



## Assess the Effectiveness of Integrated Health Education Section on Knowledge Regarding Sickle Cell Disease during Pregnancy in Tribal Area, Vadodara District

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(Received: 27 October 2023

Revised: 22 November

Accepted: 26 December)

### KEYWORDS

Assess Effectiveness, Knowledge, integrated health education section, sickle cell disease, pregnancy, tribal area.

### ABSTRACT:

**Background:** In Gujarat to incorporate Sickle cell anaemia control programme in the existing health services of State Government South Gujarat viz. Surat, Tapi, Navsari, Valsad and Dang Bharuch, Narmada, Vadodara, Panchmahal, Dahod, Sabarkantha and Banaskantha, Ahmedabad. Thus the entire tribal belt of eastern Gujarat was covered from Ambaji to Dang, which having 8912623 population the main tribes in this area are Kukna, Kolcha, Kothvadia, Bhil, Chaudhary. In Gujarat, the *Dhodia*, *Dubla*, *Gamit*, and *Naika* tribes have a high prevalence of HbS (13-31 %). More recently very extensive population surveys have been done by the Indian Red Cross Society, Gujarat State Branch where 1,68,498 tribal from 22 districts were screened and the overall prevalence of sickle cell carriers was 11.37 per cent.

**Aim and objective:** The study is aimed to assess knowledge of sickle cell disease health promotion and evaluate the effectiveness of integrated health education among pregnant women of tribal area.

**Material and Methods:** a pre test post test pre-experimental design. The study was conducted among total 100 pregnant women who affected with sickle cell disease and trait.

**Results:** The result of this study shows that in pre test, sickle cell disease and trait affected women having on average 29.36% knowledge regarding promotive measure on sickle cell and mean score was 7.34 and in post test, average 80.8% knowledge regarding sickle cell disease promotion of health and mean score was 20.2. T calculated value is 33.233 which are more than the tabulated value of 2.00 at 0.05 level of significance.

**Conclusion:** This study concluded that integrated health education section is effective tools to improve the knowledge regarding sickle cell disease during pregnancy in tribal area.

### 1. Introduction

One of the key events in life is getting pregnant and giving birth. As the woman enters a new stage of her life as a mother, it is joyful and rewarding. Every pregnancy a woman has will be unique and unusual. In order for women to have a healthy pregnancy and the best chance of having a healthy baby, the midwife is in a unique position to educate and empower them throughout the many stages of birthing. Both the mother's and the fetus's health are interdependent. A woman's body experiences intricate physiological changes during pregnancy, many of which are still poorly understood. Each system in a pregnant woman's body adjusts to meet the needs of the

developing foetus. considerable focus during pregnancy is concentrated on ensuring minimal danger during birth and ideal health for the mother and her unborn child. The goal of antenatal care is to pay close attention to a woman's and her unborn child's health requirements. However, a mother might require guidance on precisely what constitutes a healthy lifestyle for both her and her child.<sup>4</sup>

In Gujarat to incorporate Sickle cell anaemia control programme in the existing health services of State Government South Gujarat viz. Surat, Tapi, Navsari, Valsad and Dang Bharuch, Narmada, Vadodara, Panchmahal, Dahod, Sabarkantha and Banaskantha,



Ahmedabad. Thus, the entire tribal belt of eastern Gujarat was covered from Ambaji to Dang, which having

8912623 population the main tribes in this area are kukna, kolcha, kothvadia, bhil, Chaudhary.<sup>12</sup>

### Distribution of SCD in Gujarat



A single mutation in the gene that codes for the  $\beta$ -globin chain of haemoglobin, which, in the homozygous state, causes a cascade of events beginning with the polymerization of the mutant haemoglobin (HbS), is what distinguishes SCD from other forms of the disease. The clinical manifestation of SCD is a result of numerous downstream and interconnected biological processes, some of which are chronic inflammation, hypercoagulability, ischaemic injury, functional nitric oxide deficiency, endothelial, platelet, and leucocyte activation, and oxidative stress. Among the primary clinical effects of the condition are painful vaso-occlusion, chronic haemolytic anaemia, susceptibility to infections, and systemic vasculopathy.<sup>14</sup>

## 2. Aims and Objectives of the Study

To evaluate the impact of integrated health education on knowledge regarding sickle cell disease during pregnancy, by using a structured questionnaires respectively.

