

## Assess The Knowledge On Anemia Among Patients With End Stage Renal Stage Disease In Nephrology Ward Svims, Tirupati

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### **Abstract:**

The study was aimed to assess the knowledge on anemia among end stage renal disease and also to improve the knowledge on anemia among end stage renal disease.

### **Objectives :**

1) To assess the level of knowledge on anemia among patients with end stage renal disease.

2) To determine the association between knowledge on anaemia with selected demographic variables

**Methodology :** The research design selected for the present study was **cross-sectional Descriptive research design**. 100 clients of end stage renal disease were selected by Non-probability Convenient sampling technique, knowledge on anemia. **Results :** The study showed that . The findings of the study revealed that 15(15%) were having adequate knowledge, 56(56%) were having moderate knowledge and 29(29%) were having inadequate knowledge level, which was statistically significant at  $p$ -value is  $<0.001$ . **Conclusion:** The study findings revealed that the, early detection will prevent further complications and also helps to improve the patient health related outcomes. It has needed for periodic screening and intervention programmes for anaemia among end stage renal disease patients.

**Key Words:** assess, knowledge, anemia, end stage renal disease

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### **I. Introduction:**

“Bones can break, muscles can atrophy, glands can loaf even the brain can go to sleep without immediate danger to survival. But should kidneys fail neither bone, muscle, gland nor brain could carry on”. This statement underlines the importance of kidneys to our lives.<sup>1</sup> The World kidney day **March 14**, with an aim to raise awareness of the importance of our kidneys. The theme of world kidney day 2019 was “**Kidney health for everyone Everywhere**”. Adequate function of the kidneys is essential to the maintenance of a healthy body. If there is complete kidney failure and treatment is not given, death is inevitable.<sup>2</sup>

Kidneys are a pair of bean shaped, brownish-red structure located retro peritoneal on the posterior wall of the abdomen from the twelfth thoracic vertebra to the third lumbar vertebra in the adult. The average adult weighs approximately 113 to 170 gms and is 10 to 12 cm long, 6cm is wide and 2.5 cms thick. The right kidney is slightly lower than the left kidney due to the location of the liver.<sup>3</sup>

### **The kidneys perform many crucial functions including:-**

- Purification of blood by removal of waste products is the most important function of the kidney.
- The food that we consume contains protein. Protein is necessary for the growth and repair of the body. But as protein is utilized by the body it produces waste products. Accumulation and retention of these waste products is similar to retaining poison inside the body. Each kidney filters blood, and toxic waste products which are eventually excreted in the urine.<sup>4</sup>
- Maintaining overall fluid balance
- Regulating and filtering minerals from blood.
- Filtering waste materials from food, medications, and toxic substances.
- Creating hormones that help produce red blood cells, promote bone health, and regulate blood pressure.
- Urea, which results from the breakdown of proteins.
- Osmolality regulation.

### **NEED FOR THE STUDY:**

Anaemia is one of the most distinctive features and visible manifestations of chronic kidney failure patients. Kidney failure produces numerous changes that destabilize homeostasis. An important example

is diminished erythropoietin, with anemia being a common complication of kidney disease. **The anemia that accompanies kidney failure was recognized by Sir Robert Christenson in 1839. Melissa E. Stauffer et al; (2014)** A Study was conducted by **the current prevalence of anemia in CKD patients in the United States** . Data from the National Health and Nutrition Examination Survey (NHANES) in 2007–2008 and 2009–2010 were used to determine the prevalence of anemia in subjects with CKD. The prevalence of anemia increased with stage of CKD, from 8.4% at stage 1 to 53.4% at stage 5. A total of 22.8% of CKD patients with anemia.

**Shengfengwang, Ruchen et al; (2015)**A study was conducted by cross-sectional survey **to assess the prevalence of anemia, patient awareness, and treatment status in China** . The final result shows anemia was established in 1246 (51.5%) patients: 639 (51.3%) men and 607 (48.7%) women. The prevalence of anemia increased with advancing CKD stage.

