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EFFECTIVENESS OF PERINATAL HEALTH COUNSELLING ON SPECIFIC PREGNANCY OUTCOMEOF MOTHERS WITH HIV

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Motherhood is of great importance to many, and perhaps most, to HIV positive women.HIV in pregnancy is a bio-psychosocial phenomenon, as its impact is not only limited to the immune system, but also on the psychological functioning, culture, religion and other social factors[1]. Globally, an estimated 1.3 million women and girls living with HIV become pregnant each year. In the absence of intervention, the rate of transmission of HIV from a mother living with HIV to her child during pregnancy, labour, delivery or breastfeeding range from 15-45%[2]. The Government of India is committed to achieving the Sustainable Development Goal of 'ending the AIDS epidemic as a public health threat by 2030.' The National AIDS and STD Control Programme (NACP) phase V (2021–26) lays down the clear pathway for achieving these goals, by building on the gains achieved during earlier programme phases, advancing bestpractices, and adopting innovations tailored to respond to the diverse localneeds across the country, in an evidence informed manner[3]. India is committed to achieving the goal of Elimination of Mother to Child Transmission (EMTCT)of HIV by 2025 under the NACP[4].

There is a strong focus of PPTCT programs on the use of drugs to prevent HIV, with little importance given to the social and behavioural aspects of such intervention[5]. Pregnancy and the postpartum period represent important opportunities to intervene to address the health of HIV positive women. Counselling can motivate the women during pregnancy and in the postpartum period to change

behaviours that may negatively affect their health and the health of their infants. This study was undertaken to assess the effectiveness of a specific perinatal health counselling on the specific pregnancy outcome of mothers with HIV in terms of attitude towards pregnancy with HIV, coping withpregnancy and HIV, knowledge on neonatal wellbeing and perceived postnatal quality of life.

Objectives

The main objective of the study was to assess the effectiveness of specific perinatal health counselling on the specific pregnancy outcome of mothers with HIV attending the prevention of parent to child transmission(PPTCT) centre of Coimbatore, in terms of attitude towards pregnancy with HIV, coping with pregnancy and HIV, knowledge on neonatal wellbeing and perceived postnatal quality of life.

The conceptual framework for this study is an integration of Quality caring model by Joanne Duffy, and Trans-theoretical model of behaviour change by James Prochaska.

