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Original Research Article

Study of psychosocial aspects contributing to stress among women with primary infertility

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ABSTRACT

Background: Infertility remains a global problem since ages and lot of stigma in society even in the modern era. The burden of psychosocial stress in primary infertility is overwhelming, still there is limited literature regarding this.
Methods: We conducted a prospective study on 300 primary infertile women to determine the prevalence of psychosocial stress and the contributing factors. Data was collected using a semi structured questionnaire through a one-one interview, after narrating the purpose analysed the relationship of various psychosocial factors to infertility related stress.
Results: In the present study, female factor 41%, 25% had male factor, 9% couple with combined factor and 25% with unexplained infertility. Polycystic ovarian syndrome was the most common, 25.6%, and tubal factor 13.3%. The sperm abnormalities and oligozoospermia in 20.3%. Earlier 52% had undergone ovulation induction, 38% had intrauterine insemination and only 10% undergone in vitro fertilization. 23% women and 4% men suffered psychological trauma in the past, 4% women had already been treated for psychiatric problem. We found higher scores for failed period, mind distraction, avoiding social gatherings. Parenthood desire seen in 82%, 8% for continuation of progeny, 7.6% for future security and 2.3% for social obligation. 53% were willing to adopt on failure of treatment. The prevalence of psychosocial stress was 70% in present study.
Conclusions: Understanding the psycho social factors associated with stress helps to alleviate and improve the quality of life. Public health awareness programs and coping strategies are the need of the hour. Encouraging adoption will solve the twin problems of infertility and abandoned kids.

Keywords: Adoption, Infertility, Psychological factors, Stress

INTRODUCTION

Reproduction is a fundamental feature of all known life. One among the three "runars" (debts) as per Yajur-veda is Pithru-runar and can be e settled by continuing the lineage. The WHO estimates of primary infertility in India are 3.9% in the age group of 25-49 years and 16.8% between 15-49 years and varies from state to state.[1] A WHO study, published at the end of 2012, has shown that the overall rates of infertility in women from 190 countries has remained unchanged over the past 2 decades (1990-2010). [2]

Infertility being a sensitive topic, various factors revolve around and the couple develop stress which worsens fertility rate. Despite its wide prevalence across the globe, least talked about and understood. Patel et al from Manipal Karnataka conducted cross-sectional study in 2016 on 300 women with primary infertility, estimated the infertility specific stress was as high as 80%.[3] Study by Domar et al in 1993 compared the psychological symptoms of infertile women versus patients with other chronic medical conditions and concluded the infertile women had global symptom scores equivalent to cancer,

cardiac rehabilitation and hypertension patients, but lower scores than chronic pain and HIV positive patients.[4]

Aim of the study was to understand the various psychosocial factors contributing to stress in primary infertile population and to arrive at measures to improve their quality of life.

METHODS

A descriptive study was conducted on women with primary infertility attending the hospital as outpatients or inpatients over a period of 18 months at Sri Ramakrishna Hospital, Coimbatore, Tamil Nadu, India (July 2016 to December 2017).

Inclusion criteria

Women of reproductive age with marital life more than 1 year, undergoing assisted reproduction, willing to take part in the study.

Exclusion criteria

Women less than 19 years, more than 45 years, contraceptive users, secondary infertility and not taking treatment for infertility were excluded.

300 women were chosen using convenience sampling strategy based on these criteria.

After getting the consent and a good rapport with the patient, data was collected using a semi structure questionnaire through a one-one interview. This questionnaire has been used by Oddens et al in 1998.[5] Women were assessed for the presence of infertility specific stress by using psychological evaluation test questionnaire (PET).[6]

The emotional reactions and responses were scored with respective frequency. They were scored from 1 to 4, where 1 meant never/rarely and 4 meant always. The sum of all responses corresponded to PET score range from 15-60, score above 30 were categorized as having infertility specific stress. In the end, their suggestions and feedback of the interview obtained.

Statistical methods

Continuous variables were expressed as mean and median. Pearson chi-square test, likelihood ratios, Fisher's exact test, continuity correction and binary logistic regressions were used to establish odds ratio and p value. All statistical analysis performed using statistical software package (SPSS, version 20.0).

Ethical considerations

Permission to conduct this study was obtained from the Ethical review Committee and Department of Obstetrics and Gynaecology at Sri Ramakrishna Hospital, Coimbatore. Tamil Nadu, India.

