Maternal and Child Psychosocial Factors associated with Dental Problems During Early Childhood

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ESRI

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TRINITY COLLEGE DUBLIN

Introduction

"Oral Health is Integral to General Health"

- US Surgeon General's Report

The Systemic Connection

It's not just about the oral infection, it's how your body responds to it.

Unhealthy Levels of Oral Bacteria	Tenderness, swelling, bleeding gums, pockets between teeth and gums
Inflammatory Response	Immune system fights the bacteria
Oral Infection	Mechanical scaling, lasers, antibiotics, surgery - possible tooth and bone loss
Systemic Response	Compromised immune system, elevated levels of blood toxins, increased risk of heart attack, stroke and a host of other serious health conditions

Child Dental Problems

- Dental caries (decay)
- Dental pain/abscess(infection)
- Dental erosion (acid damage)
- Common risks

Background

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Why the concern? They're just baby teeth

By EchoPress News on Jun 8, 2007 at 12:00 a.m.

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Editor's note: The following story was provided through the Douglas County Early Childhood Initiative. For more information, visit the Web site www.buildingconnectionseci.org.

Have you ever had a toothache, sat at your desk for hours, trying to concentrate, completing work accurately, and all with a happy disposition? It's difficult! For

Background

News › Society › Children

Teeth problems are top reason for young children's hospital admissions

Figures show 25,812 children aged five to nine with tooth decay have been admitted for multiple extractions in a year

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Press Association
theguardian.com, Sunday 13 July 2014 11.57 BST

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Article history

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UK news

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More on hospitals

London to host world's biggest centre of excellence for

General Anaesthesia

- Primary Dental Care - St James Hospital HSE
- Not HIPE - coded so difficult to obtain data
- Only simple dental extractions
- 1,300 children age 2-5 years per year
- 10,000 teeth per year extracted
- Only includes former Eastern Health Board/ Meath areas
- Rest of Ireland?

Dental Caries

- Increased Prevalence since 1990's
- 30-40%: 2-5 year olds IRL/UK/EU/US
- Largely untreated
- Low level of dental visits
- Socio-economic gradient
- Current prevalence IRL??

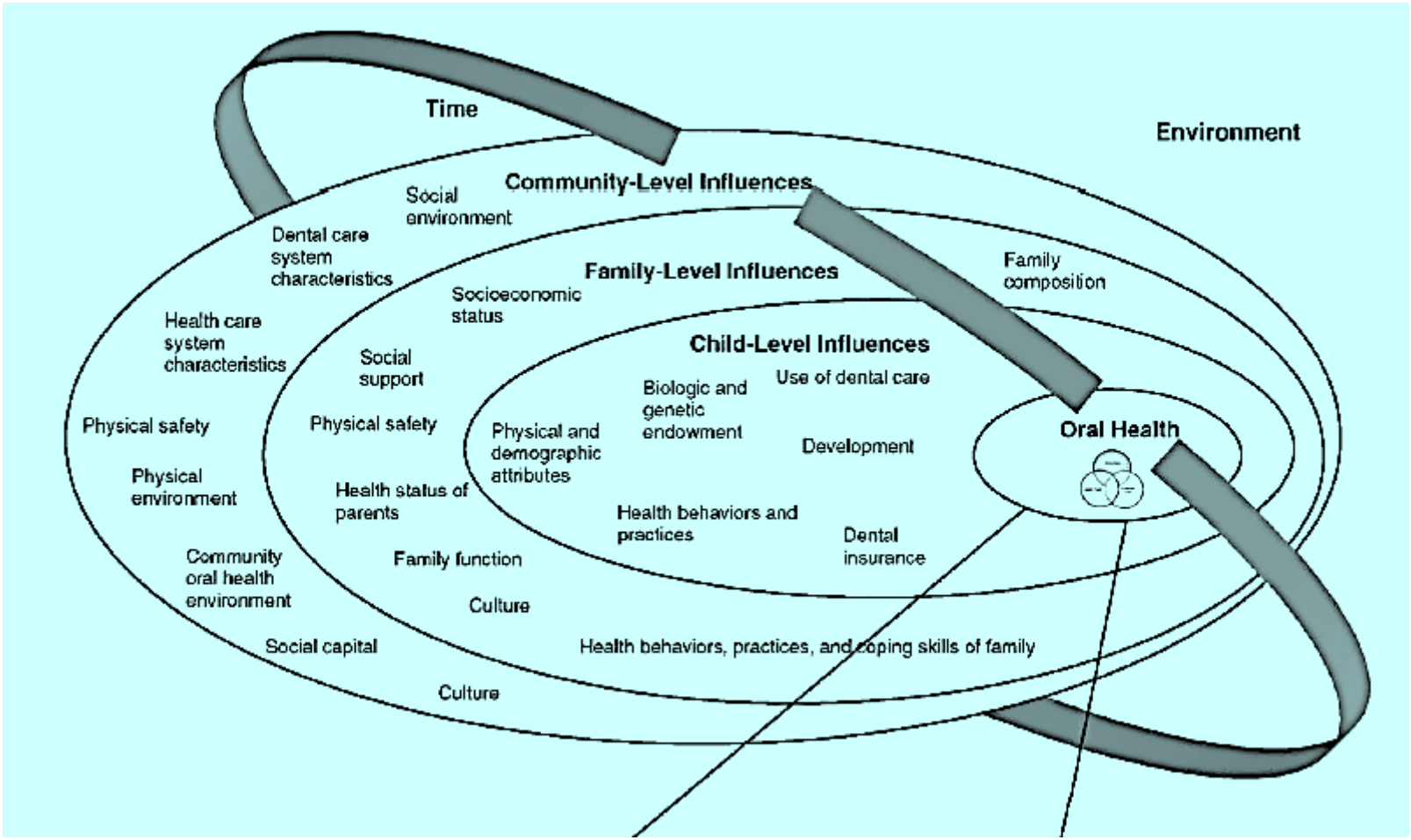
Problems (9 months)

