SUBJECTIVE EXPECTATIONS ON LIVING WITH INNOVATIVE DIGITAL IMPLANTABLE MEDICAL DEVICES AT OLDER AGES

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Background

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The vision people have towards their future health and treatments can be deterministic for their current health-related decisions. Unrealistic subjective health expectations and a biased perception of ageing can be burdensome and may influence health-related decisions in the wrong direction.

- How long shall I live?

- What kind of health problems shall I have at older ages?

- What solutions will be available then and which ones will I have access to? Health technologies, social care, informal care…

Péntek M et al. Subjective expectations regarding ageing: a cross-sectional online population survey in Hungary. Eur J Health Econ. 2019 Jun;20(Suppl 1):17-30.
Péntek M et al. Subjective expectations regarding length and health-related quality of life in Hungary: results from an empirical investigation. Health Expect. 2014 Oct;17(5):696-709.
Péntek M. et al. Subjective health expectations at biological therapy initiation: a survey of rheumatoid arthritis patients and rheumatologists. Eur J Health Econ. 2014 May;15 Suppl 1:S83-92.
Péntek MÍ et al. Subjective health expectations of patients with age-related macular degeneration treated with antiVEGF drugs. BMC Geriatr. 2017 Oct 10;17(1):233.

Background (cont.)

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Innovative medical technologies: Implantable medical devices (IMDs)

- can be encouraging (there will be a solution for my health problem: e.g., hearing, vision, mobility), lowers fears from longevity
- can have a 'bagatelizing' effect thus decrease personal preventive efforts (e.g., no need to care much about my health and healthy lifestyle, technologies will solve my problems)

Objectives

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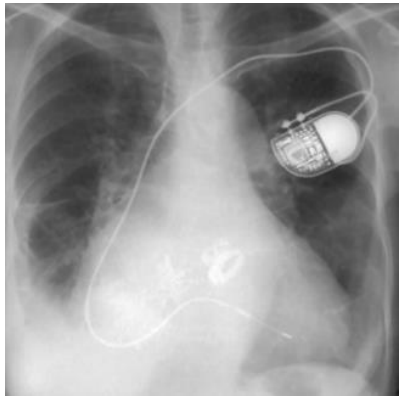
The aim of our study was to explore **subjective expectations** of the adult general population **on having IMDs as they get older**, with special focus on two digital IMDs,

- pacemaker and
- continuous glucose monitor (CGM).

For comparisons

- tooth implants

were surveyed.



Methods: Study design and participants

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Study

- Cross-sectional online survey, population sample aged 40 and over
- Representative for the Hungarian general population by sex, age (up to age 65), educational level and residency

Sample characteristics

N=1400; female 752 (53.7%)

Mean age 58.3 (SD=11.1) years

Any implant in their history: 584 (41.7%)

Methods: Survey

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Survey

Part of a larger survey.

Module on subjective expectations:

- IMDs respondents subjectively expect to have at ages 50, 60, 70, 80 and 90.
- Questions were presented only for older ages than the respondent's actual age
- List of IMDs
- Further response options: 'Other' or 'None'.
- Subjective life expectancy

Example:

At the age of 80, what kind of permanent medical device (implant) do you think you will have in your body?(Only respondents younger than 80 years old are asked this question)

☐ Hip replacement
☐ Knee replacement
☐ Implanted eye lens (cataract surgery)
☒ Dental implant (tooth implantation)
☐ Heart rhythm regulator (pacemaker)
☒ Subcutaneous blood glucose monitor (sensor) for diabetes