## 3. Methodology

**Development of tool for data collection:** The researcher prepared a Structured questionnaire is used as tool for the study regarding the knowledge on sickle cell disease during pregnancy.

**Validity of instrument:** Five experts were provided the structured tool and the integrated health education part, along with the study's goals and blueprint, in order to determine the tool's level of content validity. The experts came from the department of research in the fields of

nursing and medicine. They were asked to comment on and make recommendations regarding the applicability of the tool's items.

**Reliability:** The Gujarati and English versions of the tool were administered to six samples chosen in accordance with the predetermined criteria after receiving formal administrative approval. After being calculated, the scores were provided for statistical evaluation. The split-half method was used to establish reliability.

**Data collection procedure:** Dhiraj Hospital Vadodara district granted official authority. After selecting the samples, the study's goals were reviewed, and the chosen group's consent to participate in the study was obtained. The researcher gave the subjects assurances regarding the privacy of the information. The pre-test questionnaire was given out by the researcher herself.

**Analysis of data:** Both descriptive and inferential statistics analyzed on the basis of the objectives and hypotheses of the study. The knowledge of *sickle cell disease during pregnancy* assessed before and after the administration of *integrated health education section* would be calculated using frequency, mean, and standard deviation and inferential statistics used to analyze Paired 't' test and ANOVA test. The data was also presented graphically and in the form of table.

## 4. Result

**Section – I:** Demographic profile of participants. The sample characteristics are described in terms of frequency and percentage.



**Section – II:** Assess pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants

**Section –III:** Comparison of pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants

**Section I: Description of samples according to their selected demographic variables;-**

It describes the distribution of subjects according to age, educational qualification, occupation, family income, religion and spouse sickling status.

**Distribution of sample according to selected demographic variables (N=100)**

S. No.	Demographic Variables	Samples	
		Freq.	%
1.	Age (in years)		
a)	<20 years	24	24%
b)	20-24 years	48	48%
c)	25-29 years	23	23%
d)	>= 30 years	05	5%
2.	Education qualifications		
a)	Illiterate	01	01%
b)	Primary education	55	55%
c)	Secondary education	36	36%
d)	Graduation and above	08	08%
3.	Occupation		
a)	Housewife	21	21%
b)	Agriculture working woman	42	42%
c)	Employed woman	16	16%
d)	Labor work	21	21%
4.	Monthly income (Rs)		
a)	< 5000/monthly	41	41%
b)	5001-10000/ monthly	09	09%
c)	10001-20000/ monthly	49	49%
d)	20001 and above	01	01%
5	Religion		
a)	Hindu	95	95%
b)	Muslim	02	02%
c)	Christian	02	02%

d)	Others	01	01%
6.	Sickling status of participant		
a)	SCT	50	50%
b)	SCD	50	50%

The data shows that according to **age**, 48 (48%) participants were in the age group of 20-24 yrs, 24 (24%) were in the age group of < 20 years, 23 (23%) were in the age group of 25-29 years and 05 (5%) were in the age group of above 30 years.

In view of **education qualifications** 55(55%) participants had primary level of education, 36(36%) had secondary education, 08 (08%) had graduation and above level of education and 01 (01%) were illiterate.

In connection with **occupation**, 42 (42%) participants were Agriculture working woman, 21 (21%) were housewives, 21 (21%) were doing labor work and 16 (16%) were employed woman.

Regarding **monthly family income** 49 (49%) participants monthly family income was in between 10001 to 20000 rupees, 41 (41%) participants monthly family income was below 5000 rupees, 09 (09%) was between rupees 5001-10000/ monthly and 01 (01%) monthly family income was more than 20001 rupees.

Regarding **religion** majority of participants were 95(72%) were Hindus while 02 (02%) were Muslims, 02 (02%) were Christians and 01(01%) from other religions.

In view of Sickling status of participant, 50 (50%) had SCT while 50 (50%) had SCD.

**Distribution of sample in terms of age N=100**

Demographic Variables	Sample Group	
	Freq.	%
Age (in years)		
<20 years	24	24%
20-24 years	48	48%
25-29 years	23	23%
>= 30 years	05	5%

The data shows that according to **age**, 48 (48%) participants were in the age group of 20-24 yrs, 24 (24%) were in the age group of < 20 years, 23 (23%) were in the



age group of 25-29 years and 05 (5%) were in the age group of above 30 years.

