Training of women self-help groups against reproductive tract infections - A pilot study

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ABSTRACT

Reproductive tract infections (RTIs) are silent epidemics and put a heavy toll on women in developing countries. Women, because of their ignorance and socio-cultural inhibitions, hardly seek treatment for RTIs. Women self-help groups (SHGs) if adequately trained, can play an active role in creating awareness and promote healthy behaviours among women. The present study aimed to evaluate the Effectiveness of STAR (Self-help group Training to Alleviate Reproductive tract infection) program on knowledge, practices, skills and health-seeking behaviours on RTIs among self-help group women in the reproductive age group. A quasi-experimental (non-equivalent control group) study with repeated follow-up was done among 63 women belonging to the selected SHG units. Women in the intervention group (n=33) underwent a training program on RTIs and had regular monthly follow-up for 6months, and the comparison group (n=30) only had a routine follow-up. Post-test observations were conducted at the end of three months and six months. The data were analyzed using repeated-measures ANOVA using SPSS package version 16. There was a significant difference in the knowledge, practice, skill and health-seeking behaviour scores at different points of time (P<0.001). However, the between-group pairwise comparison revealed that the training program was effective in improving the mean knowledge (P=0.001), skill (P=0.014) and health-seeking behaviour (P=0.034) scores and had no effect on the practice score (P=0.74). The STAR program was found to be effective in improving the knowledge, skill and health-seeking behaviours of the self-help group women.

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INTRODUCTION

Infections of the reproductive tract are caused by microbes commonly found there or introduced from outside during intercourse or medical procedures. It can also arise from unhygienic genital, menstrual and sexual practices (National AIDS Control Organisation, 2012). Prevention and control of reproductive tract infections (RTIs) and sexually transmitted infections (STIs), including HIV/AIDS, is one of the significant elements of reproductive health care (WHO, 1995).

According to WHO, per day, more than 1 million cur-

able cases of RTIs/ STIs occur globally, of which 80% of the annual cases occur in developing countries and about 79 million cases in India (WHO, 2018). According to 2011 census, 48% of the Indian population were women (Office of the Registrar General and Census Commissioner India, 2011) and 39.2% of them had one or more RTIs. The District Level Household Survey (DLHS) -4 revealed that 10.5% of the women in Kerala have symptoms of RTI/STI, whereas, in Ernakulam district, the prevalence is 13.3% (Ministry of Health and Family Welfare, 2013).

Failure to diagnose and treat RTI/STI in women in the reproductive years can lead to pelvic inflammatory disease, infertility, ectopic pregnancy, foetal wastage and neonatal infections (National AIDS Control Organisation, 2012). In 2016, the WHO published its Global Health Sector Strategy on STIs (2016–2021), to end RTI/STI epidemics (WHO, 2018). The syndromic approach is considered as the cornerstone in managing STI/RTI in India and the National AIDS Control Organization (NACO) is providing free standardized treatment based on syndromic management through the designated STI/RTI clinics (Pandit and Chhaya, 2018). The government has taken several efforts to train health professionals. Still, the success will depend on the ability of the people to early recognize the symptoms, present to health facilities and comply with treatment and behaviour change (Gupta et al., 2015). The DLHS findings revealed that only 33.3% of women in India and 48% of women in Kerala had heard of RTI/STI. The awareness level of the ever-married women in Ernakulam district has reduced from 88.2% (DLHS 3) to 31.3% (DLHS 4) which is alarming (Ministry of Health and Family Welfare, 2013).Only 3.2% of the women in South Kerala had received an appropriate treatment for RTI/STI (Jayapalan, 2016).

The Global Health Sector Strategy envisaged that working through partnerships and engaging and empowering people most affected by RTIs/STIs will ensure universal access to sexual and reproductive health services (Sustainable Developmental Goal 3.7) (WHO, 2018). People involvement can be achieved through the self-help groups (SHG), which are voluntary unions of peers, formed for mutual assistance and to promote community cohesion. The SHG initiative of the Government of Kerala called the 'Kudumbashree' empowers the women and plays a vital role in poverty eradication and health promotion (Kudumbashree, 2020). Despite their complete range contact with the women in the community, they are less utilized for empowering the women on reproductive health issues. Godbole

et al. has found that through the training in syndromic approach the health workers at the most peripheral level can identify and refer the cases of RTI/STI (Godbole et al., 2013).

Only a few research studies had addressed the effectiveness of an intervention program on RTIs. Even though training of SHGs on RTIs in Karnataka showed significant improvement in their level of awareness (29 % to 99%; P<0.01), menstrual hygiene practices (P<0.05), and health-seeking behaviour (60.6% to 99.5%; P<0.01) (Gupta et al., 2015; Reshmi et al., 2015) it was not tried up in other settings. The skill component and the genital and sexual hygiene practices were not well addressed in it.