Results: Demographics

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Variables	Younger than age …				
	50	60	70	80	90
N	378	739	1148	1369	1400
Female	202 (53.4%)	403 (54.5%)	644 (56.1%)	738 (53.9%)	752 (53.7%)
Education					
primary	139 (36.8%)	259 (35.0%)	369 (32.1%)	405 (29.6%)	410 (29.3%)
secondary	133 (35.2%)	269 (36.4%)	448 (39.0%)	525 (38.3%)	533 (38.1%)
tertiary	106 (28.0%)	211 (28.6%)	331 (28.8%)	439 (32.1%)	457 (32.6%)
Residence					
capital	85 (22.5%)	154 (20.8%)	231 (20.1%)	302 (22.1%)	315 (22.5%)
city	190 (50.3%)	390 (52.8%)	624 (54.4%)	733 (53.5%)	749 (53.5%)
village	103 (27.2%)	195 (26.4%)	293 (25.5%)	334 (24.4%)	336 (24.0%)
Paid work	351 (92.9%)	692 (93.6%)	1062 (92.5%)	1257 (91.8%)	1287 (97.9%)
Married / having a partner	235 (62.2%)	458 (62.0%)	714 (62.2%)	837 (61.1%)	854 (61.0%)

Results: Subjectively expected IMDs

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Expected IMD N (%) [95%CI]	Expects to have at age …				
	50	**60**	**70**	**80**	**90**
Sample, N	378	739	1148	1369	1400
Pacemaker	21 (5.6%) [3.5-8.4%]	45 (6.1%) [4.5-8.1%]	65 (5.7%) [4.4-7.2%]	72 (5.3%) [4.1-6.6%]	46 (3.3%) [2.4-4.4%]
CGM	17 (4.5%) [2.6-7.1%]	26 (3.5%) [2.3-5.1%]	53 (4.6%) [3.5-6.0%]	58 (4.2%) [3.2-5.4%]	27 (1.9%) [1.3-2.8%]
Tooth implant	123 (32.5%) [27.8-37.5%]	208 (28.1%) [24.9-31.5%]	295 (25.7%) [23.2-28.3%]	274 (20.0%) [17.9-22.2%]	129 (9.2%) [7.8-10.9%]

Results: Prevalence of IMDs

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Variables N (%) [95%CI]	Age group (years)				
	41-50	**51-60**	**61-70**	**71-80**	**81-90**
N	367	374	403	197	22
Female	198 (54.0%)	211 (56.4%)	231 (57.3%)	82 (41.6%)	11 (50.0%)
Pacemaker	4 (1.1%) [0.3-2.8%]	2 (0.5%) [0.1-1.9%]	2 (0.5%) [0.1-1.8%]	7 (3.6%) [1.4-7.2%]	0 [0-15.4%]
CGM	1 (0.3%) [0-1.5%]	0 [0-1.0%]	0 [0-0.9%]	0 [0-1.9%]	0 [0-15.4%]
Tooth implant	30 (8.2%) [5.6-11.5%]	33 (8.8%) [6.2-12.2%]	42 (10.4%) [7.6-13.8%]	18 (9.1%) [5.5-14.1%]	6 (27.3%) [10.7-50.2%]