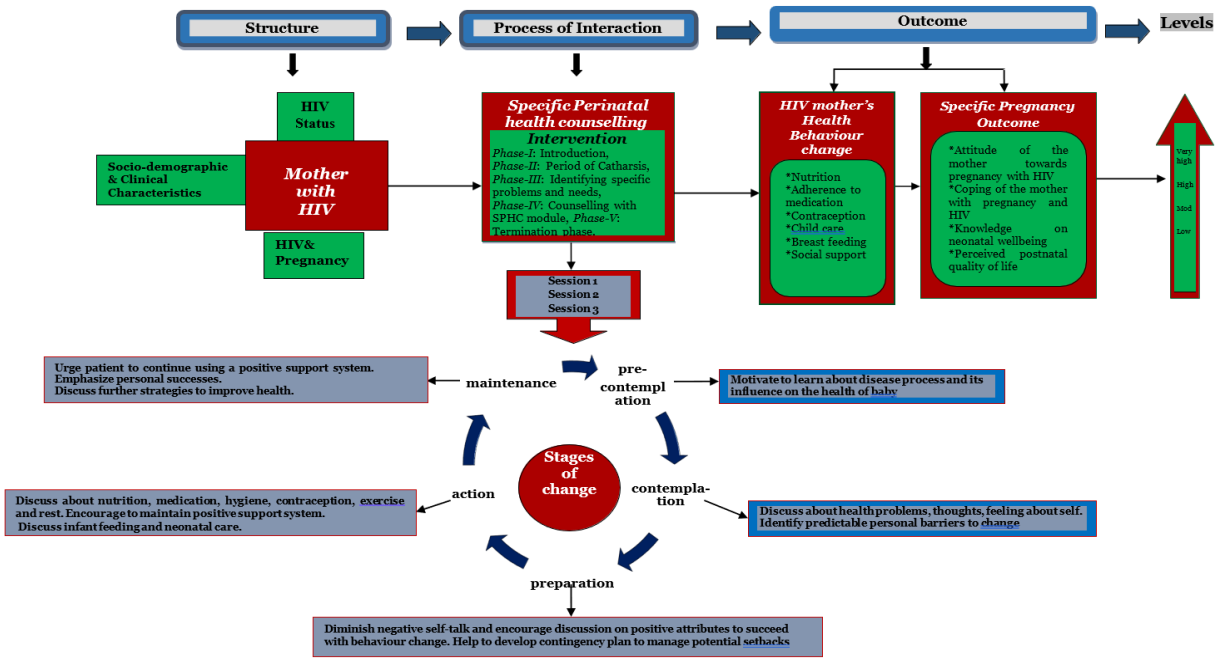

Figure : Conceptual framework of the study (based on Quality-Caring Model by Joanne Duffy, 2003& Trans-theoretical Model of Behaviour Change by James Prochaska, 1977)

Materials and Methods

Mixed method approach with control group post-test-only design was adopted in the study. The qualitative and quantitative components in this study were performed sequentially, and **emphasis was placed on the quantitative component**. Qualitative exploration was involved in developing a quantitative instrument -The Pregnancy Outcome of Mothers with HIV (PROMO-HIV)scale which was tested and found to have a strong internal consistency ($\alpha = 0.87$**).**

In the process of questionnaire development, in-depth qualitative semi structuredindividual interviews were held with a senior representative of the district AIDS prevention and control unit at the Coimbatore district directorate of health services and three HIV counsellors, two HIV positive antenatal and two HIV positive postnatal mothers in the PPTCT centres of Coimbatore. All the interviews were digitally recorded, transcribed in detail and the transcripts checked against the recordings.

Coding helped in understanding the meaning of the data. After the interviews, there was a large amount of data and groups of codes that captured the psychosocial issues which affect mothers with HIV during perinatal period. The content was analysed by three experts.

By comparing codes and data, a set of central focussed codes were produced. The emerging sets of concepts were related to one another. The four major categories found were attitude towards pregnancy with HIV, coping with pregnancy and HIV, neonatal wellbeing and postnatal quality of

life which were the themes for further developing a questionnaire. Each major category had three associated sub- categories with a total of twelve sub-categories. Major results of the coding analysis are presented below.

Major Category	**Associated Categories**
Attitude towards pregnancy with HIV	Acceptance of pregnancy with HIV Concern for wellbeing of self Concern for wellbeing of baby
Coping with pregnancy and HIV	General health Medication side effects Disclosure& family support
Neonatal wellbeing	Physical wellbeing Mental health Social functioning
Postnatal quality of life	Neonatal care Feeding options HIV medication

A list of items was developed from the analysed themes. A questionnaire was drafted using the developed items. The questionnaire was then forwarded to a panelof experts who were asked to comment on the representativeness and relevance of each item in the questionnaire.

The revised questionnaire consisted of 55 items within four subscales which measured the four components (attitude of the mother towards pregnancy with HIV, coping of the mother with pregnancy and HIV, knowledge on neonatal wellbeing and perceived postnatal quality of life).

The questionnaire was content validated and each item in the questionnaire was evaluated against the set criteria for appropriateness,clarity, measurability and relevance. Suggestions given by the experts were incorporated in the tool in consultation with the guide. The PROMO-HIV scale had a strong internal consistency with a Cronbach alpha of 0.87(α=0.87).

The researcher developed instrument was used to assess the specific pregnancyoutcome of mothers with HIV after providing specific perinatal health counselling (SPHC) which is a counselling intervention facilitated by the investigator and rendered to mothers with HIV attending the PPTCT. An intervention module (SPHC module titled "You can have a healthy pregnancy ifyou are HIV positive") was developed. Content validity index showed 100% agreement for the intervention module. Intervention program was rendered threetimes in 3 sessions. Each session of the intervention progressed through five phases. Phase-I: Introduction, Phase-II: Period of Catharsis, Phase-III: Identifying specific problems and needs, Phase-IV: Counselling with SPHC module, Phase-V: Termination phase. The study was conducted after obtaining permission from the Program Officer, TamilNadu AIDS Control Society (TANSACS), Coimbatore District. A consecutive sample of 40 mothers with HIV (20 mothers in the intervention group and 20 mothers in the control group) were recruited for the study.