Hence the researchers felt the need to develop a new training program on RTIs, which is tapered for SHG women and to test its effectiveness so that it can be further utilized in more wider SHG settings. The trained SHGs can be utilized to sensitize other women in the community, thereby reducing the disease burden. Considering this, the pilot study was conducted to evaluate the Effectiveness of STAR (Self-help group Training to Alleviate Reproductive tract infection) program on knowledge, practices, skills and health-seeking behaviours on RTIs among self-help group women in the reproductive age group in the Kanayannur taluk of Ernakulam district in Kerala.

MATERIALS AND METHODS

Ethics

Ethical clearance was obtained from the institutional ethics committee. Formal administrative permission was obtained from the State Director and District Coordinator, Kudumbashree mission. Written informed consent was obtained from the women who participated in the study.

Study design

A quantitative approach was adopted for the study. A quasi-experimental non-equivalent control group design with repeated follow-ups was used.

Setting and sampling

The setting of the study was selected area development societies (ADS- ward level administrative organization of Kudumbashree mission) in Kanayannur taluk of Ernakulam district. The Kanayannur taluk is one of the oldest taluks in Ernakulam district. It has seven panchayats in the rural sector and three municipalities and one corporation in the urban sector. In order to ensure the rigour and validity of the design, the Kanayan-

nur taluk was stratified as rural and urban areas. One panchayat (rural) and one municipality (urban) was selected using disproportionate stratified random sampling technique, and two ADS each were randomly selected from it. Then one ADS each from the panchayat and municipality was randomly allotted to the intervention and comparison group. The women were screened for eligibility, and a separate sampling frame was made for both the groups and a random selection using lottery method was done to select the subjects. The eligibility criteria for the study were: women enrolled in SHGs under the selected ADS, belonging to reproductive age group (18-49years), having a regular menstrual cycle, married and cohabiting with their husband and self-report to have any one of the signs of RTIs as per NACO guidelines (National AIDS Control Organisation, 2012). Those who were on current treatment for RTIs, having missed periods, undergone hysterectomy or having cancer, psychiatric or neurological disorders, or having menstrual irregularities were excluded from the study.

Sample size

The sample size was calculated for the primary outcome (knowledge) variable using the formula,

$$n = \frac{2\sigma^2(Z_{1-\alpha/2} + Z_{1-\beta})^2}{d^2}$$

With 5% level of significance, 80% power, a clinically significant difference(d) of 3 and variance (σ) =3.71 (Chauhan et al., 2014); the minimum estimated sample size in each group was 23.98. Expecting 20% sample attrition the sample size was adjusted to 29. The Browne's (Browne, 1995) recommendation of at least 30 subjects or greater in each arm for the pilot study was also considered, and the final sample size was fixed to 35 in each arm.

Development of the training program and the evaluation tools

The investigator developed the structured training program- STAR after extensive literature review, discussion with experts in the field and incorporating the components of the TIDieR (Template for Intervention Description and Replication) checklist (Hoffmann et al., 2014). The aim was to enhance the perspective and knowledge of SHG women on RTIs so that they can prevent its occurrence, identify the signs and symptoms early and can obtain appropriate treatment. Fifteen experts in the field validated the intervention. The content validity index (CVI) of the intervention was one, showing that the STAR program had excellent coverage of the relevant content.

The total duration was two hours with four sessions – reproductive tract infections, preventive practices, identification of the signs of the RTIs and communication with the partner. The methodology used were lecture, group discussion, case narrations, role play, demonstration of male condom usage and power point presentations. An information booklet covering the contents of the training program was also prepared.

A symptom screening checklist on RTIs developed on the basis of NACO guidelines on syndromic management was used to enrol the women to the study. The experts validated it, and the scale CVI was 0.925. The baseline variables were assessed using a socio-demographic proforma with a scale CVI 0.943. The outcome variables knowledge, practice, skill and health-seeking behaviours on RTIs were measured by investigator developed structured tools.

The knowledge questionnaire had 30 multiple choice questions and the areas covered were meaning, mode of transmission, causes and risk factors, diagnosis, signs and symptoms, complications, prevention and management. Self-reported preventive practices on RTIs was assessed using a three-point rating scale with 28 items covering the three domains- genital hygiene, menstrual hygiene and sexual hygiene. The skill of the women to correctly identify the signs and symptoms of RTIs, to make decisions on management and partner communication was measured by using case vignettes. Four case vignettes were developed following the discussion with experts in the field, and each vignette was followed by five open-ended questions which were scored against an expected response checklist. Health seeking behaviour questionnaire had ten items on the pattern in the utilization of health care services. The experts validated the tools, and the reliability coefficient of each was established using Cronbach's alpha. The scale CVI of the knowledge questionnaire was 0.9054, rating scale for assessing the practice was 0.9664, skill assessment questionnaire was 0.982, and health-seeking behaviour questionnaire was 0.946. The reliability coefficients of the knowledge, practice, skill and health-seeking behaviour questionnaires were 0.82, 0.78, 0.78 and 0.87 respectively.