## II. Materials And Methods :

Research Design : cross sectional-descriptive .

Setting of the study:SVIMS,Tirupati.

Population:chronic kidney disease patients

Sample:

Who were admitted in 5<sup>th</sup> stage of chronic kidney disease patients

Sample size:100

Sampling technique: Non- probability convenient sampling

Criteria for sample selection

Inclusion criteria

- End stage renal disease patients.(5<sup>th</sup> stage).
- Clients who are willing to participate in the study.
- Between the age group of above 18 to 70 years

### Exclusion criteria:

Clients who are:

- 1-4 Stages of chronic kidney disease patients.

Who are suffering with chronic illness and co-morbidities. CVA

Development of the tool:The investigator developed a self structured questionnaire regarding knowledge of an anemia .The instrument was developed after in-depth search of literature and in conclusion with experts in the field of nephrology nursing.The tool was finalized based on the response during pilot study and suggestions from experts.

Development of the tool: The structured questionnaire comprised of two sections:

**Section I A:**socio demographic data

The first part of the tool consists of 11 items describing the socio-demographic variables of patients such as age,gender,educational status, occupation,monthly family income,religion,marital status,place of residence,food habits,family history, and source of health information regarding an anemia..

**Section II B:**questionnaire on knowledge regarding an anemia

This section consists of 34 items on the level of knowledge end stage renal disease patients.Each question has 1 correct response and 3 incorrect responses.Each correct response is award with score 1 and incorrect response with score 0.The total possible correct responses are 34giving rise to maximum score of 34.

The level of knowledge is classified as :

Inadequate knowledge score:<29

Moderate adequate knowledge:<56

Adequate knowledge score:>15

Content validity: Tool was given to 10 experts constituting nursing personnel.

Reliability of the tool :The reliability of the tool is computed by **split half method** by using **Karl Pearson correlation coefficient formula** for level of knowledge anemia among end stage renal disease. The tool was found highly reliable with score of  $r=0.9$ .

**Table-I:**Frequency distribution of demographic variables and associated of selected demographic variables with level of knowledge an anemia.

