Population-based system of parenting support to reduce the prevalence of child social, emotional, and behavioural problems

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Background

▸ High prevalence rates of child social, emotional & behavioural difficulties
  ▸ Growing up in Ireland 9 year olds: 15%

▸ Parenting practices characterised by positive displays of affection, positive reinforcement, and consistent disciplinary strategies are related to a child's psychosocial development **(Ermisch, 2008; Marmot et al., 2010; Forehand & Kotchick, 2002)**

▸ Parenting interventions typically target high-risk families

▸ **Alternative strategy:** adopt a population approach based on principle of proportional universalism

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Triple P

▸ Triple P is an evidence-based universal parenting programme with multiple methods of delivery **(Sanders, 2003)**

▸ **5 Levels:**
  ▸ 1) Media campaign
  ▸ 2) Seminars
  ▸ 3) Discussion Groups
  ▸ 4) Group Triple P
  ▸ 5) Targeted individual family support

Intensity of Intervention

5

4

3

2

Level 1

Breadth of reach
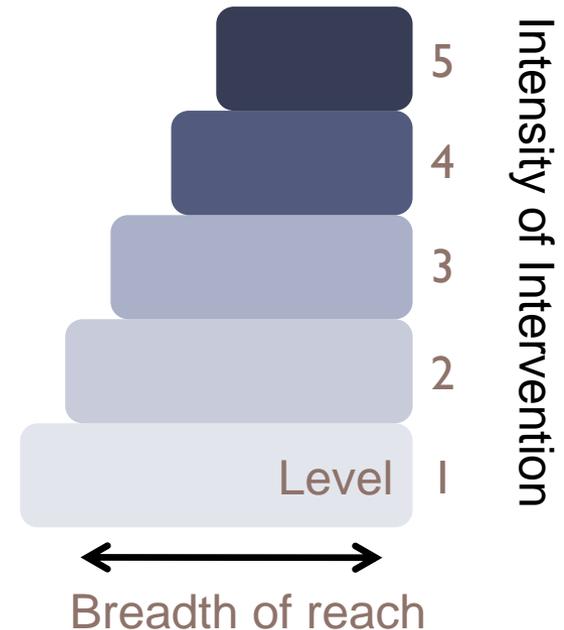
▸ The aim of the programme is to promote positive parenting strategies by focusing on developing positive relationships and attitudes

▸ Meta-analysis demonstrated positive effects for improved parenting practices
▸ and child social, emotional, and behavioral outcomes **(Sanders et al., 2014)**

Literature on Universal Triple P

▸ Three studies of universal Triple P to date:

  ▸ Australian Every Family quasi-experimental study demonstrated positive effects for the no. of children with clinically elevated and borderline total difficulties & emotional problems **(Sanders et al., 2008)**

  ▸ US South Carolina population-level randomised trial demonstrated decreased rates of child maltreatment, out of home placements & non-accidental injuries **(Prinz et al., 2009)**

  ▸ One other study of population-level Triple P, conducted in Scotland using a pre-post design, did not identify any significant impacts for preschool children (**Marryat, Thompson & Wilson, 2017)**

Population-level Triple P in Ireland

- Universal Triple P delivered by the Midlands Area Parenting Partnership (MAPP) since 2010

- Triple P (levels 1 - 4) offered to every family with children under age 8

- **Original evaluation:**
  - Conducted by NUI Galway found evidence of a reduction in children's socio-emotional and behavioural problems **(Fives, Pursell, Heary, Nic Gabhainn, & Canavan, 2014)**

- **Aim of CRN PEI project:**
  - To investigate the impact of universal Triple P on children's socio-emotional and behavioural problems utilising alternative statistical methods & explore heterogeneity in the programme's impact

- **Study design:**
  - Quasi-experimental design with intervention and comparison counties

Data

▸ Representative population survey conducted at 2 time points (pre and post intervention)

  ▸ **Sampling frame:** Representative sample of parents (children aged 4-8) in Longford & Westmeath counties (the intervention group) and a matched control group from comparison counties (Tipperary North and South)

  ▸ **Intervention:** 1,501 parents pre-intervention; 1,459 parents post-intervention
  ▸ **Comparison:** 1,521 parents pre-intervention; 1,544 parents post-intervention
    ▸ ~20% of population at each time point

  ▸ **Procedure:** Face-to-face interviews in spring 2010 (pre-intervention) and spring 2013 (post-intervention) - parents sampled independently at both time points, yet potential for overlap

▸ **Primary outcome measure**: Parental reports on the Strengths and Difficulties Questionnaire **(Goodman, 1997)**

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Methodology

▸ Propensity score matching (PSM) differences-in-differences (DID) method **(Heckman, Ichimura & Todd, 1997)** used to compare intervention and comparison counties over time

  ▸ **DID** compares the relative change in outcomes between the intervention and comparison samples over time

  ▸ **PSM** reduces selection bias by balancing the intervention and comparison samples based on their observable socio-demographic characteristics

▸ By combining DID with PSM, utilise advantages of both techniques

  ▸ DID helps to difference out permanent (time invariant) confounders and

  ▸ PSM helps to capture transitory shocks (and thus balance the covariates)

Methodology

▸ Propensity score estimated using probit to calculate the probability of being in intervention/comparison sample based on observable covariates

  ▸ **Matching variables:** child age, child gender, relationship of the respondent to the child, marital status, education, employment status, social class, country of birth, rurality, tenure, and the sampling weight

▸ DID models estimated using:

  ▸ OLS regressions for the continuous SDQ scores

  ▸ Linear Probability Models for the SDQ cutoff scores

with average weights obtained from the propensity score applied

Descriptive Statistics

	Pre-intervention Differences			Post-intervention Differences		
	Intervention (n=1,501) %	Comparison (n=1,495) %	p value	Intervention (n=1,521) %	Comparison (n=1,544) %	p value
Gender of child			0.693			0.907
Male	51.3	50.7		52.5	52.6	
Female	48.7	49.3		47.5	47.4	
Marital status			0.263			0.009
Single	8.8	17.2		11.3	18.4	
Married/cohabitating	76.4	77.0		83.6	72.8	
Divorced	7.0	4.6		4.5	8.2	
Widowed	0.8	1.2		0.6	0.6	
Education			0.856			0.413
Primary school or less	2.2	1.4		1.6	1.8	
Some secondary school	14.2	14.5		11.7	14.9	
Completed secondary school	38.6	39.5		32.3	29.8	
Post-secondary/technical training	24.6	22.9		33.7	28.7	
University degree	16.1	16.7		16.8	19.6	
Post-graduate degree	4.3	5.0		3.8	5.1	
Country of birth			0.681			0.566
Ireland	84.3	85.3		82.8	84.6	
Other	15.7	14.7		17.2	15.4	
Employment status			0.061			0.155
Full-time employment	26.9	32.7		27.9	27.4	
Part-time employment	19.2	19.9		18.7	20.5	
Unemployed	13.3	13.5		20.9	14.3	
Home duties	5.0	5.6		12.5	12.4	
Other	35.7	31.5		19.9	25.5	
Housing tenure			0.724			0.412
Renting/living with parents	40.4	42.5		40.9	46.4	
Owned	59.6	57.5		59.0	53.6	

Results (1) from Kernel Propensity Score Differences-in-Differences Models

SDQ Continuous Scores	Pre-intervention Raw means		Post-intervention Raw means		Coef. (st. dev.)	p value
	Intervention	Comparison	Intervention	Comparison		
Total difficulties	8.32	7.52	7.18	7.76	-0.788 (0.289)	**0.007**
Emotional symptoms	1.77	1.76	1.43	1.81	-0.266 (0.101)	**0.008**
Conduct problems	1.74	1.54	1.43	1.51	-0.183 (0.086)	**0.033**
Hyperactivity	3.34	2.96	3.12	3.15	-0.177 (0.116)	0.128
Peer problems	1.47	1.25	1.19	1.29	-0.152 (0.081)	**0.060**
Prosocial scale	7.79	8.29	8.29	8.69	-0.039 (0.098)	0.691

Each kernel PSM DID estimate represents a separate model which includes a treatment status indicator (intervention or comparison), a time indicator (pre- or post-intervention), an interaction between time and treatment status, a set of controls (child age, child gender, respondent's relationship to the child, Irish born or not, employment status, educational attainment, social class, rurality, housing tenure, and aggregate ED), and matching weights applied.

Results (2) from Kernel Propensity Score Differences-in-Differences Models

SDQ Proportion in borderline/abnormal range %	Pre-intervention Raw %		Post-intervention Raw %		Coef. (st. dev.)	p value
	Intervention	Comparison	Intervention	Comparison		
Total difficulties	16.0	13.4	10.0	14.5	-0.047 (0.018)	**0.009**
Emotional symptoms	17.1	15.9	12.0	16.7	-0.033 (0.019)	**0.058**
Conduct problems	27.3	21.3	18.7	19.9	-0.044 (0.022)	**0.042**
Hyperactivity	15.6	12.3	13.0	17.9	-0.045 (0.019)	**0.015**
Peer problems	21.2	18.6	15.3	17.5	-0.027 (0.020)	0.173
Prosocial scale	16.5	10.2	10.4	7.3	-0.022 (0.016)	0.179

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Size of the effects

▸ Triple P reduced total difficulties score by 0.79 points

  ▸ GUI total difficulties score: 7.96 points for 3yr olds and 7.98 points for 9yr olds

  ▸ Suggests Triple P reduces total difficulties by almost 10%

▸ Triple P reduced the proportion of children scoring in the clinical/borderline range by 4.7% for total difficulties, 4.4% for conduct problems, and 4.5% for hyperactivity

  ▸ GUI total problems cutoff: 12.5% for 3yr olds and 15% for 9yr olds

  ▸ Suggests Triple P reduced the population incidence of behavioural problems by between 31% and 38%

▸ Australian Every Family study: reduced incidence of conduct problems by 4% and total problems by 3.07%

Where did change come from?

- Within the post-intervention sample
  - Only 34% had participated in some form of Triple P
    - 23% had read a Tippaper
    - 9.5% attended Level 2 seminar
    - 4.5% attended Level 3 discussion group
    - 7.5% attended Level 4 group sessions

- Yet among those who did not participate, 16% stated that they knew somebody who had taken part in Triple P, and of these, 56% had received parenting tips or information from that person

- May be indicative of a contagion effect whereby the benefits were extended to those who did not actively participate in the programme

Conclusions

▸ Science of the population-based approach to parenting is relatively new

▸ A universal parenting programme implemented at multiple levels can be an effective way to improve children's socio-emotional health

▸ Universal approaches to parenting support can normalise and destigmatise parenting and help-seeking behaviour

▸ Paper published:

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Getting started – Getting better
Triple P for every parent
A guide to implementation in Ireland

Midlands Area
Parenting Partnership
Triple P Parenting

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