Program Implementation

The period of the study was from 17/06/19 to 31/12/2019. The researcher met the subjects during their monthly ADS meeting. Initially, 134 women were screened in the intervention group, and 122 were screened in the comparison group, and 43 in the intervention and 41 in the comparison group met the inclusion criteria and were enrolled to the study. The symptomatic women were referred to the district RTI/STI clinic. A random selection

using lottery method was made to select 35 subjects in both the groups. The selected women were met during their weekly neighbourhood meeting, and baseline assessment was done after obtaining the informed consent. The intervention group was divided into four small groups, with eight to nine members in each based on their convenience in attending the program. The training program was given to the intervention group, and an information booklet on the topic was also distributed. The participants in both groups were encouraged to contact the investigator with any questions or concerns through a 24-hour telephone number. The investigator visited the women in the intervention group once a month during their neighbourhood meetings to discuss their concerns on RTIs. Two post-test observations were made in both groups at the end of the third and sixth month. Seven women lost their follow-up at various stages, and the final sample size became 33 in the intervention and 30 in the comparison group. An information booklet was distributed to the comparison group at the end of the study.

Statistical Analysis

The data were entered into Microsoft Excel sheet and was analyzed using SPSS package version 16. Homogeneity of the groups in terms of the socio-personal variables was assessed, and both the groups were found to be homogenous in terms of all the variables (P > 0.05). Shapiro-Wilk test was used to check the normality of the data. All the study variables, except health-seeking behaviour, followed a normal distribution (P<0.05). The similarity between the groups in terms of the pre-test score of the knowledge, practice and skill variables were assessed using independent 't' test, and the health-seeking behaviour was assessed using the Mann-Whitney U test. A significant difference was found for the practice scores (P=0.005). Repeated measures ANOVA was used to evaluate the effectiveness of the training program as it is a robust test irrespective of the normality of the data studied (Blanca *et al.*, 2017).

RESULTS AND DISCUSSION

The mean age of the women was 37.5 ± 6.3 years. About 61.9% (39) were Hindus, and 34.9% (22) of them were Christians. Among them, 36.5% (23) were educated above graduate level, whereas 34.9% (22) had only completed their high school level. Most, 69.8% (44) of them were from nuclear families, and 61.9% (39) of them were below the poverty line (annual income below INR 27,000/-). More than half, 53.9% (34) of them were unemployed, and 30.2% (19) of them were employed in the private sector. The mean age at which they got married was 23.2 ± 2.3 years. The average duration of marital life was 14.2 ± 6.9 years. Nearly half, 49.2% (31) had given birth through caesarean section, whereas 44.4% (28) had undergone normal delivery. More than half, 52.4% (33) of them had two children. The other baseline variables are shown in Table 1.

Repeated measures ANOVA was performed to check for any significant difference in the average knowledge, practice, skill and health-seeking behaviours regarding RTIs at various time points between experimental and comparison groups. It was observed that there was a significant difference in the mean knowledge, practice, skill and health-seeking behaviours scores at different points of time (P<0.001, Table 2).

The Bonferroni pairwise comparison between the experimental and the comparison groups showed a significant statistical difference with the knowledge scores (P=0.001), skill scores (P=0.014) and the health-seeking behaviour scores (P=0.034). But the between-group comparison revealed that there was no significant statistical difference (P=0.74) between the practice scores of the experiment and comparison groups.

Hence the training program was found to be effective in improving the knowledge, skill and health-seeking behaviour scores of the self-help group women and had no significant effect on the practice score.

This study was conducted to impart adequate knowledge to the women in the SHGs regarding RTIs, as there is enough evidence that it will have an impact on their practice, skill and health-seeking behaviours. Health behaviour change interventions among SHGs in Uttar Pradesh and Bihar showed significant improvements in the maternal and newborn health practices and health-seeking behaviours (Hazra *et al.*, 2019; Saggurti *et al.*, 2018).

The findings of the present study revealed significant improvements in the knowledge, skill and health-seeking behaviours after the training program. Even though the practice scores of the self-help group women varied significantly across different periods, it didn't have a significant difference in comparison with the control group. This can be attributed to a significant difference in the pre-test score between the groups. The findings of a study to empower the SHGs against RTI/STI in Karnataka was similar to the present study which had a significant improvement in the level of awareness about RTI/STI (p<0.01), the capability to identify the symptoms of RTI/STI and health-seeking behaviours (p<0.01) (Gupta *et al.*, 2015).