| Demographic variable      |                     | Score      |            |           |            |           |            | Chi-square&p-value                                      |
|---------------------------|---------------------|------------|------------|-----------|------------|-----------|------------|---|
|                           |                     | Inadequate |            | Moderate  |            | Adequate  |            |   |
|                           |                     | F          | %          | F         | %          | F         | %          |   |
| <b>Age</b>                | Below 35 Years      | -          | -          | 1         | 1.8        | 4         | 26.7       | $\chi^2 = 23.609^{**}$ ;<br>(p = 0.000) ;<br>df= 4;     |
|                           | 36 - 45 Years       | 5          | 17.2       | 11        | 19.6       | 4         | 26.7       |   |
|                           | 46 - 55 Years       | 9          | 31         | 20        | 35.7       | 5         | 33.3       |   |
|                           | 56 - 65 Years       | 10         | 34.5       | 16        | 32.1       | 4         | 13.3       |   |
|                           | 66 & Above          | 5          | 17.2       | 6         | 10.7       | -         | -          |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Gender</b>             | Male                | 17         | 58.6       | 44        | 78.6       | 11        | 73.3       | $\chi^2 = 3.788$ ;<br>(p = 0.150) ;<br>df= 2;           |
|                           | Female              | 12         | 41.4       | 12        | 21.4       | 4         | 26.7       |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Education</b>          | Primary Education   | 15         | 51.7       | 26        | 46.4       | 3         | 20         | $\chi^2 = 13.808^{*}$ ;<br>(p = 0.032) ;<br>df= 6;      |
|                           | Secondary Education | 12         | 41.4       | 22        | 39.3       | 5         | 33.3       |   |
|                           | Graduate            | -          | -          | 4         | 7.1        | 2         | 13.3       |   |
|                           | Post Graduate       | 2          | 6.9        | 4         | 7.1        | 5         | 33.3       |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Occupation</b>         | Govt. Employee      | 3          | 10.3       | 4         | 7.1        | 11        | 73.3       | $\chi^2 = 43.326^{**}$ ;<br>(p = 0.000) ;<br>df= 6;     |
|                           | Private employee    | 2          | 6.9        | 6         | 10.7       | 2         | 13.3       |   |
|                           | Self employee       | 13         | 44.8       | 35        | 62.5       | 2         | 13.3       |   |
|                           | Daily wager         | 11         | 37.9       | 11        | 19.6       | -         | -          |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Family Income</b>      | Rs.10000            | 19         | 65.5       | 15        | 26.8       | 1         | 6.7        | $\chi^2 = 35.436^{**}$ ;<br>(p = 0.000) ;<br>df= 6;     |
|                           | Rs.10001 – 20000    | 3          | 10.3       | 17        | 30.4       | 2         | 13.3       |   |
|                           | Rs.20001 – 30000    | 5          | 17.2       | 17        | 30.4       | 3         | 20         |   |
|                           | Rs 30000 & Above    | 2          | 6.9        | 7         | 12.5       | 9         | 60         |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Religion</b>           | Hindu               | 27         | 93.1       | 46        | 82.1       | 15        | 100        | $\chi^2 = 5.162$ ;<br>(p = 0.271) ;<br>df= 4;           |
|                           | Muslim              | 2          | 6.9        | 7         | 12.5       | -         | -          |   |
|                           | Christian           | -          | -          | 3         | 5.4        | -         | -          |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Marital status</b>     | Married             | 29         | 100        | 50        | 89.3       | 14        | 93.3       | $\chi^2 = 10.617^{\oplus}$ ;<br>(p = 0.101) ;<br>df= 6; |
|                           | Unmarried           | -          | -          | 2         | 3.6        | -         | -          |   |
|                           | Divorced            | -          | -          | -         | -          | 1         | 6.7        |   |
|                           | Widow/widower       | -          | -          | 4         | 7.1        | -         | -          |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Residence</b>          | Rural               | 15         | 51.7       | 12        | 21.4       | -         | -          | $\chi^2 = 23.609^{**}$ ;<br>(p = 0.000) ;<br>df= 4;     |
|                           | Urban               | 5          | 17.2       | 25        | 44.6       | 3         | 20         |   |
|                           | Semi urban          | 9          | 31.0       | 19        | 33.9       | 12        | 80         |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Food Habits</b>        | Vegetarian          | 5          | 17.2       | 5         | 8.9        | 8         | 53.3       | $\chi^2 = 16.478^{**}$ ;<br>(p = 0.002) ;<br>df= 4;     |
|                           | Non-vegetarian      | 16         | 55.2       | 34        | 60.7       | 6         | 40         |   |
|                           | Mixed               | 8          | 27.6       | 17        | 30.4       | 1         | 6.7        |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Family History</b>     | Yes                 | 1          | 3.4        | 8         | 14.3       | 2         | 13.3       | $\chi^2 = 2.390^{\oplus}$ ;<br>(p = 0.303) ;<br>df= 2;  |
|                           | No                  | 28         | 96.6       | 48        | 85.7       | 13        | 86.7       |   |
|                           | <b>Total</b>        | <b>29</b>  | <b>100</b> | <b>56</b> | <b>100</b> | <b>15</b> | <b>100</b> |   |
| <b>Information Source</b> | Neighbours          | 2          | 25.0       | 21        | 42.9       | 2         | 16.7       | $\chi^2 = 14.527^{*}$ ;<br>(p = 0.024) ;<br>df= 6;      |
|                           | Friends /Relatives  | 5          | 62.5       | 10        | 20.4       | 1         | 8.3        |   |
|                           | Books               | 1          | 12.5       | 9         | 18.4       | 4         | 33.3       |   |
|                           | Social media        | -          | -          | 9         | 18.4       | 5         | 41.7       |   |
|                           | <b>Total</b>        | <b>8</b>   | <b>100</b> | <b>49</b> | <b>100</b> | <b>12</b> | <b>100</b> |   |

