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Effect of a self-instructional module on the child rearing knowledge and practice of women with epilepsy

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ABSTRACT

Women with epilepsy (WWE) have poorer knowledge and skill in child rearing than women without epilepsy.

Purpose: To evaluate the effect of a self-instructional module (SIM) on the child rearing knowledge (CRK) and practice (CRP) of WWE and developmental outcome of their babies.

Methods: One hundred women in first trimester of pregnancy that were enrolled in to the Kerala Registry of Epilepsy and Pregnancy and consenting to participate were given a self instructional module (SIM) or a comparator booklet by random concealed allocation. Their child rearing knowledge (CRK) was assessed by a standardized protocol at entry (first trimester) and at 3–4 months postpartum. Their child rearing practice (CRP) was evaluated in third postpartum month. The developmental outcome of babies was assessed at 1 year of age as per registry protocol.

Results: Eighty eight women completed this 1 year study. The CRK score was significantly higher ($p = .034$) for the intervention group (32.91 ± 5) when compared to the comparator group (30.61 ± 5) However, a corresponding improvement in CRP score was not observed for the former. Developmental outcome of 68 babies showed a positive weak correlation between CRP and developmental quotient both mental and motor. The intervention group demonstrated significant increase in their CRK. Nevertheless the results did not indicate a significant improvement in the CRP.

Conclusion: The SIM improved the CRK of WWE. Nevertheless, the child rearing practices did not show corresponding improvement.

1. Introduction

About 1.3 million women in India have epilepsy.[1] Several studies have addressed the maternal and fetal outcome of women with epilepsy (WWE).[2–10] However, not many of them have adequately or systematically addressed the child caring and child rearing issues of WWE. Children of WWE are at risk of developmental delay, low IQ,[11,12] low linguistic achievements,[13] and poor scholastic performance.[14] Possessing sufficient child rearing knowledge and following healthy child rearing practices are critically important for the optimum growth and development of children. Previous observational studies have shown that, WWE have poor child rearing knowledge and practice.[15,16] A knowledge gap exists in this area due to lack of specific studies targeting this issue.[17,18] In order to increase the child rearing knowledge and healthy practices of WWE during pregnancy, we have developed a self-instructional module (SIM) titled 'You and your baby – conception, labor, and infant care: a self-instructional module for women with epilepsy'. This SIM was designed to promote self-learning by pregnant WWE for safe pregnancy, confinement and optimum child rearing during infancy. The objective of this paper is to evaluate the effect of the SIM on the child rearing knowledge (CRK), child rearing practice (CRP) and infant outcome in WWE.

2. Materials and methods

2.1. Setting and sampling

The study was conducted among the WWE who were registered in the Kerala registry of epilepsy and pregnancy (KREP) as described elsewhere.[16,19,20] This registry enrolls WWE in the preconception phase or during pregnancy and continues to

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monitor them as per protocol till their children are 12 years old. All newborns are examined at birth, at 3 months of age (physical examination, echocardiography, and ultrasonography of the abdomen) and at 1 year (motor and mental developmental quotient by Developmental assessment scale for Indian infants). The maternal and infant characteristics including the motor and mental development quotient of the children assessed at 1 year of age[11] were abstracted from the clinical records. The KREP, operational since 1998, has more than 2000 entries. The registry has the approval of the Institutional Ethics Committee and the consent from each person at the time of enrollment in the registry.

One of the investigators screened the new enrollment to this registry and identified eligible WWE who satisfied the selection criteria for this study. The inclusion criteria were: WWE should be in first trimester of pregnancy and should be able to read and comprehend the local language (Malayalam) in which the SIM was prepared. WWE who were in the preconception period, advanced stage of pregnancy (second or third trimester) or having a repeat pregnancy during the study period, were not included.

2.2. Instruments

A pre-tested questionnaire was used to evaluate the child rearing knowledge of all the participants. They were then given a sealed book packet containing either the test SIM or a comparator booklet in a blinded manner. The SIM, a 56 page 1/8 dummy size booklet titled 'You and Your baby – conception, labor, and infant care: a self-instructional module for women with epilepsy' was written in simple question answer format, in local language (Malayalam). It was specifically developed for pregnant WWE and had validated contents. It contained two sections, each with six units, targeted toward antenatal care and infant care, respectively. The section on antenatal care consisted of the following units: regular medical check-up, balanced diet, self-care, minor disorders of pregnancy, toward hospital for delivery, and, postnatal care and contraception. The section on infant care contained the following units: growth and development, successful breastfeeding, complementary feeding, accidents and emergencies, immunization and protection, and, mother infant bonding and infant stimulation. A self-test ('check your knowledge') with answer keys was included at the end of each section. It was well illustrated with pictures and tables in order to increase the readability. A bookmarker with the unit titles and page numbers was also provided along with the SIM.