RESULTS

Age

In the present study, mean age of female infertile patients was 30 years and mean age of their male partners was 34.4 years.

Education

All the patients were literates. 64% females and 60% males were graduates.

Occupation

In present study 58.6% were housewives, and 18.3% were professionals. Among men 41.3% were professionals, 1.6% were unemployed.

Socioeconomic status

Majority of couple belonged to upper middle class (38%). While 28% belonged to upper class, none belonged to lower class.

Menstrual history

In this study population, almost 50% had normal cycles. The menstrual irregularity was the most common disturbance accounting to 18.3%, and dysmenorrhea in 13.6%.

Marital life

The mean duration of marriage in the present study was 6 years and the mean duration of infertility was 5.83 years. Maximum period of infertility in this study was 19 years.

Table 1: Mean, median and standard deviation of the duration of marriage and duration of infertility.

	N	Mean	Median	Std. deviation	Minimum	Maximum
Duration of marriage	300	6.08	5	4.3245	1	19
Duration of infertility	300	5.83	5	4.4607	1	19

Diagnosis

In the present study, 41% had female factor alone as causative factor, while 25% had male factor alone. There were 9% couple with combined factor and 25% with unexplained infertility.

In females, polycystic ovarian syndrome (PCOS) was the most common, about 25.6% of the cases, and tubal factor in 13.3%.

In males, oligozoospermia was the commonest abnormality accounting for 20.3%.

Table 2: The distribution of various diagnoses.

Diagnosis	Diagnosis	Valid %
In female		
Decreased ovarian reserve	7	2.3
Endometrial polyp	10	3.3
Endometriosis	8	2.6
Fibroid uterus	8	2.6
Male factor alone	74	24.6
PCOS	77	25.6
Tubal factor	40	13.3
Unexplained	76	25.3
Total	300	100
In male		
NIL	197	65.6
Asthenoteratozoospermia	13	4.3
Asthenozoospermia	10	3.3
Azoospermia	8	2.6
Oligozoospermia	61	20.3
Teratozoospermia	11	3.6
Total	300	100

Treatment history

More than half the women had undergone ovulation induction (52%), while 38% of women had undergone intrauterine insemination and only 10% women had already undergone invitro fertiliztion. Majority did not have any medical co-morbidity. Among females, hypothyroidism seen in 13.6%, hypertension 3% and hyperprolactinemia 2.6%. Among males, dyslipidemia accounted for 4% followed by diabetes 3.3% and hypertension 2.6%. Majority, 76% did not have any surgical history. 7.6% had undergone non gynecological surgeries like appendectomy, haemorrhoidectomy, tonsillectomy and hernia repair, Laparoscopic ovarian cystectomy and ovarian drilling were common surgeries

Lifestyle

Among women 59% performed only household chores, while 17% led a dynamic lifestyle, and others led moderate and sedentary lifestyle 12% each. 40% of men led a dynamic life, while 25% led sedentary and 35% led a moderate lifestyle.

BMI

In this study overweight was more prevalent in males and obesity was more prevalent in females. While 64% women had normal BMI, 22% were overweight, and 14% were obese. 54% of men had normal BMI, 35% were overweight and 11% were obese.

In this study, 93% women and 73% men did not have any addictive habits.

23% women and 4% men suffered psychological trauma in the past due to death of a family member. 4% already treated for depression or other psychiatric problem at some point in their life.

Table 3: Mean, median and standard deviation of various responses in psychological evaluation test questionnaire.

Questionnaire	N	Mean	Median	Std. deviation	Minimum	Maximum
Irritated	300	2.45	3	0.995	1	4
Social discomfort	300	2.83	3	1.151	1	4
Avoids social gatherings	300	2.82	3	1.246	1	4
Failed period and stress	300	3.44	4	0.842	1	4
Sex life and stress	300	2.04	1	1.328	1	4
Work affected	300	1.83	1	1.032	1	4
Self esteem	300	1.98	1	1.202	1	4
Afraid	300	2.66	3	1.043	1	4
Indequacy	300	1.61	1	0.748	1	4
Relationship with partner	300	1.17	1	0.585	1	4
Stay alone	300	2.28	3	1.07	1	4
Mind distraction	300	3.02	3	1.05	1	4
Friend/relative becomes pregnant	300	2.05	2	0.806	1	3
Go crazy without pregnancy	300	1.58	1	0.887	1	4
Tachycardia, SOB	300	1.33	1	0.55	1	3
Pet score	300	33.09	36	9.026	16	53

Table 4: Correlation of husband support and stress.

