Prevalence of Anxiety and Its Correlates in Care-givers Of Patients Undergoing Periodic Hemodialysis

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Abstract:

Background:"Anxiety" can be defined as a fear without an extrinsic cause.It is an autonomous feeling aroused by intrinsic cortical processes, conscious or subconscious memories and associations originating from past experiences and life situations.Simply put, a "care-giver" is any person who provides help and support to someone in need of it.Family care-givers provide care not in lieu of any compensation.Although not a subject usually concentrated upon, yet there are studies which show the build-up of caregiver burden.Caregiving responsibilities for patients undergoing hemodialysis are extremely burdensome.An aspect almost completely neglected is presence of greater than normal levels of anxiety in care-givers of such patients.This study was executed to shed light on this aspect.

Aims: 1. To assess the prevalence of anxiety amongst care-givers of patients undergoing periodic hemodialysis. 2. To analyse and compare prevalence of anxiety with respect to socio-demographic variables.

Materials and Methods: The study was designed as a cross-sectional study conducted at Department of Nephrology of SreeBalaji Medical College and Hospital, Chennai.Sequential sampling technique was employed.Sample sizewas 60.Hamilton Anxiety Rating Scale (H.A.R.S.) was used to assess presence of anxiety and its severity in study participants.Care-givers below 18 years of age and those with previously diagnosed psychiatric disorders were excluded from the study.Analysis of data was done using statistical tests.

Results:50% of care-givers were found to have high levels of anxiety.19 female participants scored in the categories of moderate to severe anxiety or higher compared to only 2 male participants.This difference was statistically significant (p-value = 0.006).Also,statistically significant association was found between care-giving period of participants (p-value = 0.045)and presence and absence of physical morbidities in participants (p-value = 0.014) with severity of anxiety in participants.

Conclusion: Prevalance of greater than mild levels of anxiety in care-givers of patients undergoing periodic hemodialysis was 50%.Female care-givers, care-givers with care-giving period between 5-10 years and those with physical morbidities had significantly higher prevalence of severe levels of anxiety.Considering the ethical aspect, all participants with significant levels of anxiety were advised to seek psychiatric consultation.

Keywords: Anxiety, Care-giver, Hemodialysis

I. Introduction

"Anxiety" can be defined as a fear without an extrinsic cause.It is an autonomous feeling aroused by intrinsic cortical processes, conscious or subconscious memories and associations originating from past experiences and life situations.[1]The concept of anxiety is heterogenous as it refers to multiple mental and physiological phenomena, including a person's conscious state of worry over a future unwanted event, or fear of an actual situation.Anxiety is a diffuse emotion, which can sometimes be unreasonable or excessive reaction to current or future perceived threat.[2]It is under these circumstances that anxiety crosses the boundary of being a normal behavioural response and morphs into the psychopathological entity of "anxiety disorder".One of the situations which can give rise to these circumstances is the burden of continual care-giving.

Simply put, "caregiving" is help in the form of aid or assistance provided to an individual who requires it."Care-giver" in a general sense is used to refer to a non-professional persons, which means medical health-professionals are excluded.The definition of "care-giver" includes individuals (family members, friends and neighbours) who provide uncompensated care, which involves significant amounts of energy and time for a long period usually amounting to years, and requires performance of tasks that are physically, financially, emotionally and socially demanding.[3]

"Caregiver burden" has been described as the impact on physical, social, emotional and financial well-being of the care-giver incurred due to caring for the patient.[4]Thepatient-complexity in chronic kidney disease (C.K.D.) surpasses that of many other medical conditions.[5]Hence, it is implied that care-giver burden in care-

givers of patients undergoing hemodialysis is also significantly high.The amount of stress experienced by care-givers of patients suffering from end-stage renal disease (E.S.R.D.) can be considered serious illness in itself.[6]It should not come as a surprise that increasing care-giver burden which causes increased stress can eventually lead to pathological levels of anxiety.[7]But, like many other aspects of care-giver's well-being, severe levels of anxiety are also ignored.

This study is aimed to assess the prevalence and severity of anxiety in care-givers of patients undergoing periodic hemodialysis and to bring forth the socio-demographic factors associated with it.

II. Materials And Methods

Study Design: Cross-Sectional Study.

Study Setting: Department of Nephrologyof Sree Balaji Medical College and Hospital, Chennai.

Study Duration: December, 2018 to March, 2019.

Sample Size: 60.

