

EFFECT OF SELF RECORDED INTAKE AND OUTPUT CHART ON INTERDIALYTIC WEIGHT GAIN AMONG HEMODIALYSIS PATIENTS

MRS .ATHIRA SOURABHAN, PROF. MRS.REKHA.S, & PROF. MRS.EVANGELINE.J,

ABSTRACT

A quasi experimental study was conducted to assess the effect of self recorded intake and output chart on interdialytic weight gain among hemodialysis patients in a selected hospital at Alappuzha district. The objectives of the study were to assess the pre and post interdialytic weight gain among patients undergoing hemodialysis, compare the pre and post interdialytic weight gain, find out the association between selected demographic variables and clinical variables with pre-interventional interdialytic weight gain among patients undergoing hemodialysis. A quantitative research approach with pre experimental one group pre testpost test design was adopted for this study. The study was conducted at Century Hospital, Mulakkuzha, among forty patients undergoing hemodialysis selected by Non Probability Purposive sampling technique. Conceptual framework was developed based on Imogene King's goal attainment theory. The tools used were structured interview schedule on socio demographic data, bio physiological and diary method for clinical variables and standardized weighing machine to check the weight. Pre test assessment were done and samples were instructed regarding the importance and maintenance of intake and output chart. Intake and output chart booklet, standardized measuring cup and urinal were given to the study subjects to maintain the intake output chart accurately for a period of one month. Post test was conducted at the end of fourth week by using the same tools. Data were analyzed by using descriptive and inferential statistics. Result showed that the post test score 2.18 with $SD=1.16$ was significantly less than the mean pre test score 3.49 with $SD=0.91$ with mean difference of 1.31. The calculated t value (6.89) was more than the table value (2.75) at 0.01 level of significance at df 39. Thus the self recorded intake and output chart was effective in reducing the interdialytic weight gain among hemodialysis patients. The study also showed that there was no association between pre test level of interdialytic weight gain with selected socio demographic and clinical variables. The findings of the study have implications in nursing practice, education, administration and research.

Key words: Effect; Intake and output chart; Interdialytic weight gain; Hemodialysis patients.

INTRODUCTION

Health is an ongoing process, a way of life, through which a person develops and encourages every aspect of the body, mind and feelings to interrelate harmoniously as much as possible. According to World Health Organisation (WHO), Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. Perception about health varies according to an individual's previous experience, expectation of self, age and socio-cultural influences.

A disease is an abnormal condition that affects the body of an organism. An impairment of the normal state of the living animal or plant body or one of its parts that interrupts or modifies the performance of the vital functions. It sometimes includes injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviours, and atypical variations of structure and function. One of the important vital organ is kidney. Major function of the kidneys is to remove waste products and excess fluid from the body. These waste products and excess fluid are removed through the urine. The production of urine involves highly complex steps of excretion and re-absorption. This process is necessary to maintain a stable balance of body chemicals. Chronic Renal Failure (CRF) or End Stage Renal Disease (ESRD) is the progressive, irreversible deterioration in renal function in which the body's ability to maintain metabolic, fluid and electrolyte balance fails resulting in uremia or azotemia. Chronic Kidney Disease (CKD) the condition causes reduced kidney function over a period of time. CKD is present when glomerular filtration rate remains below 60 ml per minute for more than 3 months or when urine albumin-to-creatinine ratio is over 30mg of albumin for each gram of creatinine (30 mg/g).

ESRD is a chronic illness which inevitably reduces the lifespan of its patients. The Continuous Ambulatory Peritoneal Dialysis [CAPD], haemodialysis (HD) and Renal Transplantation treatment modalities are not curative, instead they offer symptom relief, extend life expectancy and are intended to improve the quality of life.

STATEMENT OF THE PROBLEM

A study to assess the effect of self recorded intake and output chart on interdialytic weight gain among hemodialysis patients in a selected hospital at Alappuzha district.

OBJECTIVES OF THE STUDY

1. To assess the pre interventional interdialytic weight gain among patients undergoing hemodialysis.
2. To assess the post interventional interdialytic weight gain among patients undergoing hemodialysis.

3. To compare the pre and post interventional interdialytic weight gain among patients undergoing hemodialysis.
4. To find out the association between selected demographic variables and pre- interventional interdialytic weight gain among patients undergoing hemodialysis.
5. To find out the association between selected clinical variables and pre-interventional interdialytic weight gain among patients undergoing hemodialysis.

