EE660

Erasmus School of Health Policy & Management

COST-EFFECTIVENESS OF PERSONALIZED NUTRITION BASED ON OMIC SCIENCES IN ADULTS WITH ABDOMINAL OVERWEIGHT OR OBESITY: A WITHIN-TRIAL ANALYSIS AND BEYOND-TRIAL MODELLING IN THE UNITED KINGDOM AND POLAND

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Background

preventomics (empowering consumers to PREVENT diet-related diseases through OMIC sciences) provides personalized nutrition interventions to lower the risk of diet related diseases and increase life expectancy.

The project examined two types of personalized nutrition (see Figure 5) with a randomized controlled trial.

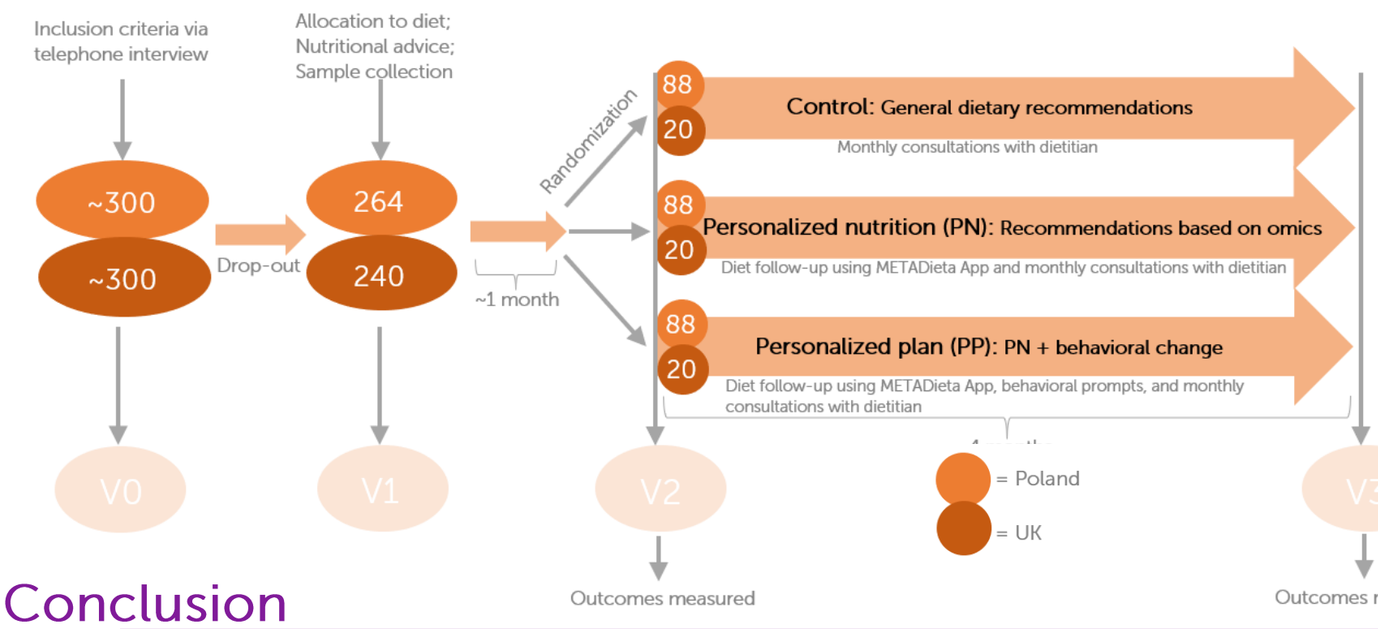
While studies have examined the effectiveness of personalized nutrition, economic evaluations are scarce.

Aim

To assess whether personalized nutrition is cost-effective relative to 'non-personalized nutrition' (control group) in the United Kingdom (UK) and Poland.

Methods

Figure 5: Design of the trial



Results

Table 1: Trial results of PP/PN vs control

	UK		Poland	
	PP-Control	PN-Control	PP-Control	PN-Control
BMI kg/m2	-0.80, 95%CI:-1.60,0.00	-0.33, 95%CI:-1.14,0.48	-0.20, 95%CI:-0.86,0.46	0.20, 95%CI:-0.45,0.85
EQ-5D-5L	0.03, 95%CI:-0.01,0.16	0.08, 95%CI:-0.01,0.16	-0.01, 95%CI:-0.04,0.01	0.01, 95%CI:-0.02,0.03
Costs	542 pounds	525 pounds	2,708 Zloty	2,618 Zloty

BMI body mass index, EQ-5D-5L (utility measurement)

Table 2: Discounted lifetime results base-case analysis of PP/PN vs control

	UK		Poland	
	PP-Control	PN-Control	PP-Control	PN-Control
QALYs	0.044	0.039	0.010	-0.013
Costs	673 pounds	580 pounds	2,458 Zloty	2,867 Zloty
ICER	15,295 pounds per QALY	14,872 pounds per QALY	242,584 Zloty per QALY	Control dominates