Sample Size Calculation: Sample size was calculated using Cochran's formula.With a confidence level of 95% and a margin of error of 5%, the sample size was estimated to be 60.

Sampling Technique: Sequential sampling.

Inclusion Criteria: 1. Family care-givers of patients (close relatives who spend significant amount of time taking care of the patient) who areundergoing periodic hemodialysis.Care-givers with age more than 18 years, who willingly gave informed consent were included in the study.

Exclusion Criteria: 1. Care-givers with age < 18 years.
2. Care-giverspreviously diagnosed with any psychiatric disorder.

Data Collection Tools:1. "Basic Demographic Proforma" designed by the authors.
2. Hamilton Anxiety Rating Scale: Hamilton Anxiety Rating Scale (H.A.R.S.) is one of the most popular instruments used to assess severity of anxiety symptoms in clinical-setting.It was developed by Max Hamilton.It is a 14-item instrument which accounts for both psychic and somatic anxiety.The possible scores from 0-56.The scores were categorised as: No to Mild Anxiety (0-17), Mild to Moderate Anxiety (18-24), Moderate to Severe Anxiety (25-30) and Severe Anxiety (31-56).

Methodology: The steps of the study progression were as follows:
1. Approval for the study was obtained from "Institutional Human Ethical Committee".
2. Informed consent was obtained from willing participants.
3. Socio-demographic details were collected using "Basic Demographic Proforma" which was designed by the authors.
4. Hamilton Anxiety Rating Scale (H.A.R.S.) was administered to the participants.
5. Statistical analysis of the data was done.
6. Results were obtained.

Statistical Analysis: Data was analysed using M.S. Excel.Bar-graphs were used to express distribution of participants according to socio-demographic variables.Fisher's exact test was performed to test for differences in distribution ofgroups of participants between two or more categories.P-value of <0.05 was considered as significant.

III. Results

A.   Basic Demographic Parameters

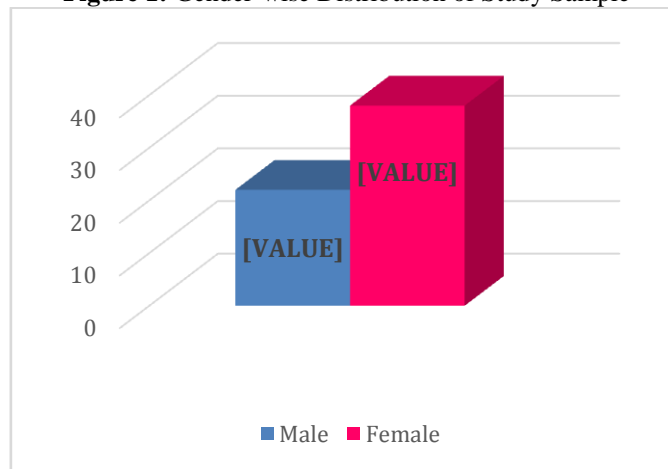**Figure 1:** Gender-wise Distribution of Study Sample

Figure 1 depicts gender-wise distribution of study sample.The study sample consisted of 38 (63%) females and 22 (37%) males.

Figure 2: Age-wise Distribution of Study Sample
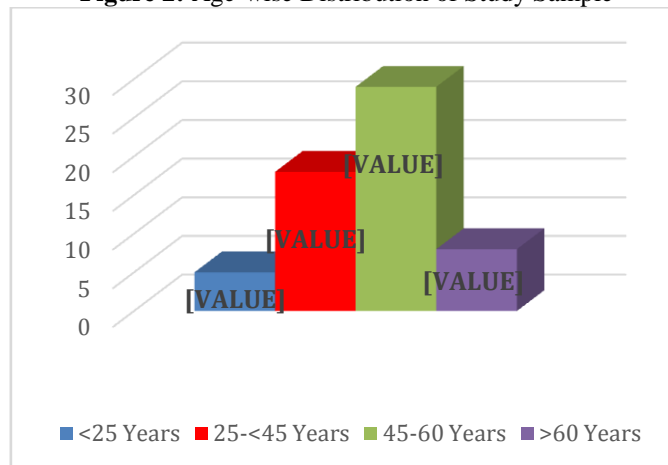

Figure 2 depicts the age-wise distribution of study sample.The study sample had 05 (08%) participants in age-group of <25 years; 18(30%) participants aged 25-<45 years; 29 (49%) participants aged 45-60 years and 08 (13%) participants of >60 years of age.

