Modalities and Outcome of Treatment

Treatment Modalities	Outcome of Treatment		Total	P value
	Conceived	Not Conceived		
CCI	72(64.3%)	114(69.9%)	186(67.6%)	0.3248
CCI with Ovulation Drugs	25(22.3%)	28(17.2%)	53(19.3%)	0.288
CCI with Metformin	0(0.0%)	5(3.1%)	5(1.8%)	0.061
CCI with other Treatment	15(13.4%)	16(9.8%)	31(11.3%)	0.356
Total	**112(100.0%)**	**163(100.0%)**	**275(100.0)**	-

Pearson Chi-Square test was done

The association between type of infertility and outcome of treatment was recorded. Among conceived group 58(51.8%) had primary infertility and Secondary infertility were in 54 (48.2%) cases (Table 4).

Table 4. Association between Type of Infertility and Outcome of Treatment (n=275)

Type of Infertility	Outcome of treatment		Total	P value
	Conceived	Not Conceived		
Primary	**58(51.8%)**	**110(67.5%)**	**168(61.1%)**	**0.009**
Secondary	**54(48.2%)**	**53(32.5%)**	**107(38.9%)**	
Total	**112(100.0%)**	**163(100.0%)**	**275(100.0%)**	

Pearson Chi-Square test was done

Qualitative Part of Study

Result from qualitative part of study showed how much the couple could retain the advices and information, obtained from CCI, in their memory and kept in practice. About the basics of fertility almost all told that any of the two partners or both may be responsible equally for infertility, about 55% can identify the coital time and practiced it in their life. Same number of participants told that those who have regular monthly cycle, intercourse around the period of middle 10 days of the cycle may give success. Regarding importance of life style modification almost 60 % of the couple could remember that to maintain scrotal temperature is important for gaining conception. About one third of the respondents retained the information that the female should keep their bodyweight normal by taking a balanced diet, doing regular walking and avoiding fatty meal. Majority know cigarette, biri or Tamak pata consumption is adversely related to both male and female fertility. Moreover, the environmental stressors they could handle nicely following CCI session. More than 2/3rd of respondents said that relation among husband and wife have been improved among around 60-70%, 1/3rd told they could minimize the environmental stressors up to 50% following CCI session. Regarding CCI acceptance in the locality, about 40% came to the center after knowing that an effective interactive session used to be held by the service provider. Remaining 60% came to know from studied Centre when they attained to seek fertility service. CCI also

modulated the health care seeking behavior, majority intended to seek proper medical care**.**

Discussion

To alleviate the pain of childless couple through some medical information, education and counseling reformed in the name of 'Consultant couple Interactive session (CCI)' is the matter of discussion. In this study, about 72% of respondents attended at age range 20 to 29 years (Table-1), those who aged < 20 years, were excluded from our study. Mean age of the female respondents in this study was 26.23 ±4.70 years, within age range of 20 to 38 years. In our study 6.2 % female found illiterate, however, a good number of females 31.3 %, 36.8% and 25.8% respectively achieved Secondary, Higher secondary and ≥ Degree level education. Interestingly though female education was satisfactory in our context, 80% of the females were housewife. This reflects the long trait of patriarchal pattern of the society. In this study though male educational status were similar to female's one, in our societal context, the females were not directly involved with earning, which could raise their empowerment. Relative low status of women compared with men is associated with a strong negative response to infertile women. [19] Regarding the evaluation of socio demographic factors of male partner, in our study 7.6% males were found illiterate. Occupation of male partner is an important factor for infertility.

Different studies strongly suggested that, occupational hazards out of occupational chemicals, pesticides; unhealthy life style eg Cigarette smoking; environmental temperature which can influence scrotal temperature, etc. could exert adverse effects on semen quality by decreasing its count and motility. [20] In this study 44.47% were related to business, 41.8 % service holder, 9.5% farmer and 3.6 % had other profession (Table 2). Regarding economic status couple who were attending in infertility care Centre, 27.3% earned ≤ 10,000 taka, 45.9% within range of 10,001 to < 20,000, 26.9% earned ≥ 20,000 taka per month. That also corresponds to the study of Sumia Bari[21]. In this study, reports of semen analysis were accepted according to WHO semen criteria. In most of the cases (90.5%) semen reports were normal and Oligospermia were found in 9.5% cases. All cases of Azoospermia, uncorrected Oligospermia, and Asthenozoospermia were excluded from the study. The prevalence of primary and secondary Infertility varies between developing and developed world. Study done in sub-Saharan Africa, in 14 Out of 23 countries, percentage of couples with secondary infertility was >25% participants[22]. In Zimbabwe, the percentage of women aged 25–49 years with secondary infertility was 62% (Center for Reproductive Law & Policy 1997). Prevalence of secondary infertility ranges between 15 and 20%, in other parts of the developing world like, Bangladesh, Pakistan, India, Indonesia and Nepal[23].

According to this study, majority of the respondents had Primary infertility (61%) and the rest (39%) were with Secondary infertility. Interestingly about half of the secondary infertility cases (50.5%) conceived. It indicates though secondary infertility is prevailing but chances of tubal block or male genital outflow obstruction were not associated in 50% of cases in our series. So in good number of 2ndary infertile cases couple have the chance to conceive without higher intervention like IUI or IVF. All the respondents were exposed to CCI and 67.6% needed no other treatment. Out of 275 couples 112 (40.7%) conceived. Those who conceived, 64.3% conceived only following CCI; 33 cases (12%) needed ovulation inducing oral drug and metformin for clinically evident anovulatory cycle. Remaining 23.2% were treated with different combination of medical and surgical treatment according to need. In any step of treatment, CCI has its impact (FGD Result) to achieve the goal. The rate of conception was significantly higher among those who have normal semen report and around 10% of cases also conceived in whom oligospermia had been corrected. In this primary level center, treatment was given on the basis of semen quality only. Further investigation to pin point the defect were avoided eg test for anti-sperm antibodies in the seminal fluid or bound to spermatozoan could be done to detect Immunological cause of male infertility. Moreover, such investigation is not needed in all cases because it accounts for only 3% of male factor infertility[24]. It is believed that several other factors might cause infertility including psychological factors[25-28]. Studies have shown that relieving anxiety, depression and stress can affect the number of oocyte, embryos and positive pregnancy test leading to changing the hormone levels that are associated with human fertility.[29] Hence in current practice infertility treatment is focusing on integrative approaches that include infertility counseling[30-31]. Though more studies are needed to prove that psychosocial interventions could improve pregnancy rate. Even then it can be said that a good number of childless couple may achieve desirable goal within the basic normal criteria of semen by attending Consultant Couple Interactive (CCI) session. More over this approach have minimum investigation for Infertility workup, helps to prevent wastage of money and time and discards physical and mental exhaustion.

A management protocol including CCI can be developed urgently to support the distressed couples and to optimize the achievable goal.

Conclusion

While Bangladesh is in real lag of addressing the overwhelming burden of infertility, this study suggest that infertile couple, without apparent cause, can be helped by Consultant Couple Interactive (CCI) session. Among the conceived group, who did not had any major issue majority conceived only following CCI session. About half of secondary infertile couples also conceived that excludes the possibility of tubal block related secondary infertility. Other than pregnancy, CCI imposes range of positive effects which will help the couple to avoid risk factors, relieves external pressures, life style modification and modulate health care seeking behavior. If we are committed to help the infertile couple in our vicinity, considering all the limitations, we should try for large scale study, Strategic planning and implementation of Consultant Couple Interactive session from the initial step of Infertility management.

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