QALY quality-adjusted life years, ICER incremental cost-effectiveness ratio

Figure 1 &2: Cost-effectiveness planes base-case scenario UK

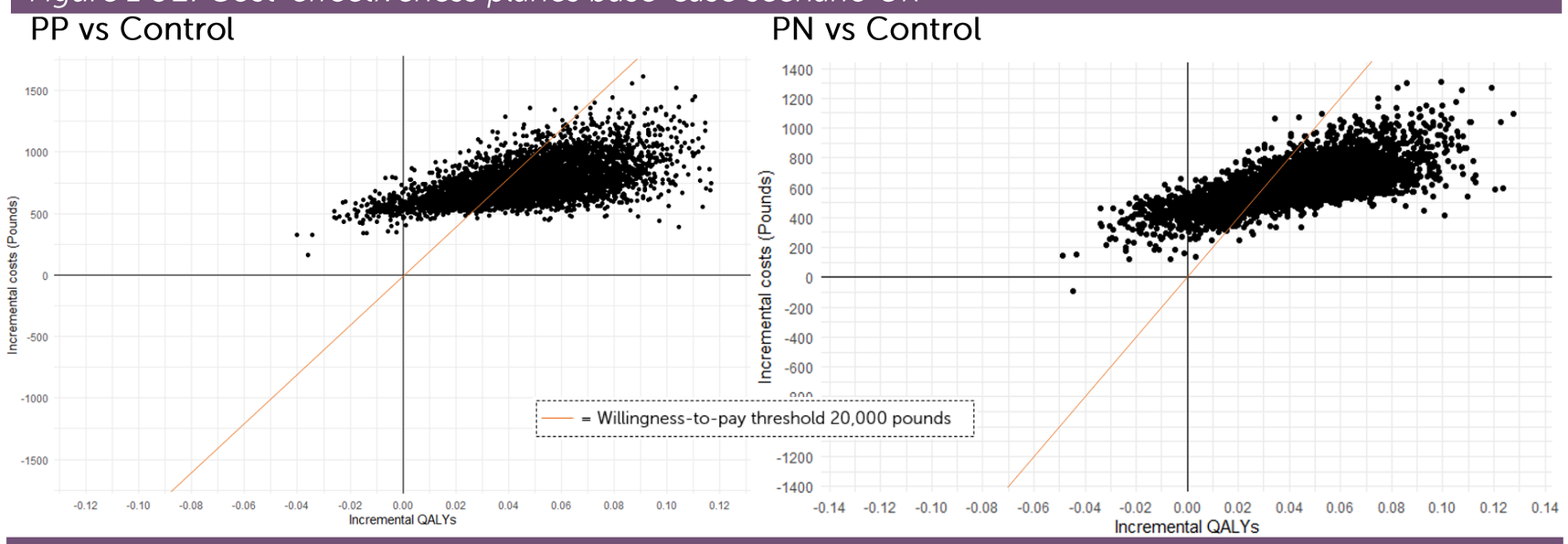


Figure 3 &4: Cost-effectiveness planes base-case scenario Poland

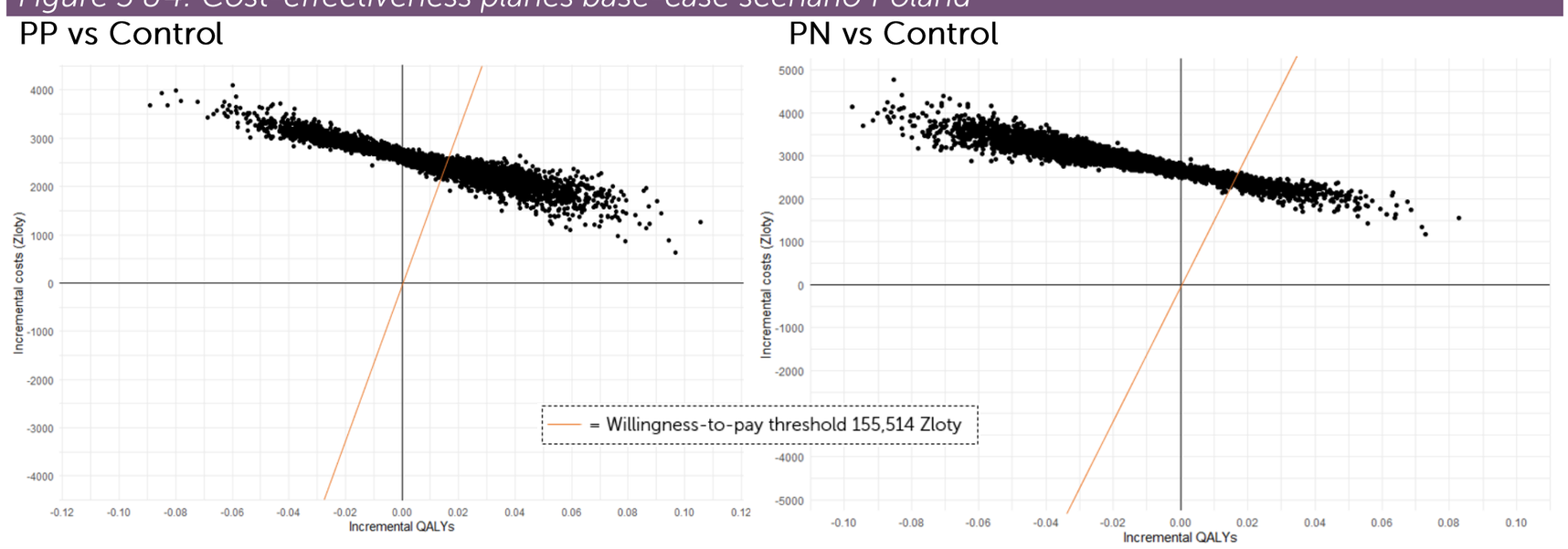


*Figure 6: Markov model**

**used for lifetime cost-effectiveness*

Conclusion

Based on the willingness-to-pay thresholds we used, PP and PN would not be cost-effective in Poland; however, they are if the upper confidence limit of the observed decrease in BMI is used. In the UK, both personalized interventions may be considered cost-effective. There is still many uncertainty around these results.

Future studies should be larger and/or longer to reduce uncertainty about effectiveness.

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