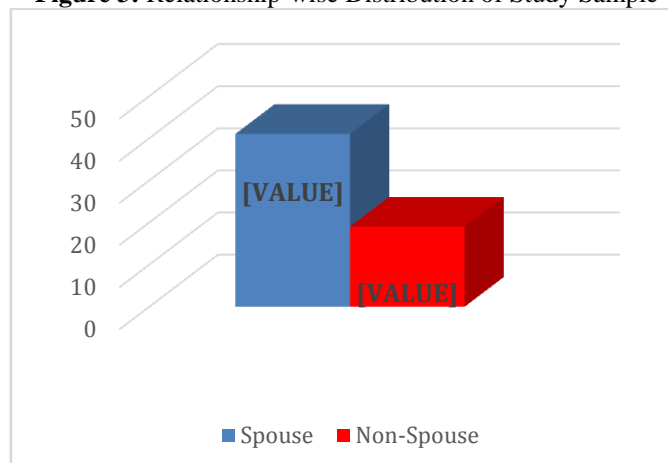**Figure 3:** Relationship-wise Distribution of Study Sample

Figure 3 depicts the relationship-wise distribution of study sample.41 (68%) participants were spouses of patients, whereas 19 (32%) participants were not spouses of patients.

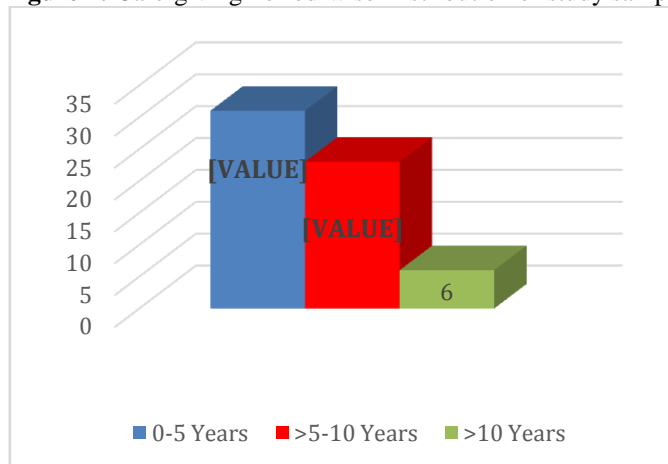**Figure 4:** Care-giving Period-wise Distribution of study sample

Figure 4 depicts the care-giving period-wise distribution of study sample.The study sample consisted of 31 (52%) participants with care-giving period of 0-5 years; 23 (38%) participants with care-giving period of >5-10 years and 6 (10%) participants with care-giving period of >10 years.

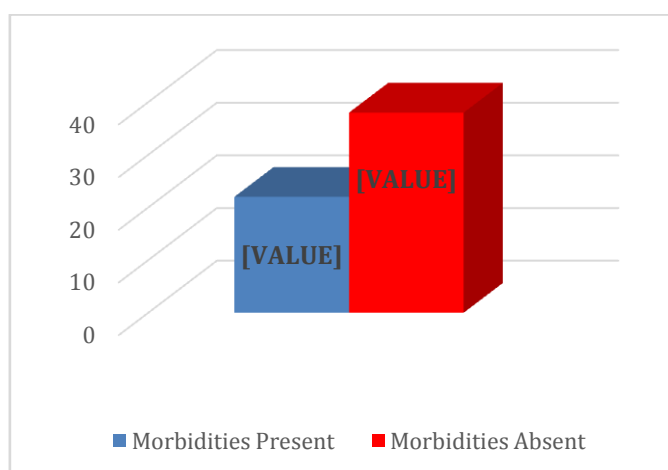**Figure 5:** Physical Morbidities-wise Distribution of study sample

Figure 5 depicts physical morbidities-wise distribution of study sample in which 18 (30%) participants suffered from physical comorbidities like Diabetes Mellitus, Hypertension and Thyroid-Related Disorders.42 (70%) participants did not suffer from any physical comorbidities.