Stress			Not stressed	Stressed	Total
Husband	Abusive	Count	0	6	6
		% within stress	0.0	2.9	2.0
	Supportive	Count	90	204	294
		% within stress	100.0	97.1	98.0
Total		Count	90	210	300
		% within stress	100.0%	100.0	100.0

Table 5: Correlation of parent support and stress.

Stress			Not stressed	Stressed	Total
Parents	Indifferent	Count	4	38	42
		% within stress	4.4	18.1	14.0
	Supportive	Count	86	172	258
		% within stress	95.5	81.9	86.0
Total		Count	90	210	300
		% within stress	100.0%	100.0	100.0

Psychological evaluation test questionnaire

Based on the psychological evaluation test questionnaire, patients were asked about the frequency of the below mentioned feelings. They were scored from 1 to 4, where 1 meant never/rarely and 4 meant always. In the present study we find higher scores for failed period and stress, mind distraction, avoiding social gatherings and social discomfort (Table 3).

In this study we report the prevalence of psychosocial stress to be 70%.

Correlation of husband support with stress

98% of women had supportive husbands, and 2% had abusive husbands. 2.9% of the stressed and none of the non-stressed women had abusive husbands. But the correlation was not found to be statistically significant, perhaps because most women with abusive husbands do not desire children and hence do not seek help for infertility (Table 4).

Correlation of parent support with stress

Parents of 86% women were supportive and 14% were indifferent, 18.1% of the stressed and 4.45 of the non-stressed had indifferent parents while 81.9% of the stressed and 95.5% of the non-stressed had supportive parents. The difference was found to be statistically significant suggesting that lack of support from parents increases infertility specific stress considerably.

Correlation of support from in-laws with stress

72% of in-laws were supportive, 14% were indifferent and 14% were abusive. 17.6% of the stressed, and 5.5% of the non-stressed had abusive in-laws, while 18.1% of stressed and 4.4% of the non-stressed had indifferent ones. But 90% of the non-stressed and 64.3% of stressed women had supportive in-laws. The difference was found to be statistically significant suggesting that support from in-laws can decrease stress considerably in infertile population.

While 36.1% of the stressed and 72.2% of the non-stressed had supportive neighbours. The difference was found to be statistically significant. 69% women did not experience any form of social abuse, where as 29% experienced verbal abuse and 2% experienced physical abuse.

26.6% of the stressed and 7.7% of the non-stressed reported a poor quality of life. The difference was found to be statistically significant.

Majority of the women (51%) had moderate work load, 37% had less work load, and 12% had more work load. The difference was found to be statistically significant suggesting that work load contributes to stress significantly, and decreasing workload helps in decreasing infertility specific stress. Peace of mind was not affected in 32.9% stressed and 86.7% non-stressed women.

All patients reported doctors to be supportive, 90% women reported nurses to be supportive but 10% reported indifference.

While 80% report no change in partner's behavior, 16% report a positive change (like he cares more) and 4% report a negative change (husband himself feeling more stressed or being indifferent). The difference was statistically significant suggesting that negative change in the behavior of partner increases stress.

28.1% of the stressed 7.8% of the non-stressed reported a decrease in coital frequency.

Majority of the women (82%) reported desire of parenthood as the main reason for wanting a child, while 8% reported continuation of progeny, 7.6% reported future security and 2.3% reported social obligation as their main reason. Those with causes other than desire for parenthood seemed to be associated with increased stress which is statistically significant.

In the present study, 19.5% of the stressed and 7.7% of the non-stressed had suicidal tendency. The difference was found to be statistically significant.

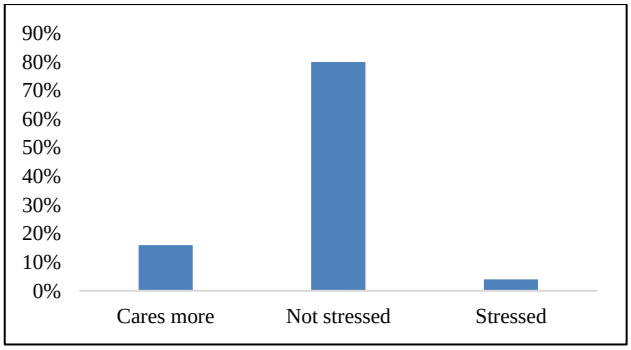

Figure 1: Change in partner's behavior in stressed and non-stressed.

