

Patients' preferences as to the solid forms of oral medications – results of the discrete choice experiment in Polish outpatients.

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Background & aim

Non-adherence with drug treatment is widespread. Personal beliefs and related preferences play an important role in the patients' decision process whether to adhere to the treatment, or not.

The purpose of this study was to assess the Polish outpatients preferences as to the solid forms of oral medications to be used in different treatment scenarios.

Methods

This was a discrete choice experiment (DCE) based study in primary care patients.

Patients enrolled in the study were provided with a selection of both tablets and capsules, in different shapes, sizes, and colors, and copayment levels, being presented as pairs (see Fig. 1), and were asked to assess them according to their preferences, for either chronic (e.g. for hypertension treatment), or short-term use (e.g. short-term antibiotic treatment).

DCE results were analyzed, and relevant MXL (mixed logit) models were specified, which assume heterogeneous preferences distribution among respondents.



Figure 1
Selection of the drug pairs presented to the study participants in order to learn their preferences (variables included shape, size, color, and copayment level)

Results

The convenience sample of 200 outpatients took part in this study.

MXL models of patient preferences, for both chronic, and short-term treatment, are presented in table 1 and 2, respectively. Models present results as expressed in monetary values (in PLN – Polish zlotys, 1 PLN = 0.25 €), as compared to the basic version, i. e. small, round tablet:

The most preferred combination of drug parameters were:

- For chronic treatment: small yellow capsule (study participants were happy to pay extra 6.72 PLN for this drug formulation per month)
- For short-term treatment: small yellow long tablet (study participants were happy to pay extra 14.44 PLN for this drug formulation per entire 7-days long treatment)




variable	Means			Standard Deviations		
	Coefficient	Standard error	p-value	Coefficient	Standard error	p-value
long tablet 	1,7200	0,2697	0,0000	0,0075	0,3506	0,9828
capsule 	3,8513	0,2383	0,0000	1,4861	0,3489	0,0000
medium	-10,7696	0,2935	0,0000	2,4734	0,6168	0,0001
large	-21,8970	0,6958	0,0000	7,6451	1,7427	0,0000
yellow	2,8655	0,6180	0,0000	0,5136	0,5064	0,3105
blue	-2,6484	0,3049	0,0000	0,0068	0,5799	0,9906
red	-4,6927	0,3852	0,0000	0,4848	0,3351	0,1480

Table 1
MXL model of patients preferences with CHRONIC treatments (e.g. hypertension)
Note: results are expressed in monetary values (in PLN – Polish zlotys), as compared to the basic version, i. e. small, round tablet: 



variable	Means			Standard Deviations		
	Coefficient	Standard error	p-value	Coefficient	Standard error	p-value
long tablet 	8,9242	0,8641	0,0000	2,6780	0,8492	0,0016
capsule 	8,1577	0,9267	0,0000	1,3957	1,2680	0,2710
medium	-10,4051	0,8212	0,0000	4,0494	1,0011	0,0001
large	-18,7443	0,7917	0,0000	9,4450	1,2309	0,0000
yellow	5,5175	0,9762	0,0000	0,5407	1,3965	0,6986
blue	0,8835	0,8534	0,3005	1,0000	1,0613	0,3461
red	-0,3782	1,2039	0,7534	4,0824	1,0068	0,0001

Table 2
MXL model of patients preferences with SHORT-TERM treatments (e.g. antibiotic)
Note: results are expressed in monetary values (in PLN – Polish zlotys), as compared to the basic version, i. e. small, round tablet: 

Conclusions

Results suggest that color, shape and size of solid forms of oral medications are important predictors of patients' acceptance. Not only they can be expressed in monetary value, but also may serve as an important hint for those designing new drugs, in order to assure best possible adherence.

In Poland, patients are free to take their own choices when being dispensed drugs from community pharmacies, due to the law that enables generic substitution. Thus, their preferences may serve for the basis of pharmacy-based interventions, aiming to improve adherence at the individual level.

Our findings are probably country/culture specific, and further research is necessary to better understand the relationship between solid drug formulations, and patient preferences across the countries.