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THE EARLY NUTRITION PROGRAMMING PROJECT

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Developmental origins of health and disease: the views of first time mothers in five European countries

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on behalf of EARNEST Theme 4



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Aim and Scope

- Aim: to explore the views of first time mothers about the importance of the early nutritional environment for future health (vs alternative theories that predict lifelong health is determined by a predisposition to certain inherited conditions, or by lifestyle choices and behaviours)
- Scope: feeding of infant in the first year after birth.
- First time mothers because of recent information seeking
- 5 geographically dispersed countries in Europe (England, Finland, Germany, Hungary, Spain)



Methods

- Local ethical and research governance approvals
- Ward staff identified mothers in hospital after delivery
- Included: primiparvus with healthy newborns
- Excluded:
 - Multiple births
 - Baby needing special care
 - Mother unable to read the information leaflet (in the local language)



Methods continued

- Convenience sample of mothers asked to complete a brief questionnaire prior to discharge from hospital (except England, mailed returns)
- Questionnaire agreed by team in English, translated to local languages and piloted
- Sample size: n=400 (to try and ensure 300 responses to a follow up mailed questionnaire when baby was 8 months)
- Data entered into SPSS. Analysis by Peter Williams








Questionnaire

- About baby: gender, gestation, weight
- About feeding baby:
 - milk feeding intentions (breast, formula, both) and why
 - weaning intentions (< 4, 4-5.9, >=6 months) and why
 - sources of information (17 categories- family / friends, health professionals, media)
 - views about effect of baby's diet on future health
- Background information about mother: socio demographic, health and health behaviour








Recruitment

	 England	 Finland	 Germany	 Hungary	 Spain	ALL
Number recruited	438	426	414	389	404	2071
Eligible	4680	606	730	389	477	6882
Months of recruitment	12	5	6	20	20	
Response Rate %	9.4	70.3	56.7	100	84.5	30.1
Number and types of hospital	3 District general	1 Tertiary	2 Teaching 1 private 1 Red Cross Clinic	1 Tertiary	1 Maternity 1 Tertiary	



Characteristics of sample of mothers

	 England	 Finland	 Germany	 Hungary	 Spain	ALL
Number of mothers	438	426	414	389	404	2071
% MALE babies*	51.4	49.1	48.9	50.1	56.2	51.3
Mean baby Weight (gms)	3372	3468	3281	3404	3187	3343
Mean age of mother	31.7	28.3	32.1	28.1	29.6	30.0
% left education at <=16 years	6.0	5.6	5.3	11.8	40.8	13.7
% Mothers born home country	80.4	95.3	81.5	98.7	92.3	90.2