Results: Expected vs. actual IMDs

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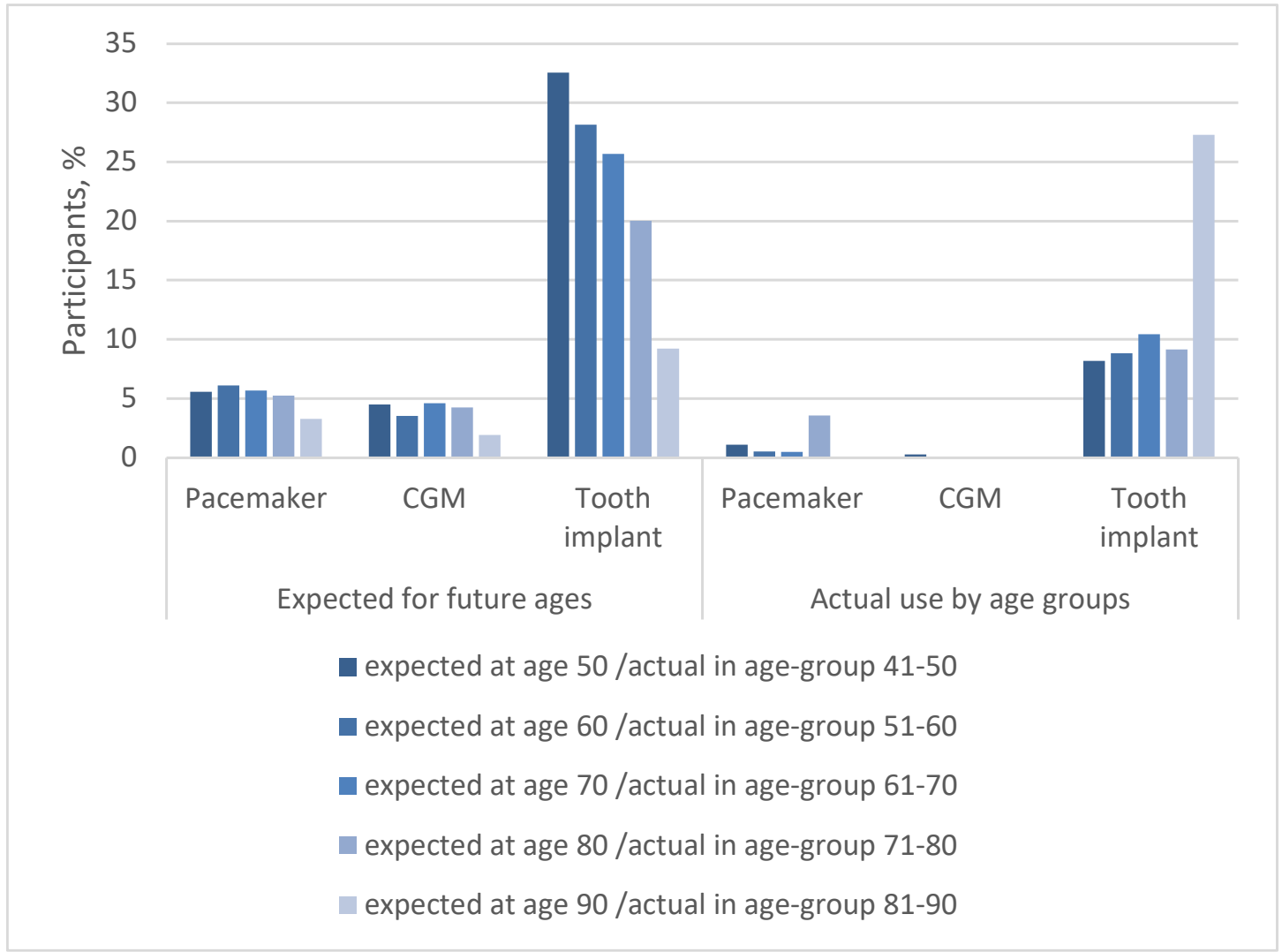

