



Effectiveness of Comprehensive Self-Care Supervised Intervention Package on Lifestyle Factors in Primary Infertile Women Visiting Infertility Centres at Selected Hospitals in Goa: A Pilot Study

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Abstract

Background: Infertility is a crucial reproductive health problem affecting women physically, socially, psychologically and emotionally. Lifestyle factors such as nutrition, physical activity, sleep and healthy behaviours play a crucial role to improve the fertility outcomes. Structured comprehensive self-care interventions may improve lifestyle practices among infertile women and enhance their overall reproductive health.

Objective: This study aims to evaluate the effectiveness of a structured comprehensive self-care supervised intervention package on lifestyle factors among primary infertile women attending infertility centres.

Methods: A randomized controlled pilot study was conducted among 20 primary infertile women attending infertility centres in Goa. Using envelop method participants were randomly allocated into intervention (n=10) and control (n=10) groups. The intervention group received a structured comprehensive self-care supervised intervention package, while the control group received routine care on consultation which included advice on maintaining a healthy lifestyle. Lifestyle factors were assessed using a validated self-structured Lifestyle Assessment Inventory before and after 30 days of intervention. Data analysis was done using descriptive and inferential statistics.

Results: Before intervention, all participants (100%) in both experimental and control groups had average lifestyle scores. Following the intervention, 80% of women in the intervention group achieved good lifestyle scores, whereas all participants in the control group remained in the average category. The mean post-test lifestyle score in the intervention group was significantly higher than that of the control group (Mean=63.3, t=23.87, p<0.001). Within-group analysis also demonstrated a statistically significant improvement in lifestyle scores among the intervention group (Mean=92, t=25.56, p<0.001).

Conclusion: The structured comprehensive self-care supervised intervention package was highly effective in improving lifestyle factors among primary infertile women. By including such interventions into infertility management programmes may improve health-promoting behaviours and potentially enhance fertility outcomes.

Keywords: Primary infertility, lifestyle factors, self-care intervention, women, pilot study

Introduction

Pregnancy and motherhood are considered important milestones in the lives of women of reproductive age and are often associated with fulfilment, happiness, and family integration. The inability to conceive can therefore be a distressing experience, affecting a woman's identity, and psychological well-being.¹ According to the World Health Organization (WHO), primary infertility refers as a disease of reproductive system where the women is unable to conceive after 12 months or more of regular unprotected sexual intercourse and is among the most commonly reported infertility conditions worldwide.²

Infertility is a reproductive health condition in which the causes are not limited to one gender and may involve factors affecting both partners. Female infertility is associated with irregular or absent ovulation, tubal pathology, uterine abnormalities, endometriosis, and hormonal imbalances.³ Advancing maternal age is often associated with gradual decline in both the quantity and quality of eggs, affecting women's fertility potential and the likelihood of conception.⁴

Women experiencing infertility often report feelings of inadequacy, social isolation, and reduced quality of life.⁵ Health related activities individuals engage in and the decisions they make have a substantial impact on their lifestyle factors and health outcomes.⁶ Lifestyle factors comprises of behavioural and environmental practices that can be modified and play a significant role in contributing individuals overall health status and fertility potential.⁷

Unhealthy behaviours, including smoking, alcohol consumption, inadequate nutrition, obesity, physical inactivity, and chronic psychological stress, have been linked to reduced fertility.⁸ Conversely, healthy nutrition, regular physical activity, stress reduction, and appropriate self-care practices can improve reproductive health and fertility outcomes.⁹ Recent evidence highlights that lifestyle interventions may benefit not only women

experiencing infertility but also those at risk of developing fertility problems. Therefore, identifying and addressing these modifiable factors can facilitate evidence-based interventions aimed at optimizing fertility.¹⁰ Considering the modifiable nature of lifestyle factors, structured self-care interventions may provide an effective strategy for promoting healthy behaviors among infertile women.¹¹

Objectives

To evaluate the effect of a structured comprehensive self-care supervised intervention package on lifestyle factors among primary infertile women in terms of differences between pre-test and post-test lifestyle factor scores.

Methodology

An evaluative study was conducted using single-blind randomized control trial design. The study was conducted on 20 primary infertile women (10 experimental 10 control) who were visiting infertility clinic at Sub District Hospital Ponda Goa. Simple random sampling by envelope method was used for the selection of sample. Data was collected using self-structured lifestyle assessment inventory. The domains were divided into five categories viz; diet, physical activity, sleep & rest, weight and addiction. The maximum score for structured lifestyle assessment was 135. A score of “1” was given to very rarely, score “2” was given to rarely, score “3” to undecided, score of “4” to often and score of “5” to very often. There are total of 27 questions in the self-structured lifestyle inventory assessment. The collected data were analysed by using descriptive and inferential statistics.

