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KNOWLEDGE OF TRIBAL WOMEN TOWARDS SICKLE CELL ANEMIA

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ABSTRACT

Sickle cell anemia is wide spread among tribal communities in India. A high prevalence of the sickle gene has been demonstrated in various tribal communities of Gujarat state. Tapi is tribal dominated district. The patient suffering from sickle cell anemia develops blood related complication and sickle cell disease sufferers have also shortened lifespan and poor quality of life. So to combat against this disease we need to focus on tribal population. Knowledge plays an important role for achieving desired results. Thus, the study was carried out to assess the knowledge of tribal women towards sickle cell anemia. The data was collected purposively with 100 tribal women who have positive sickle cell status. The data was collected with the help of structured interview schedule and analyzed with appropriate statistical tools. It is indicated that majority of tribal women had young aged, sickle cell trait status, married, in joint family, more than half of tribal women had education upto higher secondary level & 36.00 per cent tribal women were illiterate. Nearly half of tribal women had no any type of social participation. Majority of tribal women were not taking medical consultancy and low level of knowledge about sickle cell anemia.

Keywords*: sickle cell anemia, knowledge, sickle cell trait, sickle cell disease, tribal women, social participation, medical consultancy*

INTRODUCTION

Sickle cell anemia is one of the most common hereditary diseases worldwide, which may affect any organ or system of the human body. According to WHO, about 5% of world's population carries the gene responsible for haemoglobin disorders and about 300000 children are born worldwide with sickle cell disease every year. Sickle cell anemia is wide spread among tribal communities in India. In India the Sickle cell anemia was first detected in Veddoid tribe in Nilgiri hills of Tamilnadu, in 1952 by Lehman and Cutbush. It was later discovered in other states. The tribal population contributes 15% of the total population of Gujarat and distributed in various parts of the state. Tapi is tribal dominated district. A high prevalence of the sickle gene has been demonstrated in various tribal communities of Tapi including Gamit, Chaudhari, Konkani, Dhodia, Vasava, *etc*. The patient suffering from sickle cell anemia develops blood related complication and can be suspected due to family history or by conducting clinical examination. It results in an abnormality of the oxygen-carrying haemoglobin protein present in red blood cells. Sickle cell disease occurs when a person inherits two defective copies of each parent's haemoglobin gene. An individual with a single abnormal copy usually has no symptoms and is said to have a Sickle-cell trait. These people are called carriers, too. There may be a number of health problems such as pain attacks (sickle-cell crisis), anemia, bacterial infections and stroke. Sickle cell disease sufferers have also shortened lifespan and poor quality of life. So to combat against this hereditary disease we need to focus on this tribal population. Knowledge plays an important role for achieving desired results. Knowledge of any individual increases his/ her awareness. With this background, the present study was carried out to assess the knowledge of tribal women towards sickle cell anemia in Tapi district.

Anemia is a major public health problem worldwide. Around 2 billion people, 30% of the world'spopulation, are affected by anemia,1 and the majority of them are from the developing world.

OBJECTIVES

(1) To study the profile of respondents

(2) To study the knowledge of tribal women towards Sickle cell anemia

(3) To examine the relationship between dependent & independent variables

METHODOLOGY

An *Ex-post-facto* research design was used for this study. Dolvan block from Tapi district was selected for data collection. The data was collected purposively from 100 tribal women who have positive sickle cell status (sickle cell trait or sickle cell disease) in age group of 18 years and above. The information of tribal women with positive sickle cell status was collected from ASHA workers and Health centre. The data was collected with the help of structured interview schedule and set of 13 questions of knowledge regarding Sickle cell anemia were used. One score was given for each correct answer and zero was given for wrong answer or if no answer was given by tribal women. The data was analyzed with appropriate statistical tools such as frequency, percentage, correlation co-efficient and the level of knowledge was categorized into five categories using arbitrary method of classification *viz*, very low (0 to 20.00%), low (21.00 to 40.00%), medium(41.00 to 60.00%), high (61.00 to 80.00%) and very high (81.00%and above).

