Medication Adherence among Adults with Asthma at a Tertiary Teaching Hospital

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Introducing Myself

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Malaysia

- 13 States and 3 Federal Territories

- Population : 26 billion

- Area : 330,000 km²

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Nursing

Health care system

- Universal healthcare system co exits with private healthcare system

- Hospitals : 3 types : general hospitals, district hospitals, and special medical institutions.

- Total 16 general hospitals average of 600 to 700 beds each.

- Total nurses : 90000 (Source NBM 2012) (1:300)

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| Introduction | Vision and Mission | History |

Introduction

· Department of Nursing Science was first established in 1993 as a Nursing Unit under the Department of Allied Health Sciences. It was the first nursing unit to recognize the importance of bacculaurate education in nursing and became the pioneer in the transition in the nursing education from a diploma to a graduate program, Bacherlor of Nursing Science in Malaysia. Ever since its information the unit has been involved in teaching undergraduate courses leading to Bachelor in Nursing.

· The Unit was established as a clinical department: Department of Nursing Science in Faculty of Medicine, University of Malaya on the 1st July 2007.

The Vision of the Department is to be the pioneer in producing Nursing leaders to meet the country's aspiration and bring changes in the healthcare system and nursing profession. With this vision we hope to produce nursing graduates with research culture and practice evidence based nursing. Upon completion, graduates are expected to practice nursing knowledge critically and ethically by applying scientific nursing foundation in health care delivery

About the Department

Staff

Academic Programme

Research

Services

Future Plan

Contact Information

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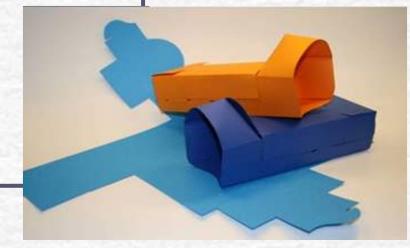University of Malaya,
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OUTLINE OF PRESENTATION

**Introduction
Literature
Methodology
Results
Discussion**

Introduction

- Asthma affects approximately 300 million people worldwide with an additional 100 million patients estimated to be affected by 2015 (Global Initiative for Asthma 2012)

- In Malaysia nearly 1.8million people

(approximately **6.4% of the population** are affected by bronchial asthma

Literature

Various risk factors associated with poor disease control have been described:

- asthma severity
- **patients' knowledge of the disease** (Hamdan et al 2013, Kaptein et al., 2008; Lavoie et al., 2008)
- **attitude and self-efficacy** (Hamdan et al 2013, Kaptein et al., 2008; Lavoie et al., 2008, Mancuso et al., 2010).

Literature

- 39.2% was classified as having controlled asthma, 34.3% has asthma that was partly controlled and 26.5% had uncontrolled asthma (Devi et al 2011)

- No studies exploring effects of knowledge, attitude, and self-efficacy and asthma control

Objective

- To determine the level of
- knowledge, attitude and self-efficacy scores;
- asthma control and
- adherence score;
- To determine the association between socio-demographic characteristics and total asthma control score

Methodology

- Cross sectional descriptive study

- Self report Questionnaire :

1. Socio-demographic characteristics,

2. Knowledge, Attitude and Self-Efficacy Asthma Questionnaire (Leroyer et al 1998)

3. Asthma Control Test (QualityMetric Incorporated 2002)

4. Asthma Control Questionnaires (Juniper et al 1999)

5. Medication adherence (Morisky, Green & Levine 1986)

Instrument

- **Demographic characteristics** (6 items)

- age, sex, education, employment, income

- **Asthma Control Test** (QualityMetric Incorp 2002)

- consists of five items on Likert scale from 1 (all of the time) to 5 (none of the time)

- score below 19 indicating asthma may not be under control.

- Total scores of ACT are calculated by adding the scores of the five items, giving a total score that ranges from 5 to 25.

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Instrument

- **Asthma Control Questionnaires** (Juniper et al 1999)
- Patients ask to recall their experiences during the previous week on 10 items (night time waking, symptoms on waking, activity limitations, short of breath, frustrated coughing, medication wheezing and bronchodilators) on a 7 point scale
- Total scores = 0 to 60
- Total scores above midpoint = better asthma control

Instrument

- **Knowledge, Attitude and Self-Efficacy Asthma Questionnaire** (Leroyer et al 1998)

- 60 questions into three subscales of 20 items

- Patient knowledge about asthma

- Patient attitude towards illness

- Self efficacy regarding the perceived ability to control asthma

- minimum score=20, maximum score=100

- **Medication adherence** 8 items (Morisky,Green & Levine 1986)

