

## Validity of a Questionnaire Measuring the Impact of Co-payments on Medication Adherence

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**Introduction.** Although small co-payments for reimbursed medications may be needed to prevent inappropriate drug consumption and to increase the perceived value of the drug, larger co-payments have a clearly detrimental effect. The current reimbursement system in Latvia, in which only 50% of the medication costs for IBD treatments are reimbursed, is unique in European context and a significant obstacle for many patients to access medication for long-term use. Yet, to the author's best knowledge there have been no attempts to quantify the effect the co-payments have on patients' willingness to use long-term medication.

**Aim.** The aim of the study is to create and check validity of a short questionnaire which would evaluate how patients' co-payments influence their medication use.

**Material and Methods.** The questionnaire was given to in-patients at Pauls Stradins Clinical University Hospital as part of a larger battery of tests evaluating patients' medication use. Also a group of out-patients were contacted over telephone, and after agreeing, they received the questionnaire by post. Patients' income level was assessed by asking what their household income is in relationship to the average income in Latvia (below, above or at the same level) and by asking them to mark that income on a visual analogue scale with "0" on the far left, the country's average income in the middle and "2000 Euros" mark near the right end. To assess the impact on adherence the patients were asked if the co-payments influenced their ability to take medications, how often they had to choose which medications to buy and how often they had to re-plan other expenses to afford paying for the drugs. The statistical analysis was done using SPSS V20.0 (IBM).

**Results.** 41 patients (27 in-patients and 14 out-patients) completed the questionnaires, but only 34 had answered all the questions. 24 patients were males and 17 were females. Mean age was 37.6 years (min. 18, max 68) and the number of patients with Crohn's disease and ulcerative colitis was almost equal (19 vs. 21, respectively). One patient answered that he did not know the type of disease. The overwhelming majority – 37 patients responded that co-payments influence their medication use. 22 patients answered that they had to re-plan other expenses at least once a month or more often to buy their drugs. 25 patients sometimes did not buy all their medications and there were 5 patients who had to do that at least once a month and 5 patients who never bought all their prescribed medications. Cronbach's alpha coefficient for all five items was an acceptable 0.69, but if the last (fifth) question about cost-coping behaviour was deleted, then the value of Cronbach's alpha increased to 0.72. We did not have the possibility to assess for the reliability with repeated testing. In subgroup analysis the scale seemed more valid for Crohn's disease rather than ulcerative colitis and for males than for females (alpha 0.75 vs. 0.68 and 0.70 vs 0.65, respectively). The effect of the fifth question was most notable in male patients, as the removal increased the alpha value to 0.80, whereas for female patients the question about co-payment's influence on medication used seemed of least value.

**Conclusions.** The results show a rather bleak picture of patients' medication taking behaviour, with co-payments having some effect on most of the patients. And the scale seems a valid way to assess the effect of cost-sharing on patient's medication use. But given the unusually high co-payment in our country it is not clear if the results are applicable outside the region of the test.