RESULTS AND DISCUSSION

Profile of respondents

The findings on the profile of respondents are presented in Table No.1 to 13.

Age

Table 1: Distribution of respondents according to their age (n=100)

Sr. No.	Age Group	Frequency	Percent
1	**Young age** (18 to 35 yrs)	58	58.00
2	**Middle age** (36 to 50 yrs)	34	34.00
3	**Old age** (above 50 yrs)	08	08.00

The data in Table 1 indicated that majority (58.00%) of tribal women belonged to young age group followed by 34.00 per cent belonged to middle age group. Only 8.00 per cent tribal women had old age group.

The probable reason for young and middle aged dominating respondents due to purposively selection of the respondents having sickle cell trait/ sickle cell disease.

Education

Table 2: Distribution of respondents according to their education (n=100)

Sr. No.	Level of education	Frequency	Percent
1	**Illiterate**	36	36.00
2	**Primary**	25	25.00
3	**Secondary**	19	19.00
4	**Higher Secondary**	12	12.00
5	**Diploma**	01	01.00
6	**Graduate**	05	05.00
7	**Post graduate**	02	02.00

The data in Table 2 revealed that 36.00 per cent tribal women were illiterate and 25.00 per cent tribal women had primary level of education followed by secondary school (19.00%) and higher secondary school (12.00%). Only 5.00 per cent tribal women had education up to graduate followed by post graduate (2.00%) and diploma (1.00%).

Nearly forty per cent of respondents had secondary to post graduate level of education. The probable reason for young aged respondents having more education due to education awareness among tribal community as well as available education facilities provided by Government of Gujarat.

Status of sickle cell anemia

Table 3: Distribution of respondents according to their status of sickle cell anemia (n=100)

Sr. No.	Types of sickle cell anemia	Frequency	Percent
1	Sickle Cell Trait (SCT)	92	92.00
2	Sickle Cell Disease (SCD)	08	08.00

The information presented in Table 3 indicated that majority of tribal women (92.00%) had Sickle Cell Trait while only 8.00 per cent tribal women had Sickle cell Disease. Gamit C. *et al,* 2014 were also supported to the present findings.

Sickle cell anemia in family

Table 4: Distribution of respondents according to their family having sickle cell anemia (n=100)

Sr. No.	Sickle cell anemia in family	Frequency	Percent
1	**Family members having Sickle Cell anemia (SCT/SCD)**	65	65.00
2	**Don't know**	35	35.00

It is evident from Table 4 that 65.00 per cent tribal women knew their family members having sickle cell anemia while 35.00 per cent tribal women did not know the sickle cell status of family.

Marital status

Table 5: Distribution of respondents according to their marital status (n=100)

Sr. No.	Categories	Frequency	Percent
1	**Unmarried**	29	29.00
2	**Married**	71	71.00

The data portrayed in Table 5 that majority of tribal women (71.00%) were married and 29.00 per cent tribal women were unmarried (single).

The probable reason for unmarried status in young aged respondents due to their continued education as well as a few young respondents had suffering from sickle cell disease.

Family Type

Table 6: Distribution of respondents according to their family type (n=100)

Sr. No.	Family Type	Frequency	Percent
1	**Joint**	93	93.00
2	**Nuclear**	07	07.00

The data in Table 6 indicated that majority (93.00%) of tribal women had joint family followed by only 07.00 per cent had nuclear family.

The great majority of respondents had joint family due to their traditional tribal culture.

Family size

Table 7: Distribution of respondents according to their family size (n=100)

Sr. No.	Categories	Frequency	Percent
1	**1 to 2 members**	06	06.00
2	**3 to 4 members**	32	32.00
3	**5 to 6 members**	38	38.00
4	**7 to 8 members**	20	20.00
5	**Above 8 members**	04	04.00

The data in Table 7 revealed that the 70.00 per cent of tribal women had 3 to 6 members in family followed by 20.00 per cent had 7 to 8 members. The 6.00 per cent and 4.00 per cent tribal women had 1 to 2 members and above 8 members in their families respectively.