Image courtesy Dr Anne O'Connell

Problems (3 years)

Images courtesy Dr Anne O'Connell

Oral Health Model



Fischer-Owens, '07

Non-Biomedical Factors

Parental Anxiety and stress

Difficult Temperament

Behavioural Problems

Parental Depression

General Health Rating

Objectives

To investigate the relationship between reported dental problems and:

- Infant (9 months),
- Child (3 years) and
- Primary caregivers' (PCG) health and psychological characteristics.

Methods: Sample

- Data derived from the infant cohort of the *Growing Up in Ireland* (GUI) study
- Random sample of 9-month olds in 2007/2008 followed-up at age 3 years in 2010/2011
- Weighted data used - nationally representative

Data Analysis

	9 months	3 years
Child	Infant characteristics Questionnaire (ICQ)	Strengths and Difficulties Questionnaire (SDQ)
	Global Rating of Health	Global Rating of Health
Primary Caregiver (PCG)	Parental Stress Scale	Parental Stress Scale
	Parental Depression Scale	
	Global Rating of Health	Global Rating of Health
Demographics	Gender, receipt of social benefits	Receipt of social benefits

Sample Description

Characteristic		Total at 9 months N (%)	Total at 3 years N (%)
Sample size		11,134	9,793
Gender child	Boy	5,715 (51.3)	5,024 (51.3)
	Girl	5,419 (48.7)	4,769 (48.7)
Gender PCG:	Male	41 (0.4)	161 (1.6)
	Female	11,093 (99.6)	9,632 (98.4)
Social Welfare Benefits		2,322 (20.9)	3,763 (38.4)
'Dental-Problem'		302 (2.7)	493 (5.0)

Health Global Rating 9 Months

Variable	Dental Problem 9 months old	No Dental Problem 9 months old
Infant: Very good	80.9% (241)	83.0% (10,793)
Infant: Not very good	19.1% (57)	17.0% (1838)
PCG: Excellent	30.8% (93)	30.6% (3317)
PCG: Not Excellent	69.2% (209)	69.4% (7515)

Infant Temperament 9 Months

Variable: ICQ	Dental Problem Mean (S.D.)	No Dental Problem Mean (S.D.)
*Fussy-difficult***	15.79 (4.76)	14.8 (5.0)
*Unpredictable***	6.56 (2.87)	6.14 (2.66)
Unadaptable	9.27 (3.47)	9.01 (3.84)
*Dull***	5.39 (2.28)	5.85 (2.46)