Results

The intervention and control group were comparable and were found to be homogenous in terms of their socio-demographic characteristics, general clinical profile and specific clinical characteristics.

The mean age of the sample subjects was 27 years. Majority i.e. 9(45%) of the mothers in both the groups were in the age group of 26-30. In theintervention group 10(50%) mothers had high school education and 12(60%) mothers in the control group had high school education. In the intervention group 14(70%) mothers were from rural area compared to 9(45%) mothers inthe control group. About 19(95%) mothers in the intervention group and 20(100%) mothers in the control group belonged to Hindu religion. The socio- economic status of 10(50%) mothers in the intervention group and 11(55%) mothers in the control group was very poor. About 20(100%) in the intervention group and 18(90%) in the control group were engaged in work. All the womenin both the groups were married and one woman in the intervention group was a widow.

Table: Distribution of HIV positive mothers by socio-demographiccharacteristics

Socio-demographic characteristics		Intervention		Control		χ^2	p value
		f	%	f	%		
Age	16-20	2	10.0	1	5.0	3.091	0.543
	21-25	5	25.0	6	30.0		
	26-30	9	45.0	9	45.0		
	31-35	2	10.0	4	20.0		
	36-40	2	10.0	0	0.0		
Education	None	0	0.0	1	5.0	3.515	0.621
	1-4	2	10.0	2	10.0		
	5-7	4	20.0	2	10.0		
	7-9	10	50.0	12	60.0		
	Secondary School	4	20.0	2	10.0		
	College	0	0.0	1	5.0		
Residence	Urban	6	30.0	11	55.0	2.558	0.110
	Rural	14	70.0	9	45.0		
Religion	Hindu	19	95.0	20	100.0	1.026	0.311
	Christian	1	5.0	0	0		
	Muslim	0	0.0	0	0		
	Others	0	0.0	0	0		
Income	< 3000	10	50.0	11	55.0	2.104	0.551
	3000-5000	8	40.0	6	30.0		
	5000-7000	1	5.0	1	5.0		
	7000-10000	1	5.0	1	5.0		
	> 10000	0	0	1	5.0		
Occupation	Working full time	20	100.0	18	90.0	2.105	0.147
	Working part time	0	0	2	10.0		
	Unemployed	0	0	0	0		
	Others	0	0	0	0		
Marital Status	Single	0	0	0	0	1.026	0.311
	Married	19	95.0	20	100.0		
	Separated	0	0	0	0		
	Divorced	0	0	0	0		
	Widowed	1	5.0	0	0		

In terms of general clinical profile, in the intervention group 5(25%) mothers had HIV duration of 6-12 months and were diagnosed with HIV during their regular antenatal check up, 5(25%) mothers had been diagnosed and living with AIDS for 1-2 years, 1(5%) mother had been living with HIV for 2-4 years, 3(15%) mothers had HIV history of 4-6 years and 6(30%) mothers had a greater than 6 year history of living with HIV. In the control group 7(35%) mothers had HIV duration of 6-12 months and were diagnosed with HIV during their regular antenatal check up, 4(20%) mothers had been diagnosed and living with AIDS for 1-2 years, 4(20%) mothers had been living with HIV for 2-4 years, 3(15%) mothers had HIV history of 4-6 years and 2(10%) mothers had a greater than 6 year history of living with HIV.