HYPOTHESIS

H01: There will be no significant difference in post interdialytic weight gain among hemodialysis patients after maintaining self recorded intake output chart.

H1: There will be a significant difference in post interdialytic weight gain among hemodialysis patients after maintaining self recorded intake output chart.

H02: There will be no significant association between pre interventional interdialytic weight gain and selected socio demographic variables.

H2: There will be a significant association between pre interventional interdialytic weight gain with selected socio demographic variables.

H03: There will be no significant association between pre interventional interdialytic weight gain with selected clinical variables.

H3: There will be a significant association between pre interventional interdialytic weight gain and selected clinical variables.

RESEARCH APPROACH

Quantitative Research Approach

RESEARCH DESIGN

The research design adopted for the study was pre experimental one group pre test post test research design.

DEMOGRAPHIC VARIABLES

The demographic variables in this study were age, gender, educational status, marital status, religion, occupation, income per month, duration of chronic kidney disease, frequency of dialysis, co-morbidity, duration of hemodialysis, total number of dialysis undergone and dietary habits.

Dependent variable

Interdialytic weight gain among hemodialysis patients was the dependent variable in this study.

Independent variable

Self recorded intake and output chart was the independent variable in this study.

Setting of the study

The study was conducted at Hemodialysis unit of Century Hospital, Mulakkuzha, Kerala. It is a 300 bedded multispecialty hospital with all modern facilities. The Nephrology department of the hospital consists of a well equipped hemodialysis unit. Seven beds are available in the dialysis unit. Average number of hemodialysis was about 16-18 per day.

Population

The population of the study was the patients with chronic renal failure who were undergoing hemodialysis in Century hospital, Mulakkuzha.

Sample

40 hemodialysis patients in Century hospital who met the inclusion criteria.

Sampling technique

Non probability purposive sampling technique

Inclusion Criteria

Patients with chronic renal failure undergoing hemodialysis who are:

undergoing dialysis at least twice in a week in the selected hospital.

undergoing dialysis at least for a period of one month

able to understand, read and write malayalam/english.

willing to participate in the study.

Exclusion Criteria

Patients undergoing hemodialysis who are:

- unable to maintain intake and output chart due to any reasons.
- undergoing hemodialysis for any indication other than chronic renal failure.

Tools/ Instruments

The data from the sample was collected using:

- Socio demographic Performa to collect the demographic data.
- Clinical Variables to determine the clinical parameters.
- Standardized weighing machine to assess the interdialytic weight gain.

Description of the tool / technique

The tool consists of,

Tool 1: Section A: Socio demographic Performa Section B: Clinical Variables

Tool 2: Standardised weighing machine

Tool 1:

Section A: Socio demographic Performa

Socio demographic performa included 13 items such as age, gender, religion, educational status, occupation, marital status, monthly income of family, co-morbidity, duration of hemodialysis, total number of hemodialysis undergone, duration of chronic renal failure, dietary pattern. The purpose of this was to determine the association of pre interventional interdialytic weight gain with selected socio demographic variables. Technique: Structured interview schedule.

Section 2: Clinical Variable

Included 16 items such as pre-dialysis weight, post dialysis weight, interdialytic weight gain, systolic blood pressure, diastolic blood pressure, Hb, serum Na⁺, serum K⁺, serum urea, serum creatinine level, BMI, total intake per day, total output per day, edema, diuretics and ultra filtration rate . The researcher collected the values of

clinical variables from the investigation report which was available in the hospital record of the patients. Technique: Bio physiological and Diary method.

Tool 2: Standardised weighing machine

Standardised weighing machine was used to check the weight of the patients and weight chart prepared by the researcher was used to record the weight to calculate the interdialytic weight gain.

Technique: Bio physiological method.

Validity of the instrument

A criterion rating scale for validation of the tool was developed with options like strongly agree, agree, disagree and remarks from the experts. The demographic performa, clinical variable and weight chart were submitted to 10 experts along with the checklist to establish the content validity. In the demographic profile out of 13 items, six items had 100% agreement and other seven items were modified based on the suggestions and opinions of the experts.

