

The Influence of Beliefs About Medicines on Medication Nonadherence among Hemodialysis Patients



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INTRODUCTION

- Medication nonadherence among hemodialysis (HD) patients can be caused by erroneous medication beliefs held by them.
- Thus, an evaluation on patients' belief on the risk and benefit of their prescribed medication is essential for the improvement of medication adherence.

OBJECTIVE

- To assess the prevalence of medication nonadherence among HD patients.
- To assess the beliefs about medicine among HD patients.
- To evaluate association of demographic data, beliefs about medicines with the medication nonadherence among HD patients.

METHODOLOGY

Study design: Multi-center, cross sectional study

Study location: HD center Hospital Balik Pulau and seven Non-Government Organization HD centers

Timeline: September 2019 until January 2020 (data collection)

Sample size: N = 325 patients (single proportion formula)

Sampling method

Purposive sampling

Inclusion criteria

more than 18 years old, undergoing HD for at least 6 months, able to understand and communicate in either Malays, English, or Mandarin language, had no cognitive impairment.

Data collection

Data collection form consisted of 4 parts:

- Demographic data and medical status
- Medication list
- 5 items-medication adherence reporting scale (MARS-5) adherence assessment
- Beliefs about medicines questionnaire (BMQ)

Data analysis

- Data was analysed by using SPSS version 18.
- Data was presented using descriptive statistic, chi square, single and multiple logistic regressions.
- P- value < 0.05 was considered statistically significant.

RESULTS

A) Demographic Data

Majority were age 35-44 years old (53.5%), males (54.8%), Chinese (57.2%), secondary school education (55.1%), married (68.3%), live with family member (98.8%) and unemployed (86.8%).

Majority were less 10 years of dialysis (87.1%), 1 to 2 times of hospitalization (39.1%), prescribed with 6-10 medication daily (58.2%) and with most concomitant medical illness of hypertension (88%).

B) Medication Nonadherence

- Prevalence of medication nonadherence with score of MARS-5 <25 was **69.5%** (n=226).
- Total mean score of adherences is 23.41 (SD=1.81).
- None of the demographic variables showed significant correlate with medication nonadherence.

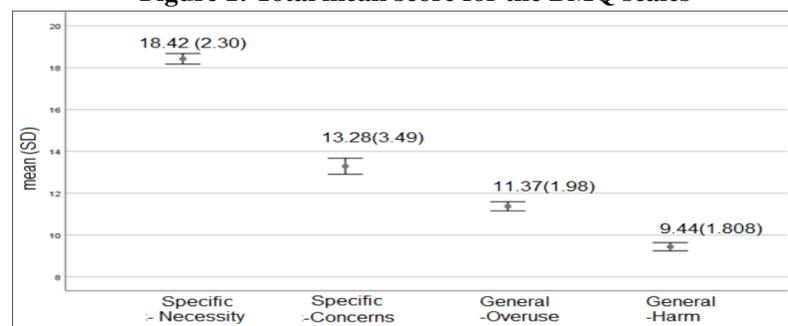
Table 1 Descriptive analysis of adherence parameter by using MARS-5

ITEM MARS-5	Always (1) N (%)	Often (2) N (%)	Sometimes (3) N (%)	Rarely (4) N (%)	Never (5) N (%)
I forget to take my medicines	0 (0)	1 (0.3)	55 (16.9)	135 (41.5)	134 (41.2)
I alter the dose of my medicines	0 (0)	1 (0.3)	16 (4.9)	36 (11.1)	272 (83.7)
I stop taking my medicines for a while	0 (0)	1 (0.3)	14 (4.3)	21 (6.5)	289 (88.9)
I decide to miss out a dose	0 (0)	1 (0.3)	20 (6.2)	38 (11.7)	266 (81.8)
I take less than instructed	0 (0)	0 (0)	17 (5.2)	28 (8.6)	280 (86.2)

RESULTS

C) Beliefs about Medicines

Figure 1: Total mean score for the BMQ scales



-Upper midpoint for Specific -Necessity and Specific - Concerns is (≤ 15.0) on a total scale of 25); for General-Overuse and General - Harm is (≤ 10 on a total scale of 20)

- Ethnicity was found significant correlate with *Specific-Concerns* scale and *General-overuse* scale.
- Age and number of prescribed medication were found correlate with *General-overuse* scale.

Table 2: Logistic regression analysis of BMQ scales with adherence

BMQ Variables	Simple Logistic Regression			Multiple Logistic Regression		
	B	Crude odd ratio (95% CI)	P-value	B	Adjusted odd ratio (95% CI)	P-value
Specific -Necessity						
My medicines protect me from becoming worse	0.55	1.74 (1.06,2.87)	0.03*	0.61	1.84 (1.11,3.07)	0.02
Specific - Concerns						
I sometimes worry about the long-term effects of my medicines	-0.26	0.77 (0.6-0.983)	0.04*			
Having to take medicines worries me	-0.30	0.74 (0.56,0.98)	0.03*	-0.41	0.67 (0.49,0.90)	0.01
General -Harm						
Most medicine are addictive	-0.33	1.39 (1.01,1.94)	0.04*	-0.45	1.57 (1.11,2.22)	0.01

B= Regression coefficient, Constant: -3.245, Forward LR multiple logistic regression model was applied. Multicollinearity and interaction term were checked and not found. Hosmer Lemeshow test (p=0.475), classification table (overall classified percentage =69.2%) and are under the curve (63.3%) were applied to check model fitness. Hosmer Lemeshow test > 0.05, ROC curve > 0.5, classification table ~ 0.70 (slight less than 0.70), model fitness is fit

DISCUSSION & CONCLUSION

Discussion

- Major factor for medication nonadherence is forgetfulness. Hence, medication counselling should be targeted on unintentional nonadherence.
- Patients from different ethnic significantly differ in their perception towards medication side effects.
- Patients with higher number of prescribed medications have more tendency to perceive overuse of prescribed medication for their disease.
- Patient with belief of medication will protect them from becoming worse showed significant higher adherence to medication.
- Nonadherence to medication were significantly more prominent among patient who worries about taking medications and perceived most medication cause addictive to them.

Conclusion

Beliefs about medicines can affect medication taking behavior of the HD patients. Thus, it is important for health care providers to identify and remove patient's misconception towards prescribed medication to minimize the medication nonadherence.

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