Results

Table I: Description of Socio Demographic Characteristics

Sample characteristics	Intervention group (n=10)		Control group (n=10)	
	Frequency (f)	percentage (%)	Frequency (f)	Percentage (%)
1. Age in years				
22-25	1	10	0	0
26-30	4	40	4	40
31-35	5	50	6	60
2. Religion				
Hindu	5	50	5	50
Christian	2	20	1	10
Muslim	3	30	4	40
3. Education				
Secondary	1	10	1	10
HSES	3	30	1	10
Graduate	5	50	6	60
Postgraduate & above	1	10	2	20
4. Occupation				
Private	3	30	6	60
Government	3	30	2	20
House wife	4	40	2	20
5. Family type				
Nuclear	6	60	7	70
Joint	3	30	3	30
Extended	1	10	-	-
6. Area of residence				
Rural	1	10	2	20
Urban	9	90	8	80
7. Income				
15001-20000	2	20	1	10
20001 & above	8	80	9	90

Majority of participants were aged 31–35 years in both groups (Intervention: 50%, Control: 60%). Hinduism was the most common religion in both groups (50% each), followed by Christianity and Muslim, showing similar religious distribution. Most participants were graduates (Intervention: 50%, Control: 60%), indicating a relatively high educational status. A higher proportion of housewives were in the intervention group (40%), while the control group mainly comprised privately employed participants (60%); government employment was comparable in both groups. Majority belonged to nuclear families (Intervention: 60%, Control: 70%). Most participants resided in

urban areas (Intervention: 90%, Control: 80%). Majority reported a monthly family income of ₹20,000 and above (Intervention: 80%, Control: 90%), indicating higher socioeconomic status.

Table 2: Description of lifestyle assessment inventory scores among primary infertile women
n =10+10=20

Lifestyle assessment scores	Intervention group (n=10)		Control group (n=10)	
	Pretest	Posttest	Pretest	Posttest
Poor	00	00	00	00
Average	10	02	10	10
Good	0	08	00	00

At pretest, all participants in both the intervention group (100%) and control group (100%) had average lifestyle assessment scores. At post-test, 80% of women in the intervention group achieved good lifestyle scores and 20% remained in the average category, whereas all participants in the control group continued to have average scores.

Table 3: Effectiveness of Structured Comprehensive Self Care Supervised Intervention Package on lifestyle factors n =10+10=20

Lifestyle factor scores	Pretest		Posttest	
	Mean	SD	Mean	SD
Intervention group	63.3	2.67	92	1.89
Control Group	60	3.58	60.1	3.47

The mean lifestyle factor scores in the intervention group increased from 63.3 ± 2.67 during the pretest to 92.0 ± 1.89 in the post-test, indicating a substantial improvement following the intervention. In contrast, the control group showed almost no change, with mean scores increasing marginally from 60.0 ± 3.58 to 60.1 ± 3.47 . These findings suggest that the intervention was effective in improving lifestyle factors among primary infertile women.

TABLE 4: Difference Between Post Test life style factor scores n= 10+10=20

Variable	Group	Between groups			Within groups		
		Mean	T value (df)	p Value	Mean	T value (df)	p Value
Lifestyle factors	Interventional	63.3	23.87	<0.001	92	25.56	<0.001
	Control						

P<0.05 *significant

The independent t-test revealed a highly significant difference between the experimental and control groups in post-test of lifestyle factors ($p < 0.001$), indicating the effectiveness of the intervention.

Discussion

The findings of the present study showed that the Structured Comprehensive Self-Care Supervised Intervention Package significantly improved lifestyle factors among primary infertile women. Following the intervention, 80% of participants in the intervention group attained good lifestyle scores, and the mean lifestyle factor score increased from 63.3 ± 2.67 to 92.0 ± 1.89 , whereas the control group showed no meaningful improvement.

Similarly, the findings are supported by a randomized controlled trial study conducted by Hamzehgardeshi et al. (2024), which evaluated the effect of social network-based motivational interviewing among infertile women with polycystic ovary syndrome. The study demonstrated significant improvements in health-promoting behaviours and quality of life among women receiving the intervention compared with the control group, highlighting the effectiveness of structured behavioural and self-care interventions in promoting healthier lifestyles among infertile women.¹²

Similar findings were observed in a systematic review and meta-analysis by Sustarsic et al. (2023) stated that lifestyle interventions involving dietary modification, physical activity, and behavioural counselling positively influenced health behaviours and reproductive health outcomes among overweight and obese infertile women.¹³

Therefore, the findings of the present study are consistent with existing evidence indicating that structured lifestyle and self-care interventions can effectively enhance healthy behaviours among infertile women.

Conclusion

The Structured Comprehensive Self-Care Supervised Intervention Package was effective in significantly improving lifestyle factors among primary infertile women. Interventional group demonstrated marked improvements in lifestyle assessment scores compared to the control group, demonstrating that structured self-care education and supervision as an effective supportive strategy in fertility care among women with primary infertility.

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