Reliability of the instrument

After seeking permission from the authority, the weighing machine was sent for calibration at Alleppey Surgicals, Mavelikara and was calibrated the weighing scale as 600 kg, type digital, Serial No: 060167AWEG015, Model : IPB 600 and certificate of calibration was obtained from the authorities. This indicates that the tool was reliable.

DATA COLLECTION PROCESS

Phase 1: The researcher obtained permission from the authority and informed consent from the participants were taken. The socio demographic data and clinical variables were collected and pre test was conducted by using standardised weighing machine.

Phase 2: Researcher educated and instructed the patients to maintain the intake and output chart and its importance and rechecked the chart, reinforced and motivated them to complete it accurately.

Phase 3: Post test was done at the end of fourth week and IDWG was calculated using the same standardised weighing machine.

PLAN FOR DATA ANALYSIS

The data were analyzed as shown below:

Part 1: Socio-demographic performa and clinical variables were analyzed by using frequency and percentage.

Part 2: Pre test and post tests values were assessed by using descriptive and inferential statistics.

Part 3: Significance of difference between the score of subject before and after the administration of intervention was analyzed by using paired 't' test.

Part 4: Association between the pre test scores of interdialytic weight gain and selected socio-demographic variables was tested using chi-square test.

Part 5: Association between the pre test scores of interdialytic weight gain and selected clinical variables was tested using chi-square test.

RESULTS

Section I: Description of socio-demographic profile of subjects.

- (47.5%) of the subjects belongs to the age group of 40 – 60 years.
- (72.5%) hemodialysis patients were males.
- Regarding educational status of the study subjects, (40%) of subjects had secondary education.
- Majority (87.5%) of study subjects were married.
- (67.5%) of study subjects were Hindu.
- With regard to the occupation (27.5%) of subjects were Govt:employee.
- Monthly income distribution showed that (47.5%) of subjects had monthly income of the family between 15001 - 20000 rupees.
- With regard to the duration of chronic kidney disease (47.5%) between 5- 10 years.
- With regard to the frequency of hemodialysis (70 %) were receiving hemodialysis treatment twice in a week.
- Presence of co-morbidity showed that (35%) of subjects had diabetes mellitus and hypertension.
- With regard to the duration of hemodialysis treatment (40%) were receiving hemodialysis treatment < 1 year.
- According to the number of hemodialysis (55%) had undergone dialysis treatment < 100 times.
- With regards to the dietary habits (60%) of subjects had non vegetarian diet.

Pre test score of Interdialytic weight gain

•Before intervention (47.5%) of the subjects had interdialytic weight gain between 3-4 kg (30%) of the subjects had interdialytic weight gain \geq 4 kg (12.5%) had interdialytic weight gain between 2-3 kg and (10%) had interdialytic weight gain < 2 kg.

Post test score of Interdialytic weight gain

•After the intervention (37.5%) had interdialytic weight gain between 3-4 kg (25%) of the subjects had interdialytic weight gain between 2-3 kg (20%) had interdialytic weight gain \geq 4 kg and (7.5%) of the subjects had interdialytic weight gain < 2 kg.