Note:\*\*= Significant at 0.001 level  
 $\oplus$ =Significant at 0.05 level

**Table-2: frequency and percentage distribution level of knowledge among end stage renal disease patients.**

| <b>n=100</b> |                      |               |                |
|--------------|----------------------|---------------|----------------|
| S.No         | Level of knowledge   | Frequency (f) | Percentage (%) |
| 1.           | Inadequate knowledge | 29            | 29%            |
| 2.           | Moderate knowledge   | 56            | 56%            |
| 3.           | Adequate knowledge   | 15            | 15%            |
|              | <b>Total</b>         | 100           | 100%           |

**Table-5: Mean and Standard deviation for Level of Knowledge on Anaemia among end stage renal disease Patients.**

| <b>n=100</b>   |      |                    |
|--|------|--------------------|
| Level of knowledge on anaemia among end stage renal disease patients | Mean | Standard deviation |
| <b>Knowledge statements</b>  | 1.86 | 0.652              |

**Data collection procedure:**The data collection was scheduled from 9.03.2020 to 20.03.2020.Before the data collection ,the investigator obtained the formal permission from the HOD,Department of Nephrology,SVIMS,Tirupati,to conduct the study.The investigator selected 100 patients inclusion criteria for data collection using convenient sampling . After administered the questionnaire, the investigator spend 15 minutes each client for clarifying any doubts in the questionnaire and information booklet was given to all the clients which contains the information regarding the anemia definition, causes,symptoms and preventive measures the participants for their willingness and cooperation.

**Data analysis:**Descriptive (percentage,Mean,Standard deviation) and Inferential (Chi-square,frequency) statistics were used.

### III. Findings:

#### Socio-Demographic Data

##### Interpretation:

Table 1:Shows the association of knowledge regarding an anemia with the selected demographic characteristics of end stage renal disease patients in SVIMS,Tirupati.The data revealed with regard to demographic variables there was stastically significant association seen in the variables.It was significant at <0.001 level.Hence it was inferred that there was a significant association between selected demographic variables.The data presented table 2 shows that15% adequate knowledge,56% have moderate knowledge and 29% have in adequate knowledge.

**Interpretation:**TABLE:05 shown that mean& standard deviation on knowledge an anemia in end stage renal disease patients,the mean score were 1.86 and Standard deviation score were 0.652.The significant p-value was <0.001.Our results have clearly indicated that the knowledge on anemia among end stage renal disease patients

Of have significant implications in the knowledge of anemia among end stage renal stage disease patients.these findings

### IV. Discussion:

The present study result reveals to assess the knowledge on anemia among end stage renal disease patients in representative sample of patients in selected areas .The first objective of the present study was to assess the knowledge on anemia among end stage renal disease patients it shows that 29% inadequate knowledge,56% have moderate knowledge and 15% have adequate knowledge, Which was statistically significantat p-value is <0.001.

The above results were supported by a study was conducted in Ethiopia.This study showed that shows Mean +SD age of participants was 54.81±12.45 years and 110(52.9%) of them were male only 59(28.4%) of the participants had awareness' about chronic kidney disease and risk factors.The second objective of the study

to associate the knowledge on anaemia among end stage renal disease clients with selected demographic variables ,the mean score were 1.86, Which was statistically significantat p-value is <0.001.

The above associated findings in study were supported by a cohort study was conducted in American society of Nephrology. The association between anaemia and end stage kidney disease was significant among all racial/ethnic groups except non-hispanic blacks.In this study the significant association between knowledge of end stage renal disease patients with selected demographic variables like age,gender,education,occupation,family monthly income.In this study two, socio-demographic variables

associated with present study. In future studies can be recommended to be replicated a quasi-experimental study can be conducted on effectiveness of planned teaching programme regarding prevention of anaemia among renal failure disease clients and life style modifications among general population.

### **V. Conclusion:**

It has concluded that, early detection will prevent further complications and also helps to improve the patient health related outcomes.

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