Results: Subjective life expectancy

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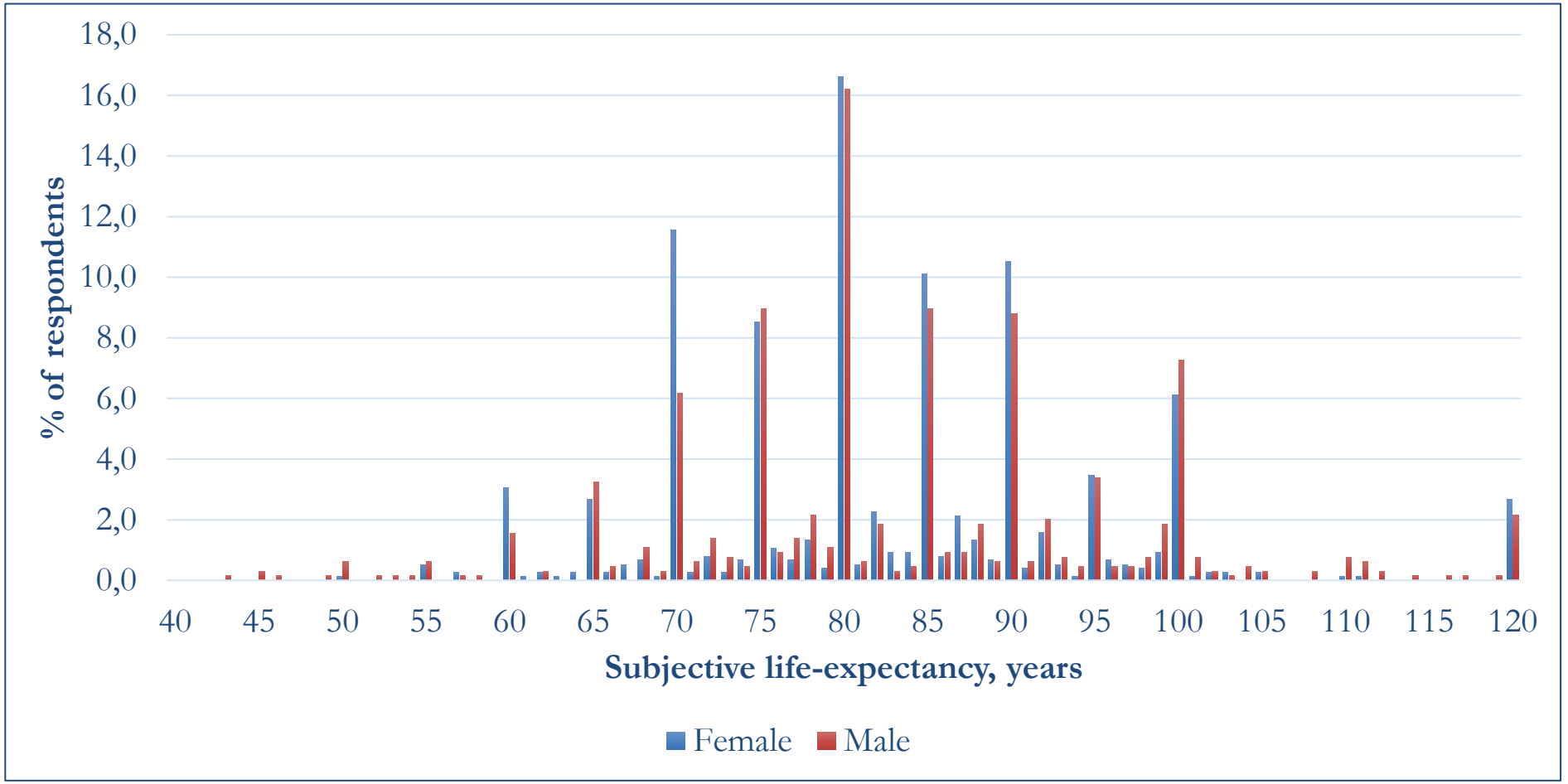
sLE: 43 – 120 years
mean
females 82.5 (SD= 12.2),
males 83.6 (SD=13.3)

The share of participants who expected to live ***shorter*** than age:

50 → 1.3%
60 → 3.4%
70 → 11.4%
80 → 34.9%
90 → 68.8%



Conclusions and implications for practice

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First market insight into the subjective expectations of the general public on IMD use at older ages.

There is a **gap** between the subjectively expected and the actual / predictable use of implantable medical devices.

Good health-related and medical decisions require well informed patients.

- Programs should be developed to inform the potential future patients about the prevalence of chronic diseases in the elderly, current use and future trends of implantable medical devices.
- The scarcity of reliable country-specific data is a major barrier of reliable patient information projects.
- The development, maintenance, and publication/dissemination of national implantable medical device and patient registries is needed.

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