Table 1: Baseline variables of the women participated in the study (n=63)

Variables	Frequency	Percentage
Obstetric/gynecologic risk factors		
- Abortion	5	7.9
- Intra uterine death/ still birth	1	1.6
- Intrauterine contraceptives	2	3.2
- Dilatation and curettage	7	11.1
- Tubal pregnancy	2	3.2
- Not applicable	46	73
Type of menstrual absorbent used		
- Cloth napkins	11	17.5
- Sanitary pad	44	69.8
- Both cloth napkins and sanitary pad	8	12.7
Type of household toilet used		
- common toilet outside the house	20	31.7
- common toilet inside the house	18	28.6
- toilet attached to own bedroom	25	39.7
Type of contraceptive method practised (in the last 1yr)		
- None	40	63.5
- Condom	7	11.1
- Oral contraceptive pills (OCP)	1	1.6
- Intrauterine Devices (IUD)	1	1.6
- Male Sterilization	6	9.5
- Female sterilization	8	12.7

Table 2: Comparison of the change in the outcome variables among the women who participated in the study (n=63)

Variable	Group	Mean and SD			F value	P-value
		Pre-test	Post-test 1	Post-test 2		
Knowledge	Intervention	11.8 (4.8)	17.61 (3.9)	18.91(3.6)	64.7	P<0.001*
	Comparison	12.13 (5.2)	12.23 (5.4)	12.07 (4.5)		
Practice	Intervention	41.91 (5.9)	47.76 (4.7)	50.73 (3.4)	62.8	P<0.001*
	Comparison	45.9 (4.9)	47.27 (5.1)	46.13 (4.2)		
Skill	Intervention	6.33 (5.3)	13.33 (3.1)	14.18 (2.1)	37.8	P<0.001*
	Comparison	8.9 (5.9)	8.5 (5.3)	8.97 (4.3)		
Health seeking behaviour	Intervention	0.3 (0.9)	1.9 (3.1)	4.8 (2.8)	13.5	P<0.001*
	Comparison	1 (1.7)	0.47 (1.3)	2.8 (2.9)		

*Significant

Another study among the SHGs in Karnataka showed significant improvement in the practice scores, which was not congruent with the findings of the present study (Reshmi *et al.*, 2015).

In a similar study conducted in Udupi, the mean knowledge score of the SHG women had improved from 12.88 to 26.88, and the program was found to be effective (p<0.01) (Lobo, 2013). There was a significant improvement in the knowledge scores of the women after the teaching program in Uttarakhand (13.25 to 16.93) (Chauhan *et al.*, 2014).

The skill scores of the SHG women improved significantly, which was similar to the findings of a training program conducted in Vellore among village health aides. The findings of the study showed that the mean percentage of the pre-test and post-test knowledge scores of the health aides were 62% and 73.9% and the practical scores were 34.2% and 58.1%. Their skill in identifying the RTIs improved significantly after the training program (Godbole *et al.*, 2013). Another study on the effectiveness of a health education program in Pune showed sig-

nificant improvement in the knowledge and practice scores of the women regarding RTIs in the intervention group when compared with the control group (Shelke, 2016).

The impact of the training programme on health-seeking behaviour on RTIs among the self -help group women in Karnataka showed a significant (p<0.01) improvement in the intervention group (57.7% to 91.4%) when compared with the comparison group (60.5% to 55.2%) which was similar to the findings of the present study (Gupta *et al.*, 2015).

The SHG members, because of their proximity and good rapport with the women in the community, will be able to impart this knowledge to others. They can motivate women to seek health care, especially the rural poor who have poor access to services. Health programs combined with microfinance based SHGs showed significant evidence with improved health behaviours in MCH care and sanitation (Saha *et al.*, 2015).

As this was a pilot study, the sample size was only 63. The training program was given in small groups, which made them free to express their views and ensured fair participation. There was less chance of contamination of data even in the absence of true randomization as both the groups were separated geographically. One of the limitations of the study was that it measured only expressed practice, skill and health-seeking behaviours.

The findings of this study will be useful to those interested in the area of RTIs and those working with SHGs. The incorporation of the health programs with SHGs can be adapted to the broader government system, as no national health program in our country is utilizing the SHG in its implementation strategy.

CONCLUSIONS

Most of the RTIs can be prevented and treated, but women in many parts of the world have no access to appropriate information and services. Self-help group members will be able to act as a driving force to impart awareness which will help to secure the reproductive health of the women. The evidence from this study shows that the training programs will significantly improve the knowledge, skill and health-seeking behaviours of the SHG women. Large scale studies with similar intervention strategies will have a positive impact on the reduction of RTIs and improved health-seeking among women in developing countries.

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Conflict of Interest

The authors declare that they have no conflict of interest.

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