Sampling

- Convenience sampling
- Diagnosed as having asthma
- Sample size base on single **mean** (Gerstnman 2008)

$$n = \frac{Z\sigma}{\Delta}$$

$= [1.96(5.4)/0.8] = 175$

n = sample size

Z = confidence level = 1.96

σ = standard deviation = 5.4

Δ = desired level of precision = 0.8

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SETTING : UNIVERSITY MALAYA MEDICAL CENTRE

1000 Beds   65, 000 inpatients   980,210 outpatient

21 Clinical Department   16 Non Clinical Dept

12 Clinical Support Department

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Results

	Frequency N=150	**Percentage**
Age Group(years)		
20-39	23	15.3
40-59	32	21.3
> 60	95	63.3
Gender		
Male	31	20.7
Female	119	79.3
Marital status		
Single	18	12
Married	99	66
Divorce/Widow	33	22

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Results

Educational Level	Frequency	Percentage
No formal education	14	9.3
Primary education	42	28
Secondary education	58	38.7
Tertiary education	36	24
Employment		
Employed	39	26
Self-employed	8	5.3
Non employed	103	68.7
Monthly income		
≥RM2000	76	50.7
RM 2001-4000	52	34.7
< RM 4000	22	14.7

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Objective 1

The mean knowledge score was **5.45 (SD 2.58)** out of a possible score range of (0-20).

The mean attitude score was **81 (SD 8.78) out** of a possible score range of (20-100).

The mean self-efficacy score was **80.65 (SD 7.78)** out of a possible score range of (20-100).

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Results

Knowledge	Freq	%	Mean (SD)
(0-10)	145	97	5.45 (2.58)
(11-20)	5		
Attitude			
(40-69)	13		
(70-100)	137	91	81 (8.78)
Self-efficacy			
(40-69)	19		
(70-100)	131	87	80.65 (7.78)

Results

	Freq	%	Mean (SD)
ACT			
<19	77	51	
>19	73		
Adherence			
High	2	3	47.38 (11.5)
Medium	57	36	
Low	91	71	

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Objective 2

Asthma control

- In multiple analysis, **level of education**, **income**, **age** and **self-efficacy** were seen to be significant predictor ACQ score.
- The adjusted R^2 for this model was 0.32.

Medication adherence

Comorbidities (OR=16.2 CI 7.76-33.84 p<0.01)

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Socio-demographic differences in total asthma control score and multiple linear regression analysis of socio-demographic variables predicting asthma control (N = 150)

Socio demographic variables		Asthma Control	Linear regression model F (9, 141) = 8.90, P < 0.01, Adjusted R2 = 0.32
Age	**Freq**	Mean±SD	Unstandardized beta coefficient (SE)
20-39	23	39.43(12.61)*	4.77(2.71)
40-59	32	46.42(11.29)	3.90(2.64)
< 60	95	49.06(10.48)	Reference

Socio-demographic differences in total asthma control score and multiple linear regression analysis of socio-demographic variables predicting asthma control (N = 150)

Monthly income (RM)	Freq	Mean±SD	Unstandardized beta coefficient (SE)
≥2000	76	43.88(11.90)*	5.60(2.41)
2001-4000	2	50.07(9.69)	5.41(1.72)
< 4000	22	50.63(11.19)	

Socio-demographic differences in total asthma control score and multiple linear regression analysis of socio-demographic variables predicting asthma control (N = 150)

Self-efficacy	Freq	Mean±SD	Unstandardized beta coefficient (SE)
(40-69)	19	34.05(11.06)*	12.48(2.52)*
(70-100)	137	48.90(10.25)	Reference
Marital status			
Single	18	38.61(12.37)*	5.74(2.41)
Married	99	48.97(10.36)	2.84(3.26)*
Divorce/Widow	33	45.72(12.09)	Reference

Discussion

- **low knowledge-** Supported by Sharifi et al., 2011). Contradicts Kumar et al (2011)
- **positive attitude** to asthma. -Contradicts the findings of Boonsawat et al., (2015)
- total **self-efficacy** score for the overall patients was 80.65 out of a possible score range of (20-100) - reflect the patients are **confident** in their ability to manage the asthma – similar to Kumat et al (2011)

Discussion

- **Poor adherence** - supported by Omole et al 2010

- **Poor asthma control** : 51%

Better than the study by Khoo et al (2003) : 73%

Discussion

Several factors can contribute to suboptimal control of asthma including patient factors such as occupational exposure, treatment non compliance and improper technique in the use of metered dose inhalers Guidelines on management of adult asthma: a consensus statement of the Malaysian Thoracic Society(1996)British Thoracic Society. British guidelines on the management of asthma. Thorax (2003)

Recommendations

⌐ Studies have shown that providing patients with

- individual written asthma action plans with advice can improve asthma control and reduce symptoms and unscheduled visits (Gibson PG, Powell H. 2004)

Terima Kasih