The comparator booklet was an existing health education booklet on epilepsy in vernacular language in the Department of Neurology, Sree Chitra Tirunal Institute for Medical Sciences and Technology, Trivandrum, Kerala. This booklet was having a similar size to SIM, but its contents were in text book format and mostly related to epilepsy, clinical manifestations, medical management and first aid during a seizure. Pregnancy related matters were limited to only one page.

A total of 100 booklets (fifty SIM and fifty comparator booklets on epilepsy) were used for this trial. Computer generated random numbers (1–100) were assigned to 100 identical opaque brown, sealed envelopes each containing one booklet. These envelopes were arranged serially from 1 to 100 and then handed over to the WWE according to the order of enrolment. They were instructed to open the packet and read the book at their convenience, at home. We adopted a pretest – posttest control group design for the present study. Each WWE was evaluated at enrolment for baseline knowledge and at 3 months postpartum for knowledge and practice regarding child care with the previously validated scales.[21] The Baby outcomes at birth and at three to 4 months were assessed using validated 'Baby outcome scale': a scale which included outcome at birth (7 items, score = 15), and outcome at three to 4 months (8 items, score = 12). A structured interview to determine the utility of the SIM/comparator booklet on epilepsy was conducted at 3 months.

At the end of the study, the code was opened and the intervention group (those who received the SIM) and the control group (those who received the comparator booklet) were identified.

2.3. Statistics

The statistical analyses were performed using Statistical Package for Social Sciences (SPSS) for windows version 14.0. Continuous variables were analyzed using student's *t*-tests while categorical variables were analyzed using Chi square tests. The level of significance was kept as $p \leq 0.05$. Pearson's correlation was used to detect agreement between child rearing knowledge and practice scores.

3. Results

Out of the 100 women who were recruited over 3 years, 88 WWE (43 in the intervention and 45 in the control group) completed this prospective study. Sixty-eight infants (33 in the intervention and 35 in the control group) were followed up at 1 year and the mental and motor development quotients were taken from the records.

The WWE in the intervention and control group were comparable with regard to socio-demographic variables like age, education, occupation, religion, place of residence, type of family, the presence of elder women in the family, reading habits of health related periodicals, and standard of living index. The groups were also comparable with regard to age of onset of epilepsy, duration and type of epilepsy, seizure type, and antiepileptic drug (AED) therapy. However, their parity statuses were significantly different (Table 1).

3.1. Effect of the SIM on CRK and CRP

The baseline child rearing knowledge scores of both the intervention and control group of WWE were similar (23.96 ± 6.4 vs 23.1 ± 6.2; $p = 0.5$) in all the child rearing domains. The mean post-test scores for child rearing knowledge (CRK) have improved significantly in the intervention group than the control group (32.91 ± 5 vs 30.61 ± 5; $p = .034$) (Table 2). However we did not find a significant improvement in the mean child rearing practice (CRP) of WWE in the intervention group compared to the control group ($p = 0.33$).

3.2. Baby outcome

The outcome scores of infants in the intervention and control group of WWE were similar at birth (14.23 ± 1.3 vs 13.87 ± 1.3; $p = 0.19$) and at three to 4 months of age (10.35 ± 1.9 vs 10.38 ± 1.8; $p = 0.94$). The motor and mental developmental quotient (DQ) at 1 year also was comparable in both the groups ($p = 0.64$, $p = 0.78$) (Table 2). While a correlation was noted between CRP and motor developmental quotient ($r = 0.221$; $p = 0.07$) as well as CRP and mental developmental quotient ($r = 0.216$; $p = 0.08$), it was not statistically significant.

3.3. Attitude of WWE toward the SIM/comparator booklet

The participants displayed a significant difference in reading of the SIM or the comparator booklet on epilepsy completely. Their opinion regarding the utility and benefit of these booklets also varied significantly (Table 3). More number of women in the