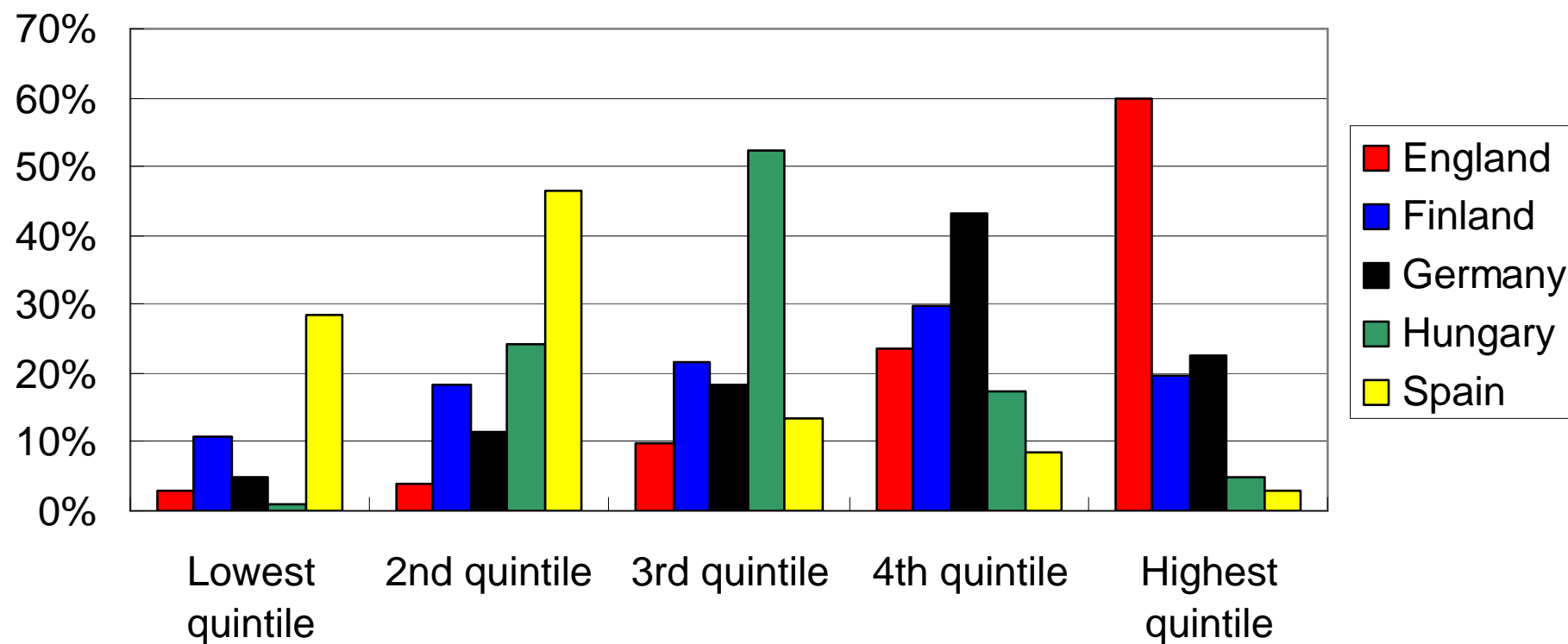
* differences not significant







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Annual household income before tax






Health related behaviours of mothers

% of mothers	 England	 Finland	 Germany	 Hungary	 Spain	All
Smoke pre pregnancy	18.6	33.1	20.4	9.7	37.3	26.2
Smoke in pregnancy	4.4	9.4	5.5	1.8	13.9	7.1
Moderate / very / extremely healthy eating	93.7	97.0	96.6	97.2	87.2	94.4
Moderate / very / extremely physically active	81.8	87.1	87.9	94.1	36.6	77.2






Infant feeding intentions

% of mothers intending to	 England	 Finland	 Germany	 Hungary	 Spain	All
Exclusive breastfeed	68.0	69.7	89.1	97.2	87.6	82.1
Exclusive bottle feed	6.9	0	4.3	0	3.7	3.0
Wean at 6 months, or later	70.9	51.4	84.2	84.9	54.3	70.2
Wean before 4 months	3.5	3.2	2.6	2.6	8.1	3.6



Reasons for intending to exclusively breast feed

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Recommended	8	5	3	0	3	4
'Breast is Best'	50	27	23	42	67	42
Cheap, Free	21	16	13	13	7	11
Convenient	31	31	33	5	2	20
Natural	18	29	23	15	8	18
Nutrients	18	28	22	7	11	17
Bonding	22	14	25	6	2	13
Mother's Health	29	1	7	0	6	8
Baby's Health	62	42	79	27	29	48
Reasons/mother	2.6	2.0	2.3	1.0	1.4	1.8








Baby health reasons for intending to breast feed

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Health in general	28	19	29	21	17	23
Growth and development	3	2	2	1	0	1
Allergy	6	5	24	0	0	7
Immune Function	22	13	22	3	8	13
Other*	4	3	2	2	3	3

* Includes risk of disease, infection (GI, respiratory, urinary), obesity, diabetes, cancer.