B. Analysis of Prevalence of Anxiety and its Severity

Table 1: Characteristics ofH.A.R.S. Scores According toSocio-Demographic Variables

SOCIO-DEMOGRAPHIC VARIABLE	STATISTICAL CHARACTERISTICS OF H.A.R.S. SCORES					
	Minimum Score	Maximum Score	Mean Score	Median Score	Standard Deviation	95% Confidence Interval
Gender						
Male	02	29	12.045	08	08.126	12.045 +/- 3.396
Female	01	34	19.131	24	10.374	19.131 +/- 3.299
Age-Group						
<25 Years	02	12	05.800	05	3.370	5.800+/-2.954
25-<45 Years	03	29	13.222	08	8.689	13.222+/-4.014

45-60 Years	02	34	20.965	25	9.803	20.965+/-3.568
>60 Years	01	29	14.625	12	9.136	14.625+/-6.332
Relationship With Patient						
Spouse	02	34	18.243	22	10.276	18.243+/-3.146
Non-Spouse	01	29	12.842	09	8.986	12.842+/-4.041
Care-Giving Period						
0-5 Years	01	30	13.967	10	9.092	13.967+/-3.201
>5-10 Years	02	34	21.173	26	10.651	21.173+/-4.353
>10 Years	04	22	12.000	10	6.429	12.000+/-5.144
Physical Morbidities						
Present	07	34	22.388	25	7.454	22.388+/-3.444
Absent	01	32	14.023	08	10.189	14.023+/-3.082
ALL	01	34	16.533	16.500	10.200	16.533 +/- 2.581

Table 1 shows the characteristics of H.A.R.S. scores of study sample according to socio-demographic variables.Mean score for all participants was 16.533.In terms of gender, mean score was higher (19.131) for female participants compared to male participants (12.045).In terms of age, mean score was highest (20.965) for participants in age-group of 45-60 years, whereas mean score was lowest (05.800) for participants in age-group of <25 years.In terms of relationship with patient, mean score was higher (18.243) for participants who were spouses of patients compared to non-spouse participants (12.842).In terms of care-giving period, mean score was highest (21.173) for participants with care-giving period of >5-10 years, whereas mean score was lowest (12.000) for participants with care-giving period of >10 years.In terms of physical morbidities, mean score was higher (22.388) for participants with physical morbidities compared to participants without physical morbidities (14.023).

Table 2: Analysis of Distribution of Study Sample Along H.A.R.S. Categories

SOCIO-DEMOGRAPHIC VARIABLE	DISTRIBUTION OF PARTICIPANTS ALONG H.A.R.S. CATEGORIES					p-VALUE (By Fisher's Exact Test)
	No to Mild Anxiety	Mild to Moderate Anxiety	Moderate to Severe Anxiety	Severe Anxiety	Total	
Gender						
Male	16	04	02	00	22	**0.006**
Female	14	05	17	02	38	
Age-Group						
<25 Years	05	00	00	00	05	0.067
25-<45 Years	12	03	03	00	18	
45-60 Years	08	05	14	02	29	
>60 Years	05	01	02	00	08	
Relationship With Patient						
Spouse	17	07	15	02	41	0.302
Non-Spouse	13	02	04	00	19	
Care-Giving Period						
0-5 Years	19	04	08	00	31	**0.045**
>5-10 Years	07	03	11	02	23	
>10 Years	04	02	00	00	06	
Physical Morbidities						
Present	04	03	10	01	18	**0.014**
Absent	26	06	09	01	42	
ALL TOTAL	30	09	19	02	60	

Table 2 shows the analysis of distribution of study sample along H.A.R.S. categories.Statistically significant association was found between gender of care-giver (p-value = **0.006**); care-giving period (p-value = **0.045**); and presence or absence of physical morbidities in care-givers (p-value = **0.014**) with severity of anxiety in care-givers.Age of care-giver (p-value = 0.067) and relationship with patient (p-value = 0.302) were found to have no statistically significant associationwith severity of anxiety in care-givers.

IV. Discussion

Care-givers are known as hidden patients[8] as despite suffering on several fronts of health their needs are ignored.Mental-health is a neglected aspect even in the general population.Hence, it is easy to understand that the mental healthcare needs of care-givers are seldom looked into.One of the major mental-health concerns expected to be caused by build-up of care-giver burden and accompanying stress is pathological anxiety.Through our study we tried to shed light at this aspect of mental-health of care-givers of patients undergoing periodic hemodialysis.

The mean H.A.R.S. score for our study sample was 16.533 +/- 10.200 (Mean +/- S.D.).50% of participants had scores implying mild to severe anxiety.In comparison, the study by Shukri et al. reported that 28.80% of care-givers had moderate levels of anxiety, whereas another 35.90% had severe anxiety.[9]

In our study, statistically significant association (p-value = **0.006**) was found between gender of care-givers and severity of anxiety.Severe anxiety was more prevalent in care-givers of female gender.This was in tune with the study by Giri et al. in Kerala, which reported that anxiety is more common in female care-givers of hemodialysis patients.[10]This finding could be explained by the fact that women in general population are more likely to suffer from anxiety disorder through their lifetime and presence of high levels of caregiver burden in female care-givers makes them more vulnerable..