Section II: Description of clinical variables of the subjects

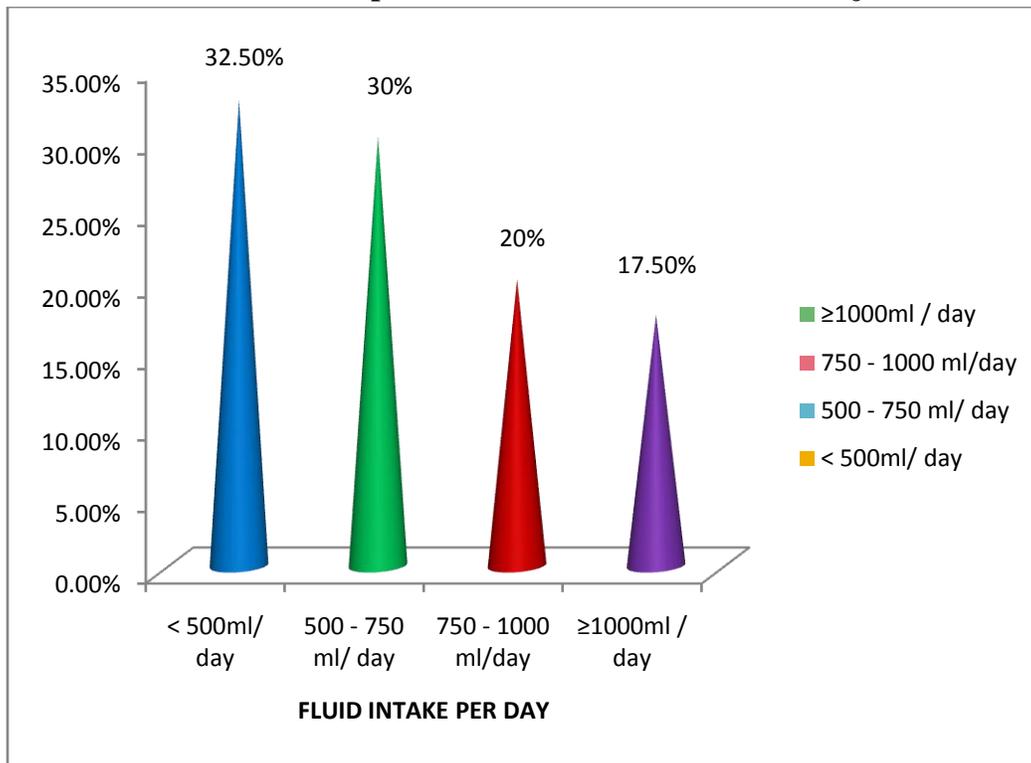


Figure 1: Cone diagram showing percentage distribution of subjects according to fluid intake per day(N =40)

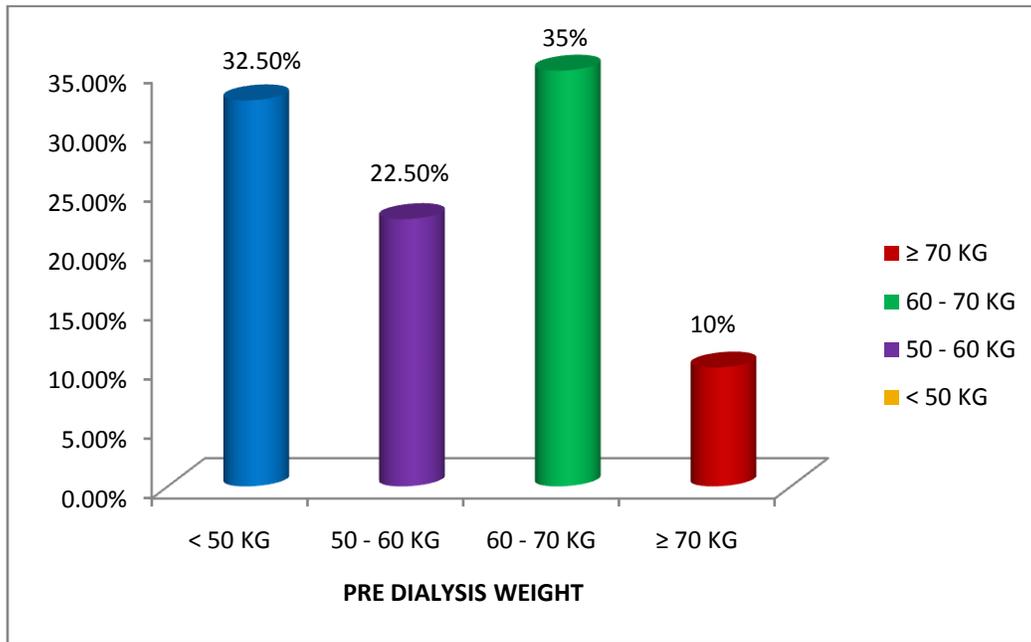


Figure 2: Cylindrical diagram showing percentage distribution of subjects according to pre dialysis weight (N =40)

