Medication Adherence: Use of the Beliefs about Medication Questionnaire in Heart and Lung Transplant patients Liz Painter and Iris Fontanilla Transplant Psychology, Auckland City Hospital, Auckland, New Zealand



### Introduction

The rates of non-adherence to post transplant immunosuppressant medications are around 20% despite rigorous patient selection criteria.

This study reports on the scores obtained from potential heart and lung transplant patients at assessment from the Beliefs about Medication Questionnaire (BMQ). These can aid clinicians to engage patients in treatment decisions and support optimal adherence to medications.

### Results

Measures were completed by 120 heart and 155 lung patients. Overall scores show heart and lung patients were similar. The majority of the patients (90%) are clear in their beliefs about the necessity for taking their medications with about 35% having some concerns, usually about the side effects, general harm and overuse (See Figure 6).

#### Means and standard deviation scores

	Total x	Heart x	Lung x	Total $\sigma$	Heart $\sigma$	Lung $\sigma$
Necessity	2.18	1.72	2.53	3.28	3.11	3.37
Concern	13.67	12.92	14.26	4.6	5	4.17
Harm	12.75	12.34	13.06	3.33	3.6	3.08
Overuse	12.25	11.94	12.5	3.48	3.65	3.33

# Method

All patients evaluated for suitability for heart or lung transplant were routinely administered a battery of questionnaires including the BMQ. Scores were analysed to provide a mean and standard deviation.

# **Background Information**

The NICE Medication Adherence Guidelines recognise that non-adherence may be both unintentional (practical barriers, poor communication or forgetfulness) and intentional (on purpose), based on their beliefs about their illness and treatment.<sup>1</sup>

The Necessity–Concerns Framework is a useful conceptual model for understanding patients' perspectives on prescribed medications. It postulates that adherence is influenced by implicit judgements of personal need for treatment (necessity beliefs) and concerns about the potential adverse consequences of taking medications.<sup>2</sup> Figure 1: Goodness of Fit between illness beliefs and treatment recommendations





**Figure 2: Necessity Beliefs** 

#### **Figure 4: Poor Adherence**

Patients know what to do & how to do it BUT are reluctant to adhere because either:



### Figure 5: Necessity-Concern Framework and Beliefs about Medication Questionnaire



Patients rationalise the benefit of the recommended treatment versus their illness beliefs (Figure 1).

Patient's medication beliefs have been shown to be best predictor for adherence in a range of illness conditions and treatment regimens

## **BMQ Measures**

The BMQ measures Necessity Beliefs and Concerns.<sup>3</sup>

The BMQ-General comprises of two 4-item factors assessing beliefs that medicines are:

- General-Harm (harmful, addictive, poisons which should not be taken continuously) (Score range: 0-16).
- General-Overuse (and that medicines are overused by doctors) (Score range: 0-16).

The BMQ-Specific comprises of two 5-item factors assessing beliefs about:

"I have no problems at all with taking medication. Always have taken this very seriously..."

### **Figure 3: Concern beliefs**



"I sometimes self-dosed based on my knowledge."

"My medication is part of my life and sometimes I do forget a dose but never want to stop. Otherwise life would stop. Life is too precious."

### Figure 6: BMQ Mean Scores, N=275



- Specific-Necessity (the necessity of prescribed medication) (Score range: 0-24).
- Specific-Concern (the danger of dependence, longterm toxicity and the disruptive effects of medication) (Score range: 0-24) (See Figures 2-5).

Likely good adherence is predicted by having low Necessity and high Concerns, Harm and Overuse Scores

> **Disclosures** The Authors have no relationships to disclose.

### Conclusion

- > Scores from the BMQ help to identify potential barriers and unhelpful beliefs.
- Adherence is associated with stronger perceptions of Necessity for treatment and fewer Concerns about adverse consequences.
- Routine clinical practice in our service focuses on tailored individual interventions prior to transplantation to address concerns and to enhance adherence.
- Adherence continues to be monitored post transplant using the Immunosuppressant Therapy Adherence Scale (ITAS)<sup>4</sup>
- Data is being collected to monitor the impact of interventions on pre and post transplant adherence behaviours.

#### References

- 1. NICE: Medicines adherence: involving patients in decisions about prescribed medicines and supporting adherence Clinical guideline [CG76] Published date: January 2009 © NICE 2017.
- 2. Horne R, et al. Understanding patients' adherence-related beliefs about medicines prescribed for long-term conditions: a meta-analytic review of the Necessity-Concerns Framework. PLoS One. 2013; 8(12):e80633.
- 3. Horne R, et al. The beliefs about medicines questionnaire: The development and evaluation of a new method for assessing the cognitive representation of medication. Psychology & Health. 1999.; 14(1): 1-24.
- 4. Chisholm MA, et al. Development and validation of an immunosuppressant therapy adherence instrument. Patient Educ Couns. 2005;59(1):13–20.