Table 6: Correlation of main reason for wanting child and stress.

Stress			Not stressed	Stressed	Total
Main reason for wanting child	Continuation of progeny	Count	0	24	24
		% within stress	0.0	11.4	8.0
	Desire of parenthood	Count	84	162	246
		% within stress	93.3	77.1	82.0
	Future security	Count	6	17	23
		% within stress	6.7	8.1	7.6
	Social obligation	Count	0	7	7
		% within stress	0.0	3.3	2.3
Total		Count	90	210	300
		% within stress	100.0%	100.0	100.0

Table 7: Binary logistic regression coding of variables.

Categorical variables coding		Frequency	Parameter coding		
			(1)	(2)	(3)
Main reason for wanting child	Continuation of progeny	24	0.000	0.000	0.000
	Desire of parenthood	246	1.000	0.000	0.000
	Future security	23	0.000	1.000	0.000
	Social obligation	7	0.000	0.000	1.000
Guilty	Rarely	234	0.000	0.000	
	Sometimes	53	1.000	0.000	
	Often	13	0.000	1.000	
Work Load	Less	111	0.000	0.000	
	Moderate	153	1.000	0.000	
	More	36	0.000	1.000	
	No	207	0.000	0.000	
Social abuse	Physical	6	1.000	0.000	
	Verbal	87	0.000	1.000	
	Rarely	93	0.000	0.000	
Depression	Sometimes	133	1.000	0.000	
	Often	74	0.000	1.000	
	Rarely	66	0.000	0.000	
Anxiety	Sometimes	150	1.000	0.000	
	Often	84	0.000	1.000	
	Rarely	198	0.000	0.000	
Embarrassment	Sometimes	72	1.000	0.000	
	Often	30	0.000	1.000	
Quality of life	Good	231	0.000	0.000	
	Ok	6	1.000	0.000	
	Poor	63	0.000	1.000	

Continued.

Categorical variables coding		Frequency	Parameter coding		
			(1)	(2)	(3)
Change in partner's behavior	Cares more	48	0.000	0.000	
	No	240	1.000	0.000	
	Stressed	12	0.000	1.000	
Mutual understanding	Good	282	0.000	0.000	
	Average	5	1.000	0.000	
	Bad	13	0.000	1.000	
Frequency	Less	66	0.000	0.000	
	More	159	1.000	0.000	
	Not altered	75	0.000	1.000	
Spontaneity	Less	87	0.000	0.000	
	More	141	1.000	0.000	
	Not altered	72	0.000	1.000	
Interest	Less	105	0.000	0.000	
	More	127	1.000	0.000	
	Not altered	68	0.000	1.000	
In laws	Supportive	216	0.000	0.000	
	Abusive	42	1.000	0.000	
	Indifferent	42	0.000	1.000	
Friends	Supportive	201	0.000		
	Indifferent	99	1.000		
Neighbours	Supportive	141	0.000		
	Indifferent	159	1.000		
Nurses	Supportive	270	0.000		
	Indifferent	30	1.000		
Parents	Supportive	258	0.000		
	Indifferent	42	1.000		
Procedure and stress	No	105	0.000		
	Yes	195	1.000		
Peace of mind	Not affected	147	0.000		
	Affected	153	1.000		
Professional stress	Absent	264	0.000		
	Present	36	1.000		
Suicidal tendency	No	252	0.000		
	Yes	48	1.000		
Self confidence	Not affected	215	0.000		
	Affected	85	1.000		
Concentration	Not affected	226	0.000		
	Affected	74	1.000		
Memory	Not affected	280	0.000		
	Affected	20	1.000		
Husband	Supportive	294	0.000		
	Abusive	6	1.000		

Counselling

Only 29% of women said a separate psychological counselor would be necessary to help women overcome stress, and that doctor's counselling would suffice.

Adoption

53% of women accepted the idea of adoption, while 39% did not. For 6% women the idea was personally acceptable to her but not in her family, while for 2% women adoption was not personally acceptable but accepted in family.

DISCUSSION

The prevalence of infertility related stress is found to be 70% in the present study. This is similar to Yusuf et al which was 69%.[7] The prevalence of psychosocial stress in various studies is outlined in the Table 8.