Gestational age of majority 10(50%) of the mothers in both the groups atthe time of recruitment for the study was 16–20 weeks. About 13(65%) mothers in the intervention group were pregnant for the first time (primigravida) and 7(35%) mothers had more than one pregnancy (multigravida). In the control group 10(50%) mothers were pregnant for the first time, and 10(50%) mothers had more than one pregnancy. Route of infection for majority of the mothers, 17(85%) in the intervention group and 19(95%) in the control group was their husband. Majority of the husbands, 18(90%) in the intervention group and19(95%) in the control group were HIV positive. Majority of the mothers 18(90%) in both the groups reported disclosing their HIV status to their husband, 8(40%) mothers in

the intervention group and 10(50%) mothers in the control group reported disclosing to both husband and parents.

Table: Distribution of HIV positive mothers by general clinical profile

General Clinical profile		Intervention (n=20)		Control (n=20)		χ^2	p value
		f	%	f	%		
HIV: Duration of Illness	6months-1year	5	25	7	35	6.244	0.396
	1-2 years	5	25	4	20		
	2-4 years	1	5	4	20		
	4-6 years	3	15	3	15		
	6-8years	2	10	2	10		
	8-10years	2	10	0	0		
	10-12years	2	10	0	0		
Gestational age at the time of recruitment	12-16 weeks	6	30	1	5	5.495	0.064
	16-20 weeks	10	50	10	50		
	20-24 weeks	4	20	9	45		
Pregnancy	Primigravida	13	65	10	50	0.921	0.337
	Multigravida	7	35	10	50		
Route Of Infection	Husband	17	85	19	95	0.229	0.633
	Others	3	15	1	5		
Spouse Infection Status	Infected	18	90	19	95	1.027	0.598
	Not infected	1	5	0	0		
	Don't know	1	5	1	5		
Disclosure	Husband	18	90	18	90	2.446	0.485
	Husband &Parents	8	40	10	50		
	Husband&Other family members	5	25	2	10		
	No one	1	5	0	0		
Previous Hospitalization	Hospitalized	9	45	12	60	0.902	0.342
	Not hospitalized	11	55	8	40		

Assessment of specific clinical characteristics showed that in the intervention group 7(35%) mothers underwent caesarean section and 13(65%) mothers had normal vaginal delivery. In the control group 10(50%) mothers underwent caesarean section and 10(50%) mothers had normal vaginal delivery.
In the intervention group 6(30%) newborns had a birth weight of less than 2.5 kilograms and 14(70%) had a birth weight of greater than 2.5 kilograms. In the control group 9(45%) newborns had a birth weight of less than 2.5 kilogramsand 11(55%) had a birth weight of greater than 2.5 kilograms. About8(40%) mothers in the intervention group had CD4 count between 400 to 600 and 12(60%) of the mothers had CD4 count above 600. In the control group 1(5%) mother had CD4 count less than 400, and 13(65%) mothers had CD4 count between 400 to 600, and 6(30%) mothers had CD4 count above 600. HIV status of the infant tested at 6 weeks postpartum showed that all the babies were HIV negative.

Table: Distribution of HIV positive mothers according to specific clinicalcharacteristics in the intervention group and control group.

Specific Clinical characteristics		Intervention (n=20)		Control (n=20)		χ^2	p value
		f	%	f	%		
Delivery Type	Caesarean Section	7	35.0	10	50.0	0.921	0.337
	Normal vaginal Delivery	13	65.0	10	50.0		
Birth weight of newborn	< 2.5 Kg	6	30.0	9	45.0	0.960	0.327
	> 2.5 Kg	14	70.0	11	55.0		
CD4 Count	Low	0	0	1	5.0	4.190	0.123
	Medium	8	40.0	13	65.0		
	High	12	60.0	6	30.0		
HIV status of the baby at 6wks	HIV Negative	20	100	20	100	-	-

The comparison of specific pregnancy outcome components showedthatthe mean scores of the intervention group were higher than the control group and were found to be statistically significant(p=0.001).

Table: Overall assessment of specific pregnancy outcome components in theintervention group and control group of HIV positive mothers (N=40).

