

ADHERENCE TO MEDICINES IN PATIENTS SUFFERING FROM CHRONIC CONDITIONS: BELIEFS ABOUT MEDICINES AND LOCUS OF CONTROL

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Background and Aims

- Prevalence of non-adherence to medicines is reported amongst many communities and is considered to be an important determinant of negative health outcomes
- Behavioural models highlight the importance of health beliefs in the decision-making process of patients about their medicines
- AIM: To determine the relationship between adherence to medicines in patients with chronic conditions and beliefs about medicines and health locus of control

Methods

Inclusion criteria

- Patients of any gender with a confirmed diagnosis of asthma, cardiovascular diseases and diabetes.
- Participants had to be adults 18 years or older.
- Well enough to complete the questionnaire.

- Patients from respective out-patients' clinics at Mater Dei Hospital, Malta, were recruited sequentially
- Cross-sectional study employing a self-administered questionnaire.
- The study took place over three months (December 2016-February 2017)

Adherence - TABS

- 'Tool for Adherence Behaviour Screening' (TABS)
- TABS contains 8-item divided in two subscales
 - adherence/nonadherence - each comprising four items answered on a 5-point Likert-scale
- Non-adherence
 - A score less than 19 on the 'adherence' subscale
 - A score more than 8 on the 'non-adherence' subscale
 - Good adherence: Differential of ≥ 15
- Permission from Prof Johnson George was obtained to use the tool

Beliefs

- **Beliefs about Medicines (BMQ) ©Professor Rob Horne**
- BMQ-General: 12 statements - 'general-benefit', 'general-harm', 'general-overuse'
- BMQ-Specific: 11 statements - 'specific-necessity', 'specific-concerns'
- Permission from Professor Robert Horne was obtained to use tool

- **Multidimensional Health Locus of Control Scale (MHLC-C)**
- 18 statements - 6 statements refer to 'Internal', 6 statements refer to 'Chance', 6 statements refer to 'Powerful Others' beliefs (3 statements refer to 'doctors', 3 statements refer to 'other people')
- Permission from Professor Kenneth Wallston was obtained to use tool

Analysis

- Data was inputted into IBM[®] SPSS[®] Version 24 (IBM Corp. Released 2016. IBM SPSS Statistics for Windows, Version 24.0. Armonk, NY: IBM Corp)
- A logistic regression was performed to ascertain the effects of the effects MHLC-C, BMQ and demographics (independent variables) on the likelihood that patients are adherent to medicines (dichotomous dependent variable)
- Difference between chronic conditions was determined by One-Way ANOVA.
- P-values ≤ 0.05 were considered significant

Results - Adherence

- Three-hundred patients were recruited: 100 asthma; 100 cardiovascular conditions; 100 diabetes
- 58% male - Age: 61±15 years
- 82% had suboptimal adherence to medicines
- Mean ± SD adherence score on the 'adherence' subscale was
 - 18.1 ± 2.2 (41% non-adherent)
- Mean ± SD adherence score on the 'non-adherence' subscale was
 - 8.2 ± 3.2 (44% non-adherent)
- The following were associated with an increased likelihood of non-adherence:
 - Male gender ($p = 0.003$)
 - Younger patients ($p = 0.005$)
 - Lower level of education ($p = 0.021$)

Association between MHLC-C and BMQ and overall 'adherence'

- Lower 'SPECIFIC-CONCERN' beliefs were associated with an increased likelihood of adherence ($p = 0.000$, odds ratio 0.848 (95% CI 0.774–0.930))
- Lower 'CHANCE' beliefs were associated with an increased likelihood of adherence ($p = 0.049$, odds ratio 0.945 (95% CI 0.894–1.000))
- Overall, patients had strong 'DOCTORS' beliefs 15.27 ± 2.70

- The mean \pm SD necessity–concern differential was 4.54 ± 6.82
- For 24% the necessity score was lower than concerns score and for 9% it was equal
- The necessity–concerns differential was significantly higher for the adherent group $+7.15 \pm 6.41$ than non-adherent group $+4.04 \pm 6.79$ ($p = 0.004$)

	Adherence	
Beliefs	Odds (CI 95%)	<i>p</i> -Value
Adherence sub-scale		
General-Harm	0.802 (0.718-0.895)	0.000
Specific-Concern	0.902 (0.847-0.962)	0.002
Doctors	1.155 (1.032-1.293)	0.012
Non-adherence sub-scale		
General-Overuse	0.810 (0.705-0.931)	0.003
Specific-Concern	0.853 (0.797-0.913)	0.000
Internal	1.050 (1.005-1.097)	0.031
Other people	0.883 (0.823-0.947)	0.000

Difference between the three chronic conditions

- There was no statistically significant difference in adherence between the three chronic conditions
- 'GENERAL HARM' belief was statistically significantly lower for the diabetes group ($p = 0.042$, 95%CI 0.03-2.03) when compared to cardiovascular patients
- 'SPECIFIC-CONCERN' belief was statistically significantly higher for the asthma group when compared to cardiovascular patients ($p = 0.015$, 95 % CI 0.32-3.74) and when compared to the diabetes group ($p = 0.050$, 95% CI -0.02-3.37)
- 'INTERNAL' belief was statistically significantly lower for the asthma group when compared to cardiovascular patients ($p = 0.000$, 95% CI 2.28-6.78) and diabetes patients ($p = 0.001$, 95% CI 1.33-5.84)
- The necessity-concerns differential was significantly higher for diabetes patients than asthma patients ($p = 0.023$, 95% CI 0.29-5.03)

Limits and Bottom line

- While participants seem to be similar to other populations, caution should be exercised in extrapolating the results to other communities in view of the differences in healthcare systems, practices and cultures
- Higher concern about medicines, greater perceived medicine harm and overprescribing of medicines by doctors translated to lower medicines adherence. Adherence is also significantly associated with health locus of control beliefs
- Beliefs vary also in between different chronic conditions
- Interventions targeting adherence need to recognise patients' beliefs about their conditions and medicines to influence adherence behaviour
- Following preliminary results, data collection was carried out further with the aim of determining whether there is a further relationship between the examined variables

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