It might be due to the majority (62.00 per cent) had family size above 5 members due to joint family culture as well as unaware about family planning.

Land holding

Table 8: Distribution of respondents according to their land holding (n=100)

Sr. No.	Land holding	Frequency	Percent
1	**Landless**	09	09.00
2	**Marginal** (0.01 to 1.00ha)	89	89.00
3	**Small** (1.01 to 2.00ha)	02	02.00
4	**Medium** (2.01 to 4.00 ha)	00	00.00
5	**Large** (Above 4.00 ha)	00	00.00

It is evident from Table 8 that majority (89.00%) of respondents belonged to marginal land holding category followed by 9.00 and 2.00 per cent respondents were in landless and small land holding categories respectively. None of them belonged to medium and large land holding categories.

It is evident from Table 8 that great majority (89.00%) of respondents belonged to marginal land holding category followed by 9.00 and 2.00 per cent respondents were in landless and small land holding categories respectively. None of them belonged to medium and large land holding categories.

Occupation

Table 9: Distribution of respondents according to their occupation (n=100)

Sr. No.	Categories	Frequency	Percent
1	**Housewife**	27	27.00
2	**Daily wages earner**	09	09.00
3	**Farming**	36	36.00
4	**Farming with Animal husbandry**	23	23.00
5	**Farming with service**	03	03.00
6	**Government Service**	02	02.00

The data presented in Table 9 that 36.00 per cent tribal women engaged in farming while 27.00 per cent tribal women were housewife and 23.00 per cent tribal women engaged in farming with Animal husbandry. Only 9.00, 3.00

and 2.00 per cent tribal women engaged in daily wages work, farming with service and Government service respectively.

The majority of respondents (59.00 per cent) had occupation of farming with animal husbandry. It might be due to inherited land/ farming.

Annual income of family

Table 10: Distribution of respondents according to their annual income (n=100)

Sr. No.	Annual income	Frequency	Percent
1	Below ₹ 50,000	87	87.00
2	₹50,001 to ₹ 1,00,000	12	12.00
3	₹ 1,00,001 to ₹ 1,50,000	01	01.00
4	₹ 1,50,001 to ₹ 2,00,000	00	00.00
5	Above Rs.2,00,000	00	00.00

The data in Table 10 indicated that majority (87.00%) of the respondents had annual income below ₹ 50,000 while 12.00 per cent of them had ₹ 50,001 to 1,00,000 annual income.

The data in Table 10 indicated that great majority (87.00 per cent) of the respondents had annual income below ₹ 50,000 while 12.00 per cent of them had ₹ 50,001 to 1,00,000 annual income.

Social participation

Table 11: Distribution of respondents according to their social participation (n=100)

Sr. No.	Categories	Frequency	Percent
1	**No social participation**	48	48.00
2	**Participation in one organization**	37	37.00
3	**Participation in more than one organization**	15	15.00

The data in Table 11 revealed that 48.00 per cent tribal women had no any type of social participation while 37.00 per cent tribal women had participated in one organization. Only 15.00 per cent tribal women had participated in more than one organization.

Nearly fifty per cent of respondents had social participation in one and more organizations. They had members in Sakhi Mandal/ SHGs etc.