Specific pregnancy outcome component		Intervention group n=20		Control Group n=20		χ^2	p value
		f	%	f	%		
Attitude towards pregnancy with HIV	Unfavourable	6	30	12	60	15.824	0.001**
	Favourable	14	70	8	40		
Coping with pregnancy and HIV	Maladaptive coping	7	35	13	65	11.905	0.001*
	Adaptive coping	13	65	7	35		
Knowledge on neonatal wellbeing	Low	0	0	5	25	32.400	0.001**
	Moderate	7	35	13	65		
	High	13	65	1	5		
Perceived postnatal quality of life	Poor	1	5	3	15	15.000	0.001**
	Moderate	6	30	11	55		
	Good	13	65	6	30		
Overall specific pregnancy outcome	Low	0	0	9	45	18.530	0.001**
	Moderate	8	40	10	50		
	High	12	60	1	5		
	Very high	0	0	0	0		

** p=0.001

Discussion

Specific perinatal health counselling intervention was effective in improving the specific pregnancy outcome of HIV positive mothers. The results of the study support the hypothesis that specific perinatal counselling influences the specific pregnancy outcome of mothers with HIV. Overall mean scores for specific pregnancy outcome were higher in the intervention group, which was statistically significant (p=0.001).

Therefore, strengthening the counseling being provided during antenatal clinic visits of mothers in the health institutions and providing reinforcing counseling to the HIV positive mothers in the maternity ward will be helpful in improving the specific pregnancy outcome of HIV positive mothers.

Qualitative methods were used to examine pregnancy decision-making among 56 HIV-positive women in four U.S. cities. Biomedical, individual and socio-cultural themes were analyzed in groups of women, categorized by their pregnancy experiences and intentions[6]. Those who became pregnant or desired children after their diagnosis seemed more confident in the efficacy of risk reduction strategies. HIV-positive women may benefit from counselling interventions that are sensitive to factors that influence infected women's pregnancy decisions.

A randomized controlled trial to evaluate the effect of an interactive group counseling intervention for HIV-positive women on prenatal depression anddisclosure of HIV status by comparing a six-week structured nurse-midwife facilitatedpsychosocial support group with standard care in Tanzania, indicated reductions in thelevel of depressive symptoms comparable with major depressive disorder (MDD) for HIV-positive pregnant women participating in a group counseling intervention. Although the psychosocial group counseling did not significantly increase disclosure rates, an improvement in the level of personal satisfaction resulting from disclosure was associated with the intervention. This suggests that the counseling sessions have likely reduced the burden of depression and structured

psychosocial support should beoffered to HIV-positive pregnant women to prevent poor mental health outcomes[7], promote early childhood development, and potentially impact HIV-related disease outcomes in the long term.

Findings of a pilot randomized trial to assess the effectiveness of a counseling intervention (Asha-Life) to improve antiretroviral therapy adherence of rural women living with AIDS in India compared to that of a usual care group revealed a distinctly greater improvement in ART adherence among the intervention participants comparedto those in the usual care group with significant effect for the intervention program ($p < .001$)[8].

In a study in Africa an enhanced counselling intervention for HIV positive pregnant women was evaluated using a randomized control trial with participants randomly assigned to two arms: the intervention arm, wherein participants received anenhanced counselling intervention; control arm, in which participants received standard of care counselling. The proportion of HIV-positive women who testedpositive for a sexually transmitted infection at fourteen weeks follow-up was lesser in the treatment arm compared to the control arm[9].

Conclusion

Specific perinatal health counselling intervention was effective in improving specific pregnancy outcome (attitude towards pregnancy with HIV, coping with pregnancy and HIV, knowledge on neonatal wellbeing and perceived postnatal quality of life). Overall mean scores for specific pregnancy outcome were higher inthe intervention group, which was statistically significant ($p=0.001$). The results ofthe study supported the hypothesis that specific perinatal counselling influences the specific pregnancy outcome of mothers with HIV. Similar findings have been reported in studies which suggest that the counselling sessions have reduced theburden of depression and structured psychosocial support should be offered to HIV- positive pregnant women to prevent poor mental health outcomes, promote early childhood development, and potentially impact HIV-related disease outcomes in the long term. The findings of this study provides basis for incorporation of psychosocial care into routine antenatal care of mothers with HIV.