HTA273

Erasmus School of Health Policy & Management

A HEALTH TECHNOLOGY ASSESSMENT OF THREE PERSONALIZED NUTRITION INTERVENTIONS USING THE EUNETHTA CORE MODEL

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Background

Many believe that personalized nutrition (PN) can achieve both health gain and cost-savings.

preventomics (an EU-funded project) addresses the issue of PN by empowering consumers to PREVENT diet-related diseases through OMIC sciences (developed interventions based on individual phenotypic characteristics at the metabolome level, genotype, lifestyle habits and preferences).

Aim

Implementations should be supported by more than health outcomes and costs. Therefore, a health technology assessment (HTA) was conducted of PN interventions *(in Denmark, Spain, Poland and the United Kingdom (UK))* developed through preventomics

Results

TEC CUR

SAF

ETH ORG LEG

EFF

ECO

SOC

PN can help to reduce the global burden of obesity and prevent diet-related diseases.

Only minor safety concerns (e.g., puncture wounds due to blood samples).

No major (insurmountable) issues.

Promising results, but uncertainty due to sample sizes (n=60-264) and follow-up duration (10-16 weeks) (Table 1).

Most significant cost component: intervention costs.

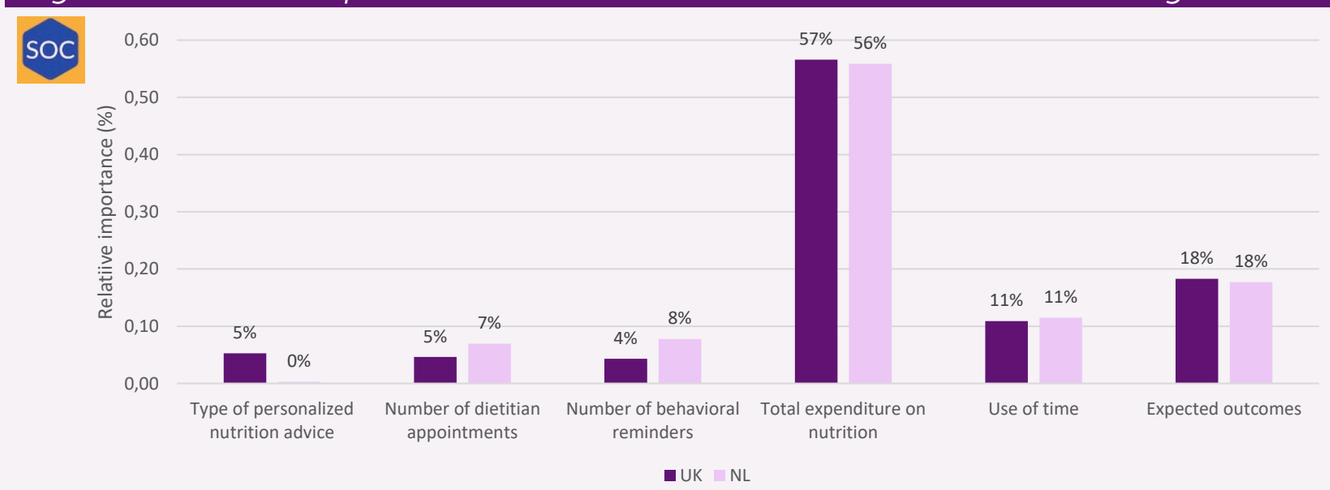
People seem open to use PN, but total costs appear to be a dominant decision-making criterion (Figure 2).

*Table 1: Total discounted costs and effects (in QALYs) base-case analysis**

EFF ECO	PP+B	PP	Control	Difference PP+B-Control	Difference PP-Control
Denmark					
QALYs	15.117	n/a	15.106	0.011	n/a
Total costs in 2020 euros	520,773	n/a	519,042	1,731	n/a
ICER				162,982 per QALY	n/a
Spain					
QALYs	20.148	20.152	20.146	0.002	0.006
Total costs in 2020 euros	349,569	349,533	348,959	610	574
ICER				305,000 per QALY	95,667 per QALY
Poland					
QALYs	16.454	16.431	16.444	0.010	-0.013
Total costs in 2020 euros	89,973	90,064	89,420	552	644
ICER				54,488 per QALY	Control dominates
UK					
QALYs	16.022	16.018	15.979	0.044	0.039
Total costs in 2020 euros	375,605	375,501	374,849	756	651
ICER				17,178 per QALY	16,702 per QALY