Source of information

Table 12: Distribution of respondents according to Source of information about Sickle cell anemia

(n=100)

Sr. No.	Source of information*	Frequency	Percent
1	**Primary Health Centre/ Community Health Centre**	07	07.00
2	**ASHA workers/ Health workers**	39	39.00
3	**Poster/ Folder/ Handbill/ Newspaper**	05	05.00
4	**Health camp**	57	57.00
5	**Radio/ Television**	01	01.00
6	**Internet**	02	02.00
7	**Training/ Seminar/ *Shibir*/ any other**	00	00.00
8	**Friends/ Neighbours**	06	06.00
9	**No information**	31	31.00

***Multiple responses**

The data portrayed in Table 12 indicated that more than half (57.00%) of respondents gained information about sickle cell anemia from health camp and 39.00 per cent of respondents gained information from ASHA workers/ Health workers. The 31.00 per cent of respondents had no any type of information regarding sickle cell anemia while 7.00 and 6.00 per cent of respondents gained information from PHC/ CHC and friends/Neighbours respectively. Only 2.00 per cent of respondents gained information from internet.

The probable reason for getting source of information by respondents about sickle cell anemia from organized Govt. health camps as well as ASHA workers.

Medical consultancy

Table 13: Distribution of respondents according to medical consultancy for sickle cell anemia

(n=100)

Sr. No.	Statements	Frequency	Percent
1	**Medical consultancy for sickle cell anemia**	30	30.00
2	**No medical consultancy for sickle cell anemia**	70	70.00

The data in Table 13 revealed that majority (70.00%) tribal women were not taking medical consultancy while only 30.00 per cent tribal women were taking medical consultancy.

It might be due to unawareness of sickle cell anemia as well as hide nature regarding disease.

Knowledge of tribal women towards sickle cell anemia

Knowledge of tribal women towards sickle cell anemia is presented in Table No.14 and 15.

Table 14 : Distribution of respondents according to their extent of knowledge about sickle cell anemia (n=100)

Sr. No.	Knowledge about sickle cell anemia	Number	Percent
1	Sickle cell trait and sickle cell disease are the types of sickle cell anemia	72	72.00
2	The major symptoms of sickle cell anemia are anemia, episodes of pain, frequent infection, swelling of hands and feet and delayed growth or puberty	71	71.00
3	Sickle cell anemia is a recessive genetic disease/ hereditary disease	61	61.00
4	Deficiency of iron produces the anemia disease in human beings	41	41.00
5	Folic acid and vitamin-B12 are responsible for formation of RBC	24	24.00
6	Pre-marital screening is necessary for prevention of sickle cell disease in tribal community	24	24.00
7	According to WHO, vitamin-c is an essential for adequate absorption of iron in body	22	22.00
8	Normally lifespan of human RBC is approximately 120 days	18	18.00
9	Sickle cell anemia is an inherited red blood cell disorder (sickle shaped) in which there aren't enough healthy red blood cells to carry oxygen throughout your body	10	10.00
10	Iron, protein and vitamin-c rich diet should be consumed for preventing anemia	09	09.00
11	Sickle cell disease can be diagnosed in an unborn baby (Prenatal testing) during 10-12 weeks of pregnancy	07	07.00
12	The normal range of Hb for women is 12-14 gm/DL	07	07.00
13	Haemoglobin is an iron containing protein present in RBC	07	07.00

The data presented in Table 14 revealed that majority (72.00 and 71.00%) of the respondents had knowledge about types of sickle cell anemia and symptoms of sickle cell anemia followed by 61.00 per cent of the respondents had knowledge that Sickle cell Anemia is a recessive genetic disease/hereditary disease. The data also indicated that 41.00 per cent of the respondents had knowledge that deficiency of iron produces the anemia disease in human beings while equal *i.e.* 24.00 per cent of them had knowledge about folic acid & vitamin-B_{12} are responsible for formation of RBC and Pre-marital screening is necessary for prevention of sickle cell disease in tribal community, vitamin-C is an essential for adequate absorption of iron in body (22.00%) and normally lifespan of human Red Blood Cell is approximately 120 days (18.00%).

It can be concluded that majority of respondents had knowledge about types and symptoms of sickle cell anemia and hereditary disease. Nearly forty per cent of respondents had less knowledge regarding technical information about sickle cell anemia.

