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## **Sleep Disorders and Sleep Quality among Hemodialysis Patients in a Tertiary Hospital in Valenzuela, Philippines: A One Center Cross Sectional Study**

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**Objectives :** Sleep disturbances and poor sleep quality are common in hemodialysis patients, affecting quality of life and increasing cardiac risks. This study aimed to identify risk factors using validated screening tools to guide early detection, recommend objective diagnostics for identified high risk patients to eventually provide comprehensive care, and ultimately improve health outcomes and reduce associated risks.

**Methods :** A cross-sectional study was conducted involving 51 hemodialysis patients. Data on demographics, dialysis adequacy (Kt/V), body mass index (BMI), and sleep outcomes were collected. Validated tools, including the Berlin Questionnaire, Insomnia Severity Index (ISI), and Pittsburgh Sleep Quality Index (PSQI), were used to assess sleep disturbances. Statistical analyses were performed to identify significant associations

**Results :** The prevalence of SDB, moderate insomnia, and poor sleep quality was 68.6%, 31.4%, and 72.5%, respectively. Male sex was significantly associated with SDB (77.1% vs. 25%,  $p = 0.0005$ ), moderate insomnia (81.3% vs. 51.4%), and poor sleep quality (73% vs. 28.6%). Inadequate dialysis adequacy (Kt/V <1.2) was strongly associated with SDB (54.1% vs. 0%), moderate insomnia (75% vs. 22.9%), and poor sleep quality. Overweight and obese patients were also more likely to have SDB (31.4% and 11.4%) and moderate insomnia (50%).

**Conclusions :** Male sex, poor dialysis adequacy, and elevated BMI are significant risk factors for sleep disturbances in hemodialysis patients. Routine screening using validated questionnaires (Berlin, ISI, PSQI) offers a cost-effective strategy to identify high-risk individuals in resource-limited settings like the Philippines. Early detection allows nephrologists to implement timely interventions that improve dialysis adequacy, address weight management, and reduce complications such as cardiac comorbidities. For high-risk patients, recommending more objective assessments like polysomnography ensures comprehensive care and supports better long-term health outcomes and quality of life.

Demogrphatics and Berlin Q - Sleep Disordered Breathing.png



Demographics	Sleep Disorder		P-value
	Yes	No	
<b>Age</b>			
19-35 years old	4 (11.4)	1 (6.3)	0.77886
36-50 years old	6 (17.1)	2 (12.5)	
51-65 years old	15 (42.9)	7 (43.8)	
66-75 years old	6 (17.1)	5 (31.3)	
> 75 years old	4 (11.4)	1 (6.3)	
<b>Sex</b>			
Male	27 (77.1)	4 (25)	0.0005*
Female	8 (22.9)	12 (75)	
<b>Civil Status</b>			
Married	26 (74.3)	15 (93.8)	0.2119
Single	5 (14.3)	0 (0)	
Widow	4 (11.4)	1 (6.3)	
<b>Employment</b>			
Employed	19 (54.3)	6 (37.5)	0.2706
Retired/Unemployed	16 (45.7)	10 (62.5)	
<b>Dialysis Vintage</b>			
1 - 3 years	15 (42.9)	10 (62.5)	0.3944
4 - 5 years	18 (51.4)	5 (31.3)	
6 - 10 years	2 (5.7)	1 (6.3)	
<b>Dialysis Adequacy (Kt/V or URR)</b>			
Yes	15 (42.9)	16 (100)	0.000*
No	20 (57.1)	0 (0)	
<b>BMI (kg/m<sup>2</sup>)</b>			
Normal	18 (51.4)	10 (62.5)	0.0166*
Underweight	2 (5.7)	5 (31.3)	
Overweight	11 (31.4)	1 (6.3)	
Obese	4 (11.4)	0 (0)	

\*Significant

**Table 5. Patient demographics associated with Sleep Disordered Breathing**

Demogrphatics and Berlin Q - Sleep Disordered Breathing.png



Demographics	PSQI Poor Sleep Quality		P-value
	Yes	No	
<b>Age</b>			
19-35 years old	3 (18.8)	2 (14.3)	0.3609
36-50 years old	6 (16.2)	2 (14.3)	
51-65 years old	17 (45.9)	5 (35.7)	
66-75 years old	6 (16.2)	5 (35.7)	
> 75 years old	5 (13.5)	0 (0)	
<b>Sex</b>			
Male	27 (73)	4 (28.6)	0.0041*
Female	10 (27)	10 (71.4)	
<b>Civil Status</b>			
Married	28 (75.7)	13 (92.9)	0.3006
Single	4 (10.8)	1 (7.1)	
Widow	5 (13.5)	0 (0)	
<b>Employment</b>			
Employed	19 (51.4)	6 (42.9)	0.5918
Retired/Unemployed	18 (48.6)	8 (57.1)	
<b>Dialysis Vintage</b>			
1 - 3 years	16 (43.2)	9 (64.3)	0.3433
4 - 5 years	19 (51.4)	4 (28.6)	
6 - 10 years	2 (5.4)	1 (7.1)	
<b>Dialysis Adequacy (Kt/V or URR)</b>			
Yes	17 (45.9)	14 (100)	0.0003*
No	20 (54.1)	0 (0)	
<b>BMI (kg/m<sup>2</sup>)</b>			
Normal	18 (48.6)	10 (71.4)	0.2101*
Underweight	3 (8.1)	4 (28.6)	
Overweight	4 (10.8)	0 (0)	
Obese	12 (32.4)	0 (0)	

\*Significant

**Table 5. Patient demographics associated PSQI Score with Poor Sleep Quality**