**Distribution of sample in terms of educational status.**

N=100

Demographic Variables	Sample Group	
	Freq.	%
Education qualifications		
Illiterate	01	01%
Primary education	55	55%
Secondary education	36	36%
Graduation and above	08	08%

with regard to educational status 55(55%) participants had primary level of education, 36(36%) had secondary education, 08 (08%) had graduation and above level of education and 01 (01%) were illiterate.

**Distribution of samples in terms their occupation**

N=100

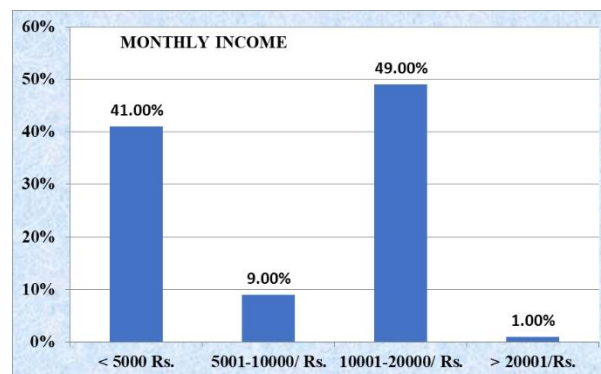
Demographic Variables	Sample Group	
	Freq.	%
Occupation		
Housewife	21	21%
Agriculture working woman	42	42%
Employed woman	16	16%
Labor work	21	21%

In connection with **occupation**, 42 (42%) participants were Agriculture working woman , 21 (21%) were housewives, 21 (21%) were doing labor work and 16 (16%) were employed woman.

**Distribution of samples in terms of monthly income of the family**

Demographic Variables	Sample Group N=100	
	Freq.	%
Monthly income (Rs)		
< 5000/monthly	41	41%
5001-10000/ monthly	09	09%
10001-20000/ monthly	49	49%
20001 and above	01	01%

Regarding **monthly family income**, 49 (49%) participants monthly family income was in between 10001 to 20000 rupees, 41 (41%) participants monthly family income was below 5000 rupees, 09 (09%) was between rupees 5001-10000/ monthly and 01 (01%) monthly family income was more than 20001 rupees.



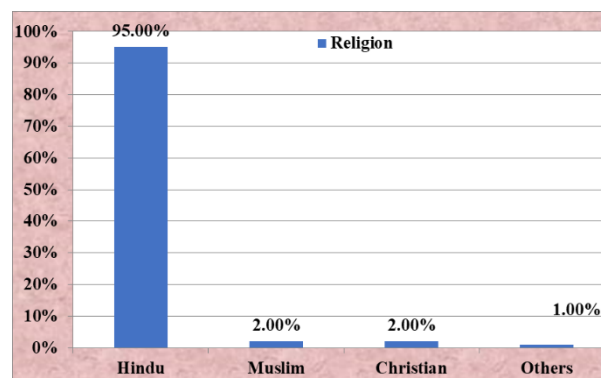
**Distribution of sample in terms monthly income of the family.**

**Distribution of samples in terms of their religion**

N=100

Demographic Variables	Sample Group	
	Freq.	%
Religion		
Hindu	95	95%
Muslim	02	02%
Christian	02	02%
Others	01	01%

As per religion, majority of subjects 95(72%) were Hindus while 02 (02%) were Muslims, 02 (02%) were Christians and 01(01%) from other religions.



**Distribution of samples in terms of their religion**



### Distribution of samples in terms of Sickling status of the participant

N=100

Demographic Variables	Sample Group	
	Freq.	%
Sickling status of participant		
SCT	50	50%
SCD	50	50%

In view of Sickling status of participant, 50 (50%) had SCT while 50 (50%) had SCD.

### SECTION – II

#### Pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants

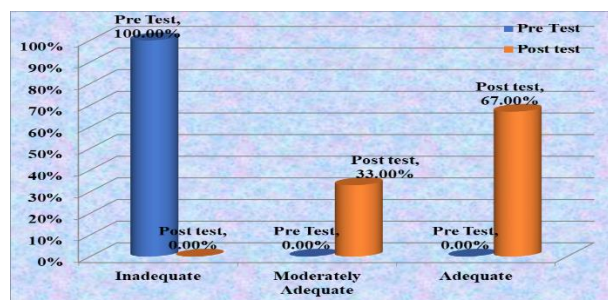
Assessment of pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants.