Reasons for intending to formula feed

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Return to work	12	2	32	44	19	12
Convenient	10	12	12	0	4	9
Share responsibility	22	8	14	0	0	13
Insufficient milk	12	46	14	22	10	23
Mother/baby problem	43	12	38	11	27	29
Reasons/mother	1.4	1.4	1.4	1.3	1.2	1.4








Reasons for intending to wean \leq 4 months

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Recommended	28	15	10	10	39	23
Insufficient milk/ baby hungry/ variety	25	86	10	60	11	38
Return to Work/ Involve Others	14	8	70	50	6	29
Total Reasons	12	14	9	9	16	60








Reasons for intending to wean ≥ 6 months

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Recommended	98	44	45	89	70	70
Insufficient milk/ baby hungry/ variety	24	56	29	10	34	28
Return to Work/ Involve Others	14	5	25	1	10	14
Health benefit for baby	6	6	11	0	0	5
Reasons/mother	1.5	1.2	1.2	1.0	1.1	1.2



Most important influences on feeding intentions (very much and extremely)

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Partner	37	26	38	12	39	31
Antenatal midwife	27	37	43	26	50	37
Staff in hospital	30	35	28	20	36	30
Books	34	27	50	28	17	31
Leaflets	23	30	39	12	17	25








Influences on adult health (very much and extremely)

% Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Physical activity as child and adult	88	85	88	77	77	84
Diet as child and adult	87	81	82	73	76	80
Exposure to cigarette smoke	83	63	90	81	87	80
Genetics/Inheritance	75	65	81	71	58	70
Diet as baby	65	44	64	71	76	64
Environmental pollution	62	36	61	79	78	63
Family Income	20	8	30	29	36	24



Effect of baby diet on lifelong risk of disease (very much and extremely)

% of Mothers stating	 England	 Finland	 Germany	 Hungary	 Spain	All
Food allergy	49	46	73	40	43	50
Overweight	52	35	54	19	58	44
Excema, asthma	47	34	69	32	35	44
Diabetes	43	34	43	14	50	37
Bones/ Osteoporosis	47	43	29	23	42	37
Unhealthy food preferences	45	27	31	15	46	33
High BP	38	26	31	11	50	31
Heart disease	43	20	29	12	45	30
Cancer	22	9	18	1	29	18



Conclusions

- High proportion of first time mothers state intention (shortly after birth) to exclusively breast feed
 - A range of general reasons offered; ~ 25% state a specific reason related to lifelong health of infant
- About 70% of mothers state intention to wean when baby is ≥ 6 months (in line with WHO)
 - The reason given by most is that this is recommended to them; ~ 5% state a health benefit for infant



Conclusions continued

- Mothers consider diet as a baby is a less important influence on lifelong health than many lifestyle and behavioural factors
- Less than one half of mothers consider diet as a baby to have a very / extremely important impact on life long risk of a variety of chronic conditions
- Mothers access varied and multiple sources of information about feeding their infant: health professionals are amongst the most influential



Limitations

- Samples may not be representative (relatively highly educated, except Spain)
- Recruitment problems in England may have affected sample in that country
- High proportions stating intention to exclusively breastfeed may be bias due to socially acceptable responding
- Does not cover *in utero* period



Policy relevance

- Scope to increase education of mothers about lifelong health implications for infant of early nutrition experiences, using the multiple sources of information that they access
- Policy documents need to provide clear and consistent information for health professionals so they can give good advice to mothers
- Consumer information should emphasise the potential health impacts of early nutrition

Other work in Earnest Theme 4 found policy documents and consumer information contained limited and inconsistent guidance



Future work

- Analysis of 8 month follow up questionnaire – compares behaviours with stated intentions
- Examine socio demographic and information related predictors of breastfeeding
- Explore further the links between attitudes to breast feeding and the presentation of the health benefits in policy documents and consumer information



Further information and acknowledgement

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