Table 15: Distribution of respondents according to their overall knowledge about sickle cell anemia

(n=100)

Sr. No.	Level of knowledge	No. of Respondents	Percent
1	**Very low** (0 to 20.00 per cent)	40	40.00
2	**Low** (21.00 to 40.00 per cent)	31	31.00
3	**Medium** (41.00 to 60.00 per cent)	18	18.00
4	**High** (61.00 to 80.00 per cent)	08	08.00
5	**Very high** (Above 81.00 per cent)	03	03.00

The information presented in Table 16 revealed that 40.00 per cent of the respondents had very low and 31.00

per cent had low level of knowledge about sickle cell anemia followed by 18.00, 8.00 and 3.00 per cent of the respondents had medium, high and very high level of knowledge respectively. The findings were nearer to the findings by Rautray K. *et al,* 2016 and Patil S. *et al,* 2017.

The majority of respondents (71.00 per cent) had very low to low level of overall knowledge about sickle cell anemia. The findings were nearer to the findings by Rautray K. et al, 2016 and Patil S. et al, 2017.

Relationship between independent variables and dependent variables of respondents

The relationship between independent variables and dependent variables of respondents are presented in Table No.16.

Table 16: Relationship between independent variables and dependent variables of tribal women

(n=100)

Sr. No.	Independent variables	Correlation co-efficient (r)
		Knowledge
X_1	**Age**	-0.4028**
X_2	**Education**	0.4963**
X_3	**Marital status**	-0.2530*
X_4	**Family type**	0.1018
X_5	**Family size**	-0.0421
X_6	**Occupation**	0.0658
X_7	**Annual income**	0.0847
X_8	**Social participation**	0.0299
X_9	**Medical consultancy**	0.5378**

* Significant at 0.05 level ** Significant at 0.01 level

The result illustrated in Table 15 indicated that the independent variables *viz.* education and medical consultancy had positive and highly significant relationship with the knowledge of tribal women about sickle cell anemia. This might be reason that tribal women who had more education level, they gained information about sickle cell anemia from health camp, Primary Health Centre and ASHA workers/ Health workers.

The age of tribal women had negative and highly significant correlation with the knowledge of tribal women about sickle cell anemia indicated that the young aged tribal women had more knowledge while middle and old aged tribal women had less knowledge about sickle cell anemia. This might be reason that the young aged tribal women had more education.

The marital status of the tribal women had negatively significant relationship with the knowledge of tribal women about sickle cell anemia which indicated that unmarried (single) tribal women had more education and had the knowledge about sickle cell anemia-genetic/hereditary disease and they decided that they were not married for prevention of sickle cell anemia in tribal community.

CONCLUSION

It is clearly indicated from the results of this study that majority of tribal women had young aged, sickle cell trait status, married, in joint family, 5 to 6 members in family, belonged to marginal land holding, annual income upto ₹ 50,000 and more than half of tribal women had education upto higher secondary level and 36.00 per cent tribal women were illiterate. Nearly half of tribal women had no any type of social participation. Majority tribal women were not taking medical consultancy and more than half of tribal women gained information about sickle cell anemia from health camp. Majority of tribal women had low level of knowledge about sickle cell anemia. The independent variables *viz.* education and medical consultancy had positive and highly significant relationship with the knowledge of tribal women about sickle cell anemia whereas the age of tribal women had negative and highly significant and the marital status of tribal women had negatively significant relationship with the knowledge of tribal women about sickle cell anemia.

IMPLICATION

On the basis of findings, awareness programmes, training programmes and sickle cell screening and genetic counselling programmes on sickle cell anemia should be organized by health department for prevention of sickle cell anemia in tribal community. Besides, KVKs and other line department should also be arranged effective health education programmes for tribal community to increase nutritional knowledge about sickle cell anemia.

CONFLICT OF INTEREST

No conflict of interest among researchers.

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