*P<0.05; **P<0.01; ***P<0.001

Mother – 9 Months

Variable	Dental Problem Mean (S.D.)	No Dental Problem Mean (S.D.)
Parental Stress - total score	**32.70 (7.01)**	**32.08 (6.81)**
Rewards	**5.69 (1.40)**	**5.65 (1.26)**
Satisfaction	**3.81 (1.15)**	**3.86 (1.13)**
Parental Stressors *	**15.13 (4.31)**	**14.63 (4.19)**
Lack of control**	**5.83 (2.29)**	**5.49 (2.10)**
PCG Depression - total score **	**3.18 (3.96)**	**2.46 (3.65)**

*P<0.05; **P<0.01; ***P<0.001

Regression - 9 Months

Dependent Variable: **PCG Reported Dental-Problem at 9 months**

	B	S.E.	OR (95% CI)	P-Value
Infant Global Health				0.43
Infant Temperament *Fussy*	.03	.01	**1.03** (1.01,1.05)	0.005
Infant Temperament *Dull*	-.09	.03	**.92** (.87, .96)	0.001
PCG Global Health				0.48
PCG Depression	.03	.01	**1.03** (1.01,1.06)	0.03
PCG Stress				0.96
Child-Gender				0.39
PCG-Gender				0.62
Social Welfare Recipient Family				0.56

Health Global Rating 3 Years

Variable	Dental Problem 3 years old	No Dental Problem 3 years old
Child: Very healthy	64.2% (315)	75.3% (6,993)
Child: Not very healthy***	35.8% (176)	24.7% (2,300)
PCG: Excellent	27.6% (136)	30.0% (2970)
PCG: Not Excellent	72.4% (357)	70.0% (6506)

*P<0.05; **P<0.01; ***P<0.001

Child and Parent - 3 Years

Variable	Dental Problem Mean (S.D.)	No Dental Problem Mean (S.D.)
SDQ- Total Difficulties score**	8.49 (4.96)	7.95 (4.6)
Hyperactivity**	3.49 (2.25)	3.21 (2.18)
Emotional	1.49 (1.52)	1.36 (1.39)
Conduct	2.28 (2.01)	2.18 (1.87)
Peer problems	1.24 (1.47)	1.21 (1.40)
Prosocial	7.81 (1.89)	7.94 (1.76)
Parental Stress score PCG**	12.86 (4.03)	12.32 (4.15)

*P<0.05; **P<0.01; ***P<0.001

“Pester Power”

Regression- 3 years

Dependent Variable: **PCG Reported Dental Problem at 3 years**

	B	S.E.	OR (95% CI)	P-Value
Child Global Health	.53	.1	1.69 (1.39, 2.05)	P<0.001
Child Behaviour				0.09
PCG Global Health				0.52
PCG Depression				N/A
PCG Stress				0.07
Child-Gender				0.15
PCG-Gender				0.32
Social Welfare Recipient Family				0.66

Conclusions 1

- Dental problems were reported among **more than 1 in 50 infants** at 9-months, and among **1 in 20 children** at age 3.

- Reported dental problems were associated with :

	9 months	3 years
Child	Infant temperament	Child behaviour
Primary Caregiver (PCG)	Parental stress Parental depression	Parental stress