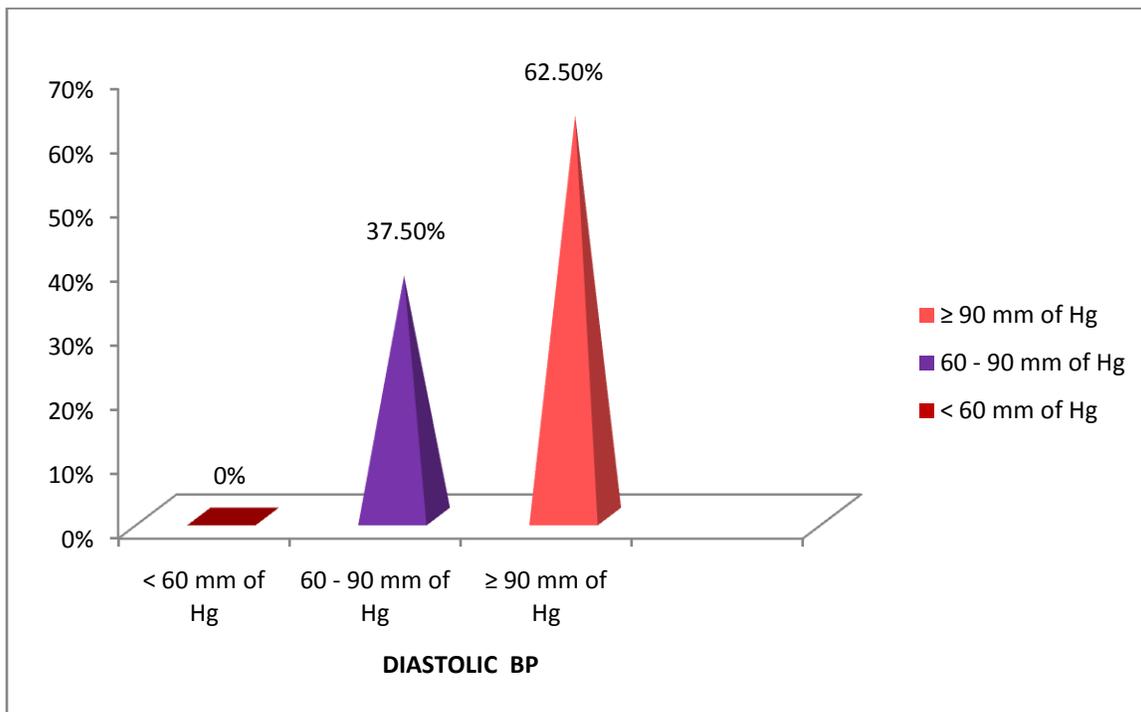


Figure 3: Cone diagram showing percentage distribution of subjects according to diastolic BP(N =40)

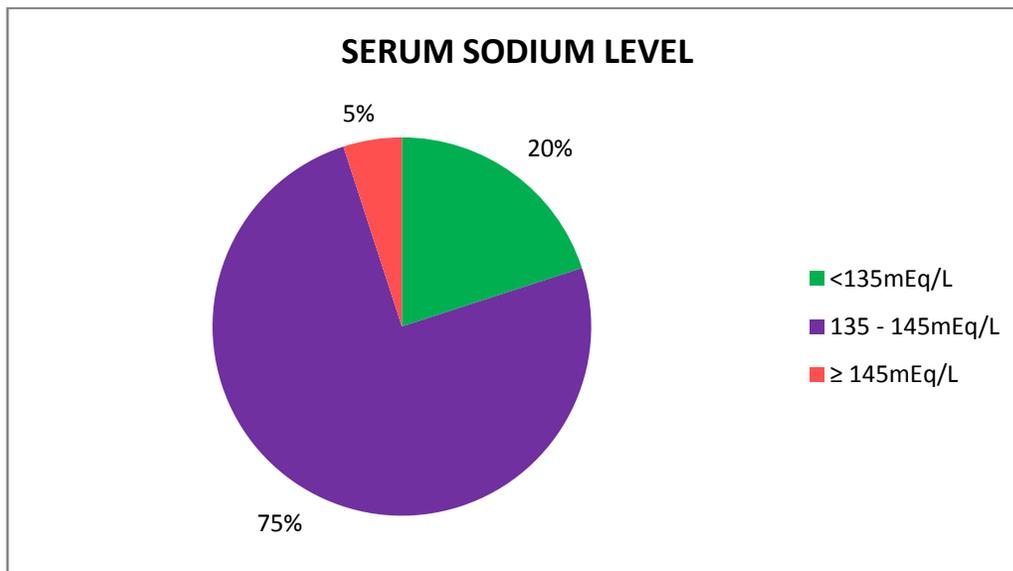


Figure 4: Pie diagram showing percentage distribution of subjects according to Serum sodium level (N =40)