**A Markov model for obesity with a lifetime horizon was used to model costs and effects from the trial; ICER incremental cost-effectiveness ratio, PP personalized plan group, PP+B personalized plan (PP) + behavioral change program group, QALY quality-adjusted life years, UK United Kingdom*

Figure 2: Relative importance of PN attributes based on a multinomial logit model



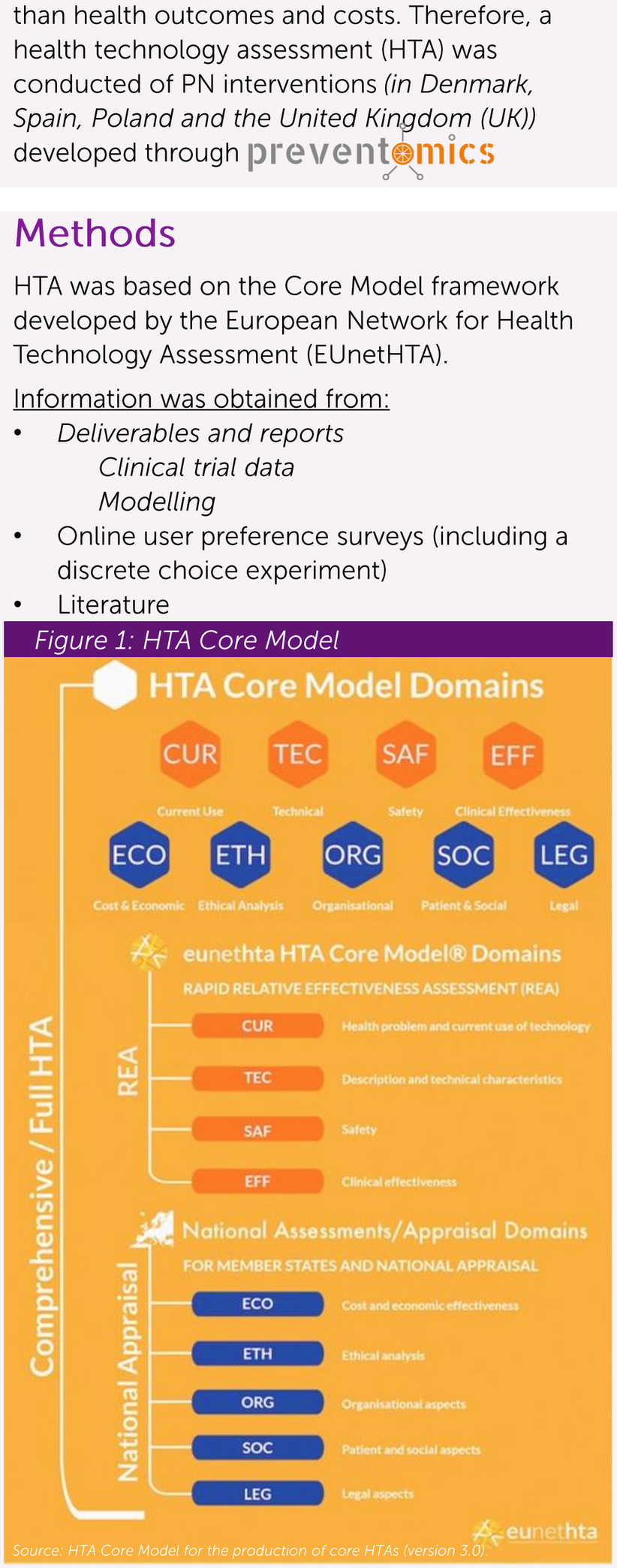
Methods

HTA was based on the Core Model framework developed by the European Network for Health Technology Assessment (EUnetHTA).

Information was obtained from:

- *Deliverables and reports*
  - *Clinical trial data*
  - *Modelling*
- Online user preference surveys (including a discrete choice experiment)
- Literature

Figure 1: HTA Core Model



Source: HTA Core Model for the production of core HTAs (version 3.0).

Conclusion

Trials of the PN interventions developed during PREVENTOMICS are promising for different populations.

The EUnetHTA Core Model helped to identify where more attention is needed before implementation of PN;
One area is improving evidence of effectiveness, e.g., through trials with longer follow-ups or specific patient subgroups.

Financing of PN is also a vital issue to consider; shared financing, but not going Dutch, is one viable solution.

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