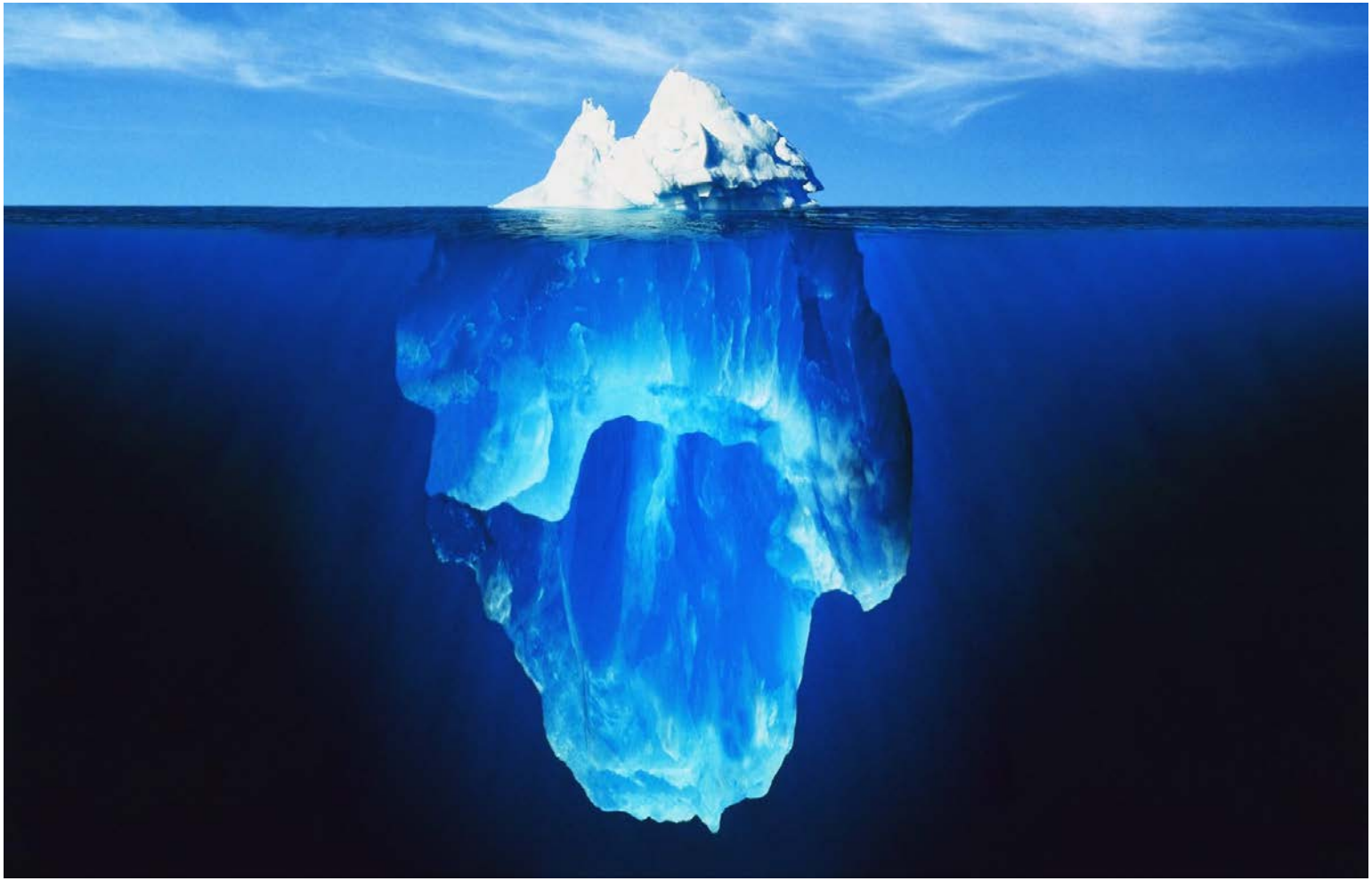
Conclusions 2

Regression analyses identified significant associations between experience of dental problems and

- Infant temperament
- Parental depression in infancy

- Child global health

Growing Up in Ireland
National Longitudinal Study of Children



National Forum

'Securing and maintaining oral health early in life is an urgent concern (0-5 age group)'

Future Research GUI

- 5 year olds - Infant Cohort/ Child Cohort
- Behaviours/Habits - Diet/snacking and Tooth-brushing
- Parent/child factors influencing oral health related decisions
- Inform future Dental Surveys
- Add Clinical information

Long Term

- Long term association between child oral health and general health - Longitudinal
- “Dental health indices may provide a more reliable indicator of future health outcomes than BMI”. (Hooley, 2012)

Policy Implications

- Identify parent/child factors that lead to poor Oral Health
- Intervene at earliest stage possible emphasising Primary Prevention
- Minimise risk of requiring GA
- Improve Oral Health outcomes long term

"We need a health care plan with some teeth in it."

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