#### Description of samples according to their pre-test and post-test score of knowledge (N=100)

Depicts the distribution of pre – test and post – test scores of knowledge. In pre – test all of the participants 100 (100%) had inadequate knowledge level regarding sickle cell disease during pregnancy. Nobody scored Moderately adequate and adequate knowledge level in pre test.

But in post test majority 67 (67%) of the participants had adequate knowledge level and 33 (33%) had moderately adequate knowledge level regarding sickle cell disease during pregnancy.

The above finding clearly states that educational intervention has significant beneficial effect in the level of knowledge among participants.



#### Pre-test and post-test score of knowledge level regarding sickle cell disease during pregnancy among participants . (N=100)

### SECTION – III

#### Comparison of pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants

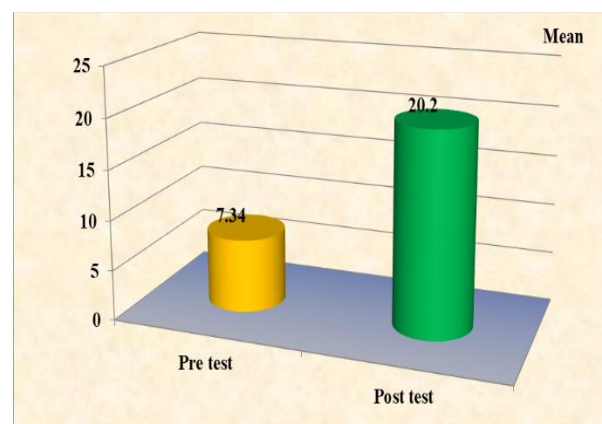
The effectiveness of educational intervention was tested by using paired ‘t’ test. Paired ‘t’ test was calculated to analyze the difference in pre and post test scores of knowledge level among participants.

#### Comparison of mean pre-test and mean post-test score of knowledge among participants (N=100)

Sr. No.	Observation	Mean	SD	Mean Difference	Paired ‘t’ value
1	Pre-test	7.34	0.9663	12.86	71.524
2	Post-test	20.2	1.620		

#### NS- Not Significant at 0.05 level

The comparison of pre – test and post – test scores of knowledge level among participants. The mean pre – test score is 7.34 and mean post – test score is 20.2, mean difference is 12.86 and the Paired ‘t’ test value was 71.524 was greater than table value (1.9842 at df=99) at .05 level of significance. It shows that there is significant difference between the pre test and post test level of knowledge regarding sickle cell disease during pregnancy among participants. **Hence hypothesis H<sub>3</sub> was accepted.**



#### Comparison of mean pre-test and mean post-test score of knowledge level among participants



## 5. Discussion

### Findings regarding comparison of pre-test and post-test score of knowledge regarding sickle cell disease during pregnancy among participants

The information related to the following study objectives and hypothesis is examined in this part.

Pregnant women will perform much better on the mean post-test than they did on the mean pre-test in terms of their understanding of sickle cell disease during pregnancy.

Using a paired 't' test, the efficacy of an educational intervention was evaluated. To examine the variation in participant knowledge levels between the pre- and post-test, a paired t test was calculated. The evaluation of participants' knowledge levels before and after testing. The mean pre-test score was 7.34, the mean post-test score was 20.2, the mean difference was 12.86, and the paired 't' test result of 71.524 was significantly higher than the table value of 1.9842 at df-99. It shows that there is significant difference between the pre test and post test level of knowledge regarding sickle cell disease during pregnancy among participants. **Hence hypothesis H<sub>3</sub> was accepted.**

Ezenwosu OU et al (2021)<sup>89</sup> in their study named "Effect of health education on knowledge and awareness of sickle cell disease among adolescents" also discovered the efficacy of educational intervention.

Asnani MR et al. (2016)<sup>90</sup> done a review that identifies significant gains in patient knowledge of sickle cell illness among carers as a result of educational programmes. Similar findings regarding the efficiency of the Parent Educational Intervention Programme (PEIP) for enhancing parental knowledge, self-efficacy, & parent perception of health-related quality of life in children with sickle cell disease using smart phone technology were also revealed by Nasiri and Yusra Sulaiman (2018)<sup>91</sup>.

Gallo AM et al.'s (2014)<sup>92</sup> study of women of reproductive age who had sickle cell disease (SCD) or the trait (SCT) indicated the efficacy of educational intervention.

## 6. Conclusion

This study concluded that integrated health education section is effective tools to improve the knowledge regarding sickle cell disease during pregnancy in tribal area.

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