

Do patients understand our medication charts?

Comprehension of and preferences for medication charts. Evaluation through patient interviews.

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Introduction

Patients leaving hospital often have to continue their treatments without help. It is therefore most important to provide all necessary information, e.g. in medication charts (MCs), adapted to the patient's health literacy¹.

So far it is unknown how these MCs differ from hospital to hospital and if they meet the patient's needs and wishes.

Methods

Established MCs were identified through literature research. Fortyfive patients from internal medicine, surgery and dialysis wards of the study site hospital were approached in a semi-structured interview regarding:

- comprehensibility of instructions in standard MCs
- patient's preferences for design and content of MCs

Conclusion

Many dosing instructions in today's medication charts may be misunderstood by patients. Through consideration of a suitable content (e.g. by avoiding abbreviations) patient safety might be improved. This is also true for dosing labels on drug packages.

Patients prefer a specific content and order of information in a medication charts. They should therefore strongly be involved in design and content definition.

Results

Patients

67.6 ± 12.0 y old, 40% female. 24 already received a medication chart before, three work(ed) in the health sector.

Comprehensibility of instructions

Comprehension of different dosing instructions are given in table 1-3. Least understandable was a dosage instruction in milligrams (20%). Table 4 shows interpretation of the instruction "on empty stomach".

Comprehension correlated with health literacy, evaluated through HLS-EU-Q16² (Spearman correlation coefficient 0.52).

Preferences for medication charts

In addition to standard content of MCs (medication, strength, form, amount, frequency), patients preferred most:

1. Notes (e.g. take with a glass of milk)
2. Reason for therapy
3. Duration of therapy

Asked to position different contents in a frame, first positions in a chart were for:

1. Medication name
2. Active compound
3. Dosage

Table 1: Medication chart with Zegerid Capsules (not registered in Switzerland) and intake times "Mo" for Morning, "Mi" for Midday, "Ab" for Abend (Evening) and "Na" for Nacht (Night, Bedtime). Zegerid should be taken in the morning. If this was misunderstood, other answers are listed. (n=45)

Medication	Mo	Mi	Ab	Na	Notes	Correct time point	
						understood	misunderstood
Zegerid Capsules 20mg	1	0	0	0	-	33 (73.3%)	11 (24.4%): 'Monday' 1 (2.2%): no answer

Table 2: Medication chart with Motrin and Actamin tablets (both not registered in Switzerland), to take if needed in case of pain with different dosing schemes. Maximum daily dose of Motrin and Actamin are 3 and 8 tablets respectively. If this was misunderstood, other answers are listed. (n=45), *no answer

Medication	Mo	Mi	Ab	Na	Notes	Correct max. daily dose	
						understood	misunderstood
Motrin Tablets 600mg	-	-	-	-	in case of pain, take max. 3x/d 1 tbl	37 (82.2%)	1 (2.2%): '1 tablet' 7 (15.6%): na*
Actamin Tablets 500mg	-	-	-	-	in case of pain, take max. 2 tbl max. 4x/24h	19 (42.2%)	15 (33.3%): '4 tablets' 4 (8.9%): '2 tablets' 7 (15.6%): other or na*

Table 3: Medication chart with two liquid formulations (both not registered in Switzerland). The correct amounts per dose are 3 measuring spoons of Mucomyst and 1 milliliter of Unisom Solution. If correct amount per dose was misunderstood, other answers are listed. (n=45), # ML = Messlöffel, german for measuring spoon, * no answer

Medication	Morning	Midday	Evening	Bedtime	Notes	Correct amount per dose	
						understood	misunderstood
Mucomyst Solution 200mg/5ml	3 ML#	0	0	0	-	11 (24.4%)	26 (57.8%): '3 milliliter' 8 (17.8%): other or na*
Unisom Solution 10mg/ml	0	0	0	10 mg	-	9 (20.0%)	20 (44.4%): '10 milliliter' 16 (35.6%): other or na*

Table 4: Given the medication chart with the instruction: "Take 1 capsule in the evening, on empty stomach" was interpreted differently by patients when asked how they would take the medication. 42 answers are shown. Three patients understood other meaning than in relation with food. (n = 45)

Intake on empty stomach: patient's interpretation	n (%)
Take before dinner <ul style="list-style-type: none"> • 1 hour before (2) • ½ hour before (8) • directly before dinner (13) • No or other answers e.g. 5-10 or 20 min. before meal (3) 	26 (57.8%)
Don't eat or drink min. 4-6 hours before intake	3 (6.7%)
'Evening and empty stomach' is a contradiction. → no answer or possible resolution given: 'take before breakfast the next day', 'skip lunch that day', 'take at bedtime' or 'during the night'.	13 (28.9%)

Literature

¹ Maniaci, M.J., Heckman, M.G., Dawson, N.L., Functional Health Literacy and Understanding of Medications at Discharge. Mayo Clin Proc, 2008. 83(5): p. 554-58.

² Röthlin F, et al. Die Gesundheitskompetenz der 15-jährigen Jugendlichen in Österreich. LBIHPR, 2013, http://lbihpr.lbg.ac.at/w8.netzwerk.com/sites/files/lbihpr/attachments/hljugend_bericht.pdf accessed on september 11st 2015

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