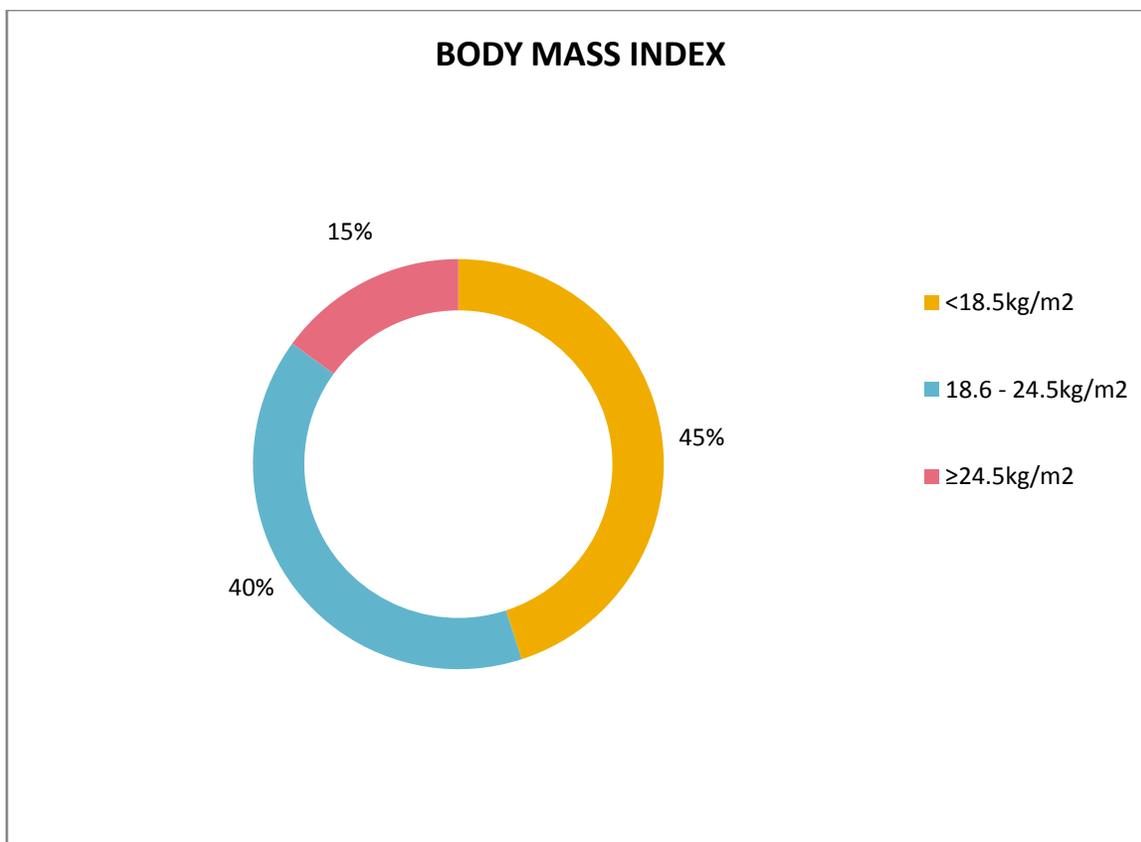


Figure 5: Pie diagram showing percentage distribution of subjects according to Body Mass Index (N=40)

Section III: Description of the level of interdialytic weight gain before and after the intervention

