"Pride and prejudice" in sarcoidosis. Does a prescribed treatment match a patient's priorities?

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Abstract

BACKGROUND: Sometimes sarcoidosis patients need a life time treatment. In this study we wanted to elucidate the patients perception about medications used to treat sarcoidosis. We also want to test the influence of gender, education and sarcoidosis duration using Beliefs about Medications Questionnaire (BMQ).
METHODS: 92 biopsy positive sarcoidosis patients were enrolled in this study. (70female/22male) mean age 50±12yrs. Education: 30 patients -elementary school, 45pts- high school and 17pts- university. Duration of therapy: 26pts were treated for sarcoidosis from 1-5 years, 15 for 6-10 years and 13pts for10 years or longer. Patients were given self-administered BMQ, an 18 item questionnaire assessing beliefs about specific medications and beliefs about medications in general. There are 4 subscales including: specific necessity, specific concern, harmful effects of sarcoidosis medicines , general overuse, and general harm. Scoring: 5 point Likert scale-a higher score indicates a stronger belief. The reliability was assessed using intraclass correlation coefficient (ICC) and Cronbach alpha; the differences in BMQ scores and the education level one way MANOVA, while the differences in BMQ scores between gender and therapy duration for sarcoidosis were analyzed using Mann Whitney test. **RESULTS:** High reliability was found for specific necessity (Cronbah α=0.83; ICC 95% Confidence Interval 0.77-0.88), harmful effects (Cronbah α=0.67; ICC 95% Confidence Interval 0.54-0.76) and general harm (Cronbah α=0.78; ICC 95% Confidence Interval 0.71-0.85).Significant but low reliability was found between the items of overuse (Cronbah α=0.43; ICC 95% Confidence Interval 0.20-0.61). Males (mean 3.34) perceived medications in general to be more harmful than females (mean 2.86) and also strongly believe that mendicants are overused. P =0.001. Considering the general harm and duration of sarcoidosis least prejudice had patients with the longest treatment -more that 10 yrs. (2.49).The difference was statistically significant between the groups. P= 0.008.Analyzing the level of education the highest prejudice for harmful effects had patients with the highest university degree. (2.74) p=0.000.The age significantly correlated with all BMQ scores.
CONCLUSION: Patients' priorities may be very different from prescribers' priorities, or indeed from the priorities prescribers assume their patients to have.

Introduction

Beliefs and attitudes about illness influence adherence to treatment. In fact, beliefs about medicines predict adherence even more strongly than clinical factors.
It is estimated that 30–50% of people do not adhere to their prescribed treatment.

Non-adherence may result in unnecessary health costs, investigations, and changes in treatment, morbidity and mortality.

Investigating medication beliefs is especially important in sarcoidosis as in some patients it is a chronic disease, and people are usually advised to take potentially toxic drugs, including steroidal, non-steroidal anti-inflammatory drugs and immunosuppressive therapy , which may be only partially effective.

In this study we wanted to examine the beliefs about medicines using the Beliefs about Medicines Questionnaire (BMQ) in our sarcoidosis patients.

We also wanted to explore the relation between the beliefs about medicines with social and demographic characteristics, and the disease duration in our patients.

BMQ ITEMS

BMQ-Specific

• Rated: strongly agree, agree, uncertain, disagree, strongly disagree

• My health, at present, depends on my medicines
• Having to take medicines worries me
• My life would be impossible without my medicines
• Without my medicines I would be very ill
• I sometimes worry about long-term effects of my medicines
• My medicines are a mystery to me
• My health in the future will depends on my medicines
• My medicines disrupt my life
• I sometimes worry about becoming too dependent on my medicines
• My medicines protect me from becoming worse

BMQ-General

• Rated: strongly agree, agree, uncertain, disagree, strongly disagree

• Doctors use too many medicines
• People who take medicines should stop their treatment for a while every now and again
• Most medicines are addictive
• Natural remedies are safer than medicines
• Medicines do more harm than good
• All medicines are poisons
• Doctors place too much trust on medicines
• If doctors had more time with patients they would prescribe fewer medicines.

Beliefs about medications questionnaire (BMQ) is an 18 item questionnaire assessing beliefs about specific medications and beliefs about medications in general. There are 4 subscales including specific necessity (it is necessary), assessing beliefs about the necessity and efficacy of medicines prescribed for sarcoidosis (e.g. "Without sarcoidosis medicines I would be quite ill"), specific concern, assessing beliefs about concern about the harmful effects of medicines prescribed for sarcoidosis (e.g. "Having to take sarcoidosis medicines worries me"), general overuse, assessing beliefs about the overuse of medicines in general (e.g. "Doctors use too many medications") and general harm, assessing beliefs about harm associated with medications in general (e.g. medicines do more harm than good"). Items are rated on a 5 point Likert scale and a higher score indicates a stronger belief.

Statistical methods

The reliability of BMQ items in our patients was assessed using Intraclass Correlation Coefficient (ICC) and Cronbach alpha.
The differences of BMQ scores and the educational levels of our patients were evaluated using one way MANOVA, while the differences of BMQ scores with gender and duration of sarcoidosis were analyzed using Mann Whitney test.
Relation between the age of our patients and BMQ scores was evaluated using linear regression procedure

Significant reliability was estimated for:

- **"Necessity-Efficacy" items (Cronbach α=0.83; ICC 95% Confidence Interval 0.77-0.88),**
- **"Harmful effects" items (Cronbach α=0.67; ICC 95% Confidence Interval 0.54-0.76) and**
- **"General-Harm" items (Cronbach α=0.78; ICC 95% Confidence Interval 0.71-0.85).**
- **Low reliability was estimated for "Overuse" items (Cronbach α=0.43; ICC 95% Confidence Interval 0.20-0.61).**

Patients

In this study 92 biopsy positive sarcoidosis patients were enrolled (70 female / 22 male), mean age 50±12years.