Our study found that statistically significant association (p-value = **0.045**) was present between care-giving period and severity of anxiety in care-givers.Care-givers with care-giving period of >5-10 years had greater prevalence of severe anxiety.This finding could be attributed to build-up of caregiver burden over period of caregiving.Deterioration of patient health over the duration of caregiving is another important factor causing greater anxiety with longer duration of caregiving.Decline in anxiety after a long but variable period of caregiving could be due to acceptance of the predicament and development of coping strategies.

In the study executed by us, statistically significant association (p-value = **0.014**) was found between presence or absence of physical morbidities in care-givers and severity of anxiety.Care-givers having physical morbidities had proportionally higher prevalence of severe anxiety when compared to care-givers without physical morbidities.This finding could be explained by the fact that in case of care-givers, the burden of care-giving itself causes stress, whereas the added impact of health issues is considered a double whammy.Hence, presence of physical morbidities makes care-giver more prone to severe levels of anxiety.

V. Conclusion

This study comes to a conclusion that prevalence of greater than mild levels of anxiety was 50% among care-givers of patients undergoing periodic hemodialysis.

Gender of care-giver (p-value = **0.006**); care-giving period (p-value = **0.045**); and presence or absence of physical morbidities in care-givers (p-value = **0.014**) were significantly linked to severity of anxiety in care-givers.

Finally, severe levels of anxiety among care-givers of patients undergoing periodic hemodialysis poses a big threat to mental-health of care-givers which should be tackled by proper measures at multiple levels.

References

[1]. Bauer J. Definition(s) of Anxiety. JAMA. 1965;191(5):420. doi:10.1001/jama.1965.03080050066027
[2]. Foa EB, Foa EB, Franklin M, et al. Defining Anxiety Disorders. In: Treating and Preventing Adolescent Mental Health Disorders: What We Know and What We Don't Know. 2 ed. ed. New York, NY: Oxford University Press; 2017. https://www.oxfordclinicalpsych.com/view/10.1093/med-psych/9780199928163.001.0001/med-9780199928163-chapter-9.
[3]. Biegel DE, Sales E, Schulz R. Family Caregiving in Chronic Illness: Alzheimer's Disease, Cancer, Heart Disease, Mental Illness, and Stroke. Thousand Oaks, CA: Sage Publications; 1991.
[4]. Zarit, S., Todd, P. & Zarit, J. (1986) Subjective burden of husbands and wives as caregivers: a longitudinal study. The Gerontologist, 26, 260–266.
[5]. Tonelli M, Wiebe N, Manns BJ et al. Comparison of the complexity of patients seen by different medical subspecialists in a universal health care system. JAMA Netw Open 2018; 1: e184852.
[6]. Jafari, Haleh & Ebrahimi, Azita & Aghaei, Abbas & Khatony, Alireza. (2018). The relationship between care burden and quality of life in caregivers of hemodialysis patients. BMC Nephrology. 19. 10.1186/s12882-018-1120-1.
[7]. Rachael C. Walker, Camilla S. Hanson, Suetonia C. Palmer, Kirsten Howard, Rachael L. Morton, Mark R. Marshall, Allison Tong. Patient and Caregiver Perspectives on Home Hemodialysis: A Systemic Review. Am J Kidney Dis. 65(3):451-463.
[8]. Sajadi SA, Ebadi A. Quality of life among family caregivers of patients on hemodialysis and its relevant factors: a systematic review. Int J Community Based Nurs Midwifery. 2017;5(3):206.
[9]. Shukri M, Mustofai MA, Md Yasin MAS, Tuan Hadi TS. Burden, quality of life, anxiety, and depressive symptoms among caregivers of hemodialysis patients: The role of social support. International Journal of Psychiatry in Medicine. 2020 Mar:91217420913388. doi: 10.1177/0091217420913388.
[10]. Giri AP, Mohanasundaram S, Nayar PCK, Sharma RN, Kurian G. Evaluation of mental health using hospital anxiety and depression scale inprimary caregivers of patients undergoing dialysis. Int J Med Sci Public Health 2016;5:1814-1817. doi:10.5455/ijmsph.2016.26112015337