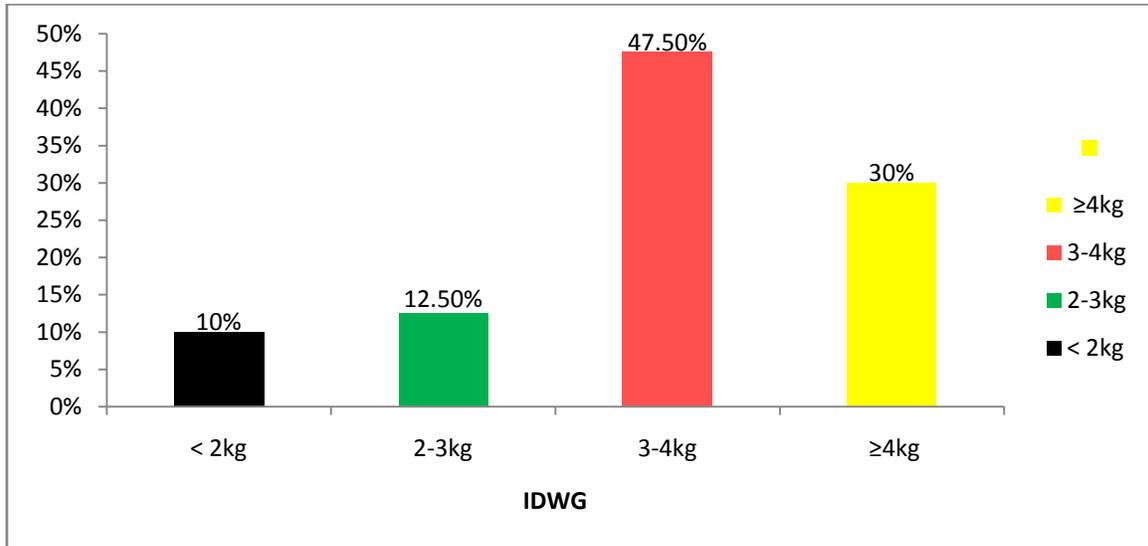


Figure6: Pre-interventional interdialytic weight gain among patients undergoing hemodialysis

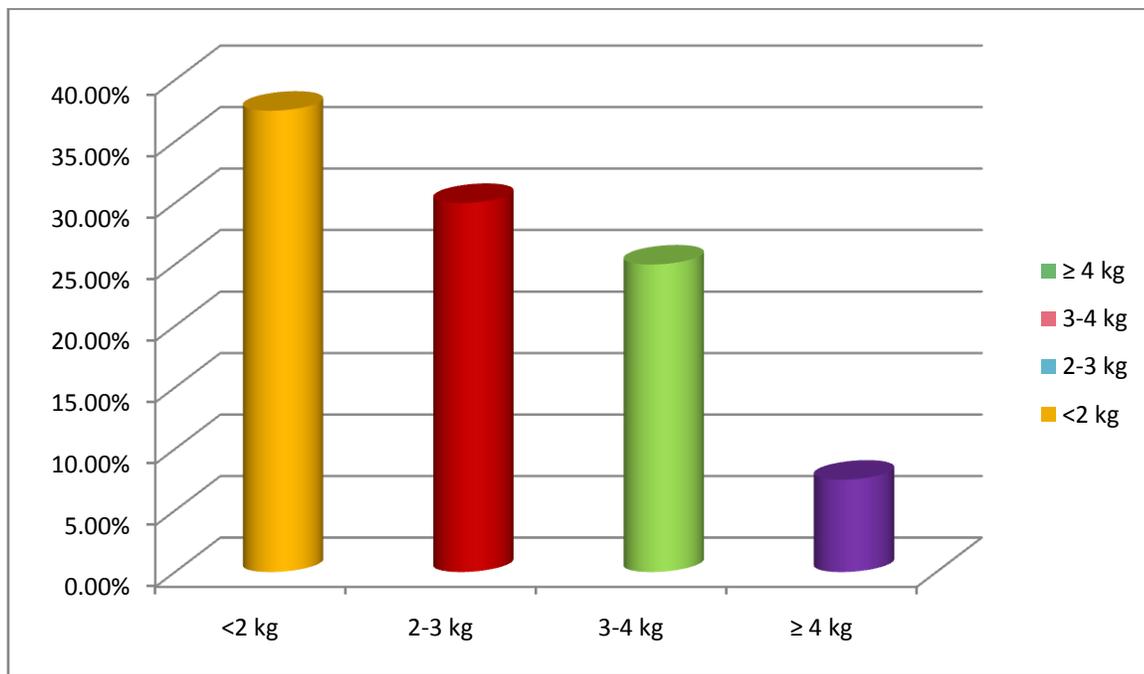


Figure 7: Post-interventional interdialytic weight gain among patients undergoing hemodialysis (N =40)

CONCLUSION

The present study revealed that self recorded intake and output chart was effective in hemodialysis patients. There was no association between pre interventional interdialytic weight gain with socio demographic and clinical

variables. Finding of the study suggested that self recorded intake and output chart can be used as an effective method for the awareness of interdialytic weight gain and its maintenance for hemodialysis patients. It can also be used as an effective strategy to improve the quality of life as well.

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