Table 1. Duration of sarcoidosis

Duration of sarcoidosis	Number of patients
Less than 1 year	36 (39%)
1-5 years	28 (30%)
6-10 years	15 (17%)
Longer than 10 years	13 (14%)

Table 2. Level of education

Level of Education	Number of patients
Elementary school	30 (33%)
High school	45 (49%)
University	17 (18%)

Table 3. Group statistics: BMQ scores and gender

BMQ scores	gender	N	Mean	SD	p
Necessity-Efficacy	female	70	2.1543	.65865	0.575
	male	22	2.3273	.85645	
Harmful effects	female	70	2.5400	.65262	0.317
	male	22	2.6182	.62916	
General-Harm	female	70	2.8657	.62482	0.001
	male	22	3.3455	.81224	
Overuse	female	70	3.2190	.45003	0.036
	male	22	3.4091	.41060	

Significant difference was noticed between male (higher scores) and female patients analyzing the item "General Harm"; significantly higher BMQ scores were also found analyzing the item " Overuse" in male patients.

Males perceived medications in general to be more harmful than females did, and males also believed more strongly that medications are overused. Our data correlates with the similar study: "Perceptions and beliefs in sarcoidosis". ***J. Ireland, M. Wilsher (Sarcoidosis Vasc Diffuse Lung Dis 2010; 27: 36-42)***

Table 4. Group statistics: BMQ scores and duration of sarcoidosis

BMQ scores	Duration of sarcoidosis	Mean	SD	N	P
Necessity-Efficacy	<1year	2.2889	.77304	36	0.211
	1-5years	2.3000	.77460	28	
	6-10years	1.9467	.55789	15	
	>10years	2.0000	.43970	13	
	Total	2.1957	.70973	92	
Harmful effects	<1 year	2.6889	.62234	36	0.234
	1-5 years	2.5500	.68987	28	
	6-10 years	2.4400	.46721	15	
	>10 years	2.3538	.76225	13	
	Total	2.5587	.64453	92	
General-Harm	<1 year	3.1222	.64547	36	0.008
	1-5 years	3.1214	.84387	28	
	6-10 years	2.8000	.41404	15	
	>10 years	2.4923	.54538	13	
	Total	2.9804	.70043	92	
Overuse	<1 year	3.3241	.51938	36	0.021
	1-5 years	3.3810	.29696	28	
	6-10 years	3.1333	.45075	15	
	>10 years	3.0000	.38490	13	
	Total	3.2645	.44622	92	

Significant correlation was found between the disease duration and BMQ items: "General Harm" and "Overuse". The lowest BMQ scores were noticed in patient group with sarcoidosis duration for more than 10 years.

Table 5. Group statistics: level of education and BMQ scores

BMQ scores	Level of education	Mean	SD	N	p
Necessity-Efficacy	elementary	2.0067	.65281	30	0.000
	high	2.3289	.69695	45	
	university	2.1765	.79963	17	
	Total	2.1957	.70973	92	
Harmful effects	elementary	2.4200	.66716	30	0.000
	high	2.5822	.60876	45	
	university	2.7412	.68105	17	
	Total	2.5587	.64453	92	
General-Harm	elementary	2.7533	.76777	30	0.000
	high	3.1067	.66688	45	
	university	3.0471	.59384	17	
	Total	2.9804	.70043	92	
Overuse	elementary	3.1444	.46882	30	0.000
	high	3.3481	.43783	45	
	university	3.2549	.40016	17	
	Total	3.2645	.44622	92	

Statistically significant correlation was found for all the domains of BMQ questionnaire considering the level of education. Patients with elementary school only, (lowest education level) had the lowest BMQ scores. It is peculiar to observe that patients with higher level of education had stronger belief that medications are harmful and overused.

Table 6. Linear regression model (BMQ scores and age)

						95% Confidence Interval for B	
Dependent Variable	Predictor	B	SE	t	p	Lower Bound	Upper Bound
Necessity-Efficacy (a)	(age)	.040	.002	19.279	.000	.036	.044
Harmful effects (b)	(age)	.048	.002	24.553	.000	.044	.052
General-Harm (c)	(age)	.055	.002	23.699	.000	.050	.060
Overuse (d)	(age)	.061	.002	30.855	.000	.057	.065

a.R Squared = .803 (Adjusted R Squared = .801)
b.R Squared = .869 (Adjusted R Squared = .867)
c.R Squared = .861 (Adjusted R Squared = .859)
d.R Squared = .913 (Adjusted R Squared = .912)

Significantly positive correlation was found between patients age and BMQ scores.
Older patients more strongly perceived the medications were overused.

Conclusion

- **Statistically significant reliability was found between the BMQ scores within all the domains ("Necessity-Efficacy", "Harmful effects", and "General Harm"), while the reliability for "Overuse was low".**
- **Correlation was significant within the domain of "General Harm" analyzing gender and disease duration, while the age of our patients and the level of education had significant correlation with all BMQ items.**

Patients' priorities may therefore be very different from prescribers' priorities, or indeed from the priorities that prescribers assume their patients to have.