Various studies including Al-Yazori et al and Mousavi et al have indicated that social support has a great impact on

mental health and that it has both direct and indirect effect on infertility related stress.[10,11]

Table 8: Prevalence of psychosocial stress in various studies.

Study	Prevalence of infertility related stress (%)
Patel et al[7]	80
Yusuf et al[8]	69
Sujatha et al[9]	95.1
Present study	70

In the present study, 98% of women had supportive husbands, and 2% had abusive husbands. 2.9% of the stressed and none of the non-stressed women had abusive husbands. The correlation is not found to be statistically significant. This in in contradiction with Martins et al where low partner support was found to be significantly associated with stress.[12] This may be because, the number of abusive husbands in the present study was very less. Perhaps this is due to increasing husband support these days in comparison with olden days where more men were abusive and blamed their wives for infertility. Moreover, most women with abusive husbands do not desire children and hence do not seek treatment for infertility and some infertile women hesitate to reveal the abusive nature of their husband.

In present study, 81.9% of the stressed and 95.5% of the non-stressed had supportive parents. The difference was found to be statistically significant suggesting positive correlation. Martins et al in their study indicated that there is a negative correlation between family support and infertility related stress.[13] Whereas, in the study conducted by Hassan et al, parents support was insignificantly related to psychosocial stress.[14]

In the present study, 90% of the non-stressed and 64.3% of stressed women had supportive in-laws. Support from in-laws can decrease stress considerably which is in concurrence with Hassan et al.[14]

In present study, 65% of stressed women and 71% of non-stressed women had supportive friends and more patients with indifferent friends were stressed, the difference is not statistically significant. This result is in concurrence with Martins et al and Hassan et al [13,14]

The support from neighbours decreases stress considerably in infertility patients. This is in contrary to the finding in Hassan et al.[14]

In present study, 26.6% of the stressed and 7.7% of the non-stressed reported a poor quality of life. The difference was found to be statistically significant. There are no studies which correlated quality of life with infertility related stress, though Namdar et al in their study reported that the total QOL scores had maximum correlation with general health questionnaire (GHQ) anxiety. They reported quite positive, positive, neutral, and negative specific QOL of infertile women in 2.8%, 49.3%, 47.9%, and 0% individuals respectively.[15] Thus, infertility specific stress affects the quality of life of the patients.

Profession per se is not the only factor for work load and women should introspect further before sacrificing their jobs. On the other hand, we have women with financial insecurities who are forced to work more and increased workload is imposed upon them.

Depression is a gripping problem in the present situation and infertility contributes a big share.

Present study showed that 91.4% of the stressed and all the non-stressed women had good mutual understanding while 6.2% of the stressed reported bad understanding. Lack of mutual understanding is a significant predictor of stress which is in concurrence with Hassan et al.[14] In the study by Merwe et al, significant correlations were found between infertility related stress and the four measured aspects of marital relationship, i.e. quality of communication, sexual satisfaction, intimacy and overall dyadic adjustments.[16] It is not an understatement when people say good mutual understanding between the couple can take them par all the obstacles.

In the present study, majority (71%) felt no need for a separate counsellor and that doctor's counselling would suffice. This emphasizes that the doctor-patient relationship plays an integral role in early identification, timely intervention and reduction in the stress of the patient.

Infertility in the second most populous country of India is aptly termed as barrenness amidst plenty. While there are numerous orphan and abandoned kids out there deprived of parental love, we have infertile couple ardently waiting to experience parenthood. Only when these two ends meet, there can be a solution to this problem. The main reasons given by those unwilling to adopt in the study by Adewunmi et al were culture (78.3%) and family constraints (13.45%).[17] Creating awareness and promoting adoption has to happen to meet these ends.

In this study, binary logistic regression analysis suggests that though these factors are significantly associated with psychosocial stress in primary infertile population, none of the factors independently cause stress but is a result of all these put together. We believe that infertility related stress has to be tackled from all aspects and such studies will pave way for better understanding and strategies

CONCLUSION

We conclude that this study implicates the burden of psychosocial stress in primary infertility. The prevalence of psychosocial stress was 70% in our study. Lack of

social support. Increased work load, poor quality of life, lack of peace of mind, decreased memory and self-confidence are significantly associated with infertility specific stress. Stressed couple feel depressed, anxious, embarrassed and guilty more often than those who are not stressed.

Addressing these issues by counselling will not only achieve fertility but also results in improved personality.

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