



Child Behavior Problems and asthma morbidity: preliminary results

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Social changes, asthma and allergy in Latin America.

Review

Asthma:

- Chronic disease
- Reversibility of obstruction of airflow
- Wheezing
- Children living in inner cities
- 3rd highest expenditure - SUS

(Fritscher; C. C. e cols, 2002; RIO, 2002; AMORIN, 2001)

Prevalence

- **Brasil:**
- 24,3% : students 6 - 7 years old

- **Salvador:**
- 25,6% : children 6 - 7 years old
- 17,3% : children 13 - 14 years old

Increase in prevalence & associated Factors

Theories

- **Environmental influence**

housing, antibiotal therapy, diet, vaccination, infections,
pollutants, physical activity

- Lifestyle
- Urbanization

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(WRIGHT, 2008; WEIL et al, 1999)

Proposed model

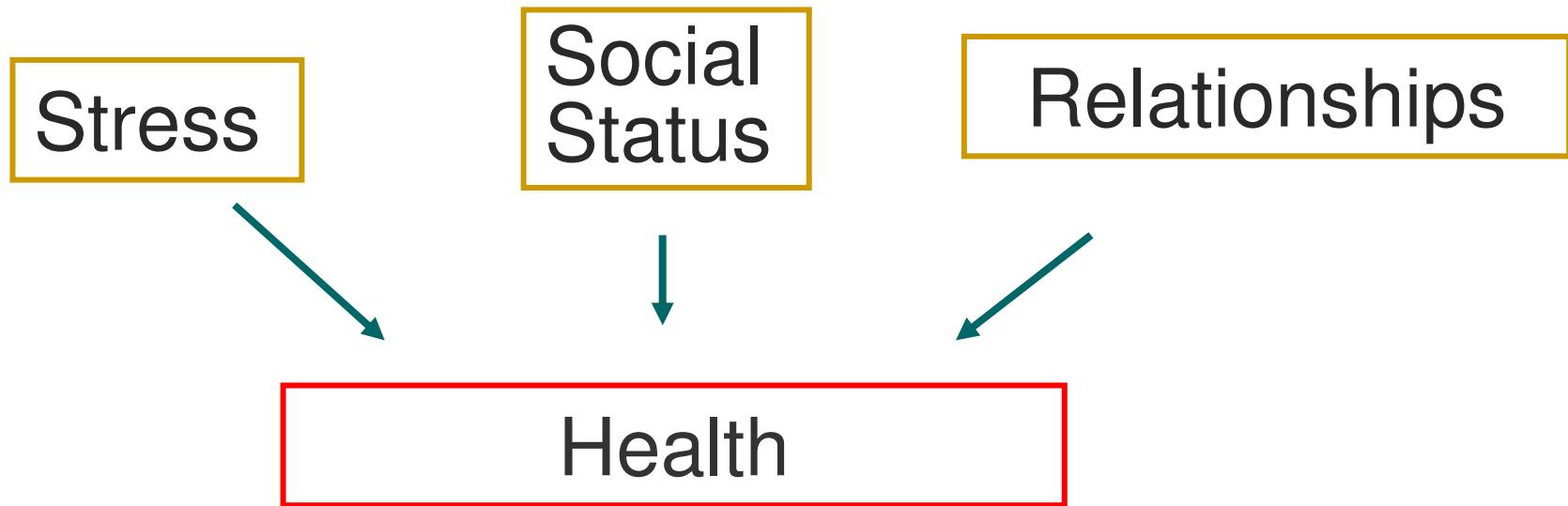
Integration:

- Environment
- Lifestyle
- Immunology
- Genetic factors
- Psychosocial context

(Weil, 1999; Wright, 1998)

Wright, 1999:

Psychosocial environment → Health - disease



Psychosocial factors

- **Influence on Morbidity and Severity**

Through:

- ❖ Parental care
- ❖ Social support
- ❖ Parent's mental health
- ❖ Child mental health

(Ortega, 2004; Weil, 1999; Wright, 1998).

Prevalence of Child mental health problems

- **in Brazil:**
- Varies between 8% and 22%
- Mean= 12,7%
- (Fleitlich e Goodman, 2000)

- Emotional and behavior Problems
- 5 - 15% for children 9 -10 years old
- (Rutter, 1970)



Mental health and chronic diseases relationship

- Contradictory results
- **Complex** and **indefinite** mechanisms
- the idea of **CAUSAL DIRECTION** has only recently been discussed

(Fontes Neto e Cols, 2005; Combs-Orme, 2002).

Mental health and asthma

- High frequency of **anxiety** disorders and **depression** was found in asthmatic patients
- **Greater prevalence** of **behavior problems** found among children and adolescents with asthma
- “**Psychological problems**, particularly depression, may be a **contributing factor** to asthma **morbidity** and **mortality**”

(FONTES-NETO, 2005; ALATI, 2007; WEIL, 1999)

- Children with clinically significant levels of behavior problems experience **18 more days of wheezing per year**
- Children with **severe** asthma present **higher scores** for **depression** and **anxiety**

(WEIL, 1999; KLINNERT, 2008)

Study questions

- **Do Behavior problems have the same distribution between asthmatics and non-asthmatics children?**
- **Do Behavior problems have an equal distribution between severe and non severe asthmatic groups?**



Conceptual Framework

GENDER, AGE, INCOME, MATERNAL EDUCATION

CHILD MENTAL
HEALTH

ASTHMA

Genetic
Factors

Smoking

REVERSE CAUSALITY

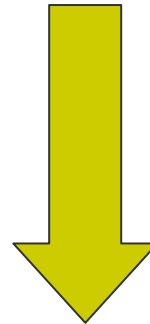
Baseline

1445



79 missing

1366



- 265 under 5 yrs excluded
- 84.1% answered by the mother

869 – 6-12 years olds

Measure

- **CBCL (Child Behavior Checklist)** Achenbach, 1991
- Behavior problems
- Provides parent-reported assessment of their child's behavioral functioning, across **multiple domains**
- covers **psychopathological symptoms** on childhood and adolescence



118 Items for Behavior problems

- Describing Behavior in the last 6 months
 - presence and frequency

“0”: never . “1”: sometimes . “2”: often

- Severity of the child’s behavior problem → score

- **Below 60 : normal**

- **from 61 to 63 points: borderline**

- **above 64 : clinical**

grouping the 118 items

Withdrawn

Somatic complaints

Anxious / depressed

INTERNALIZING

Social **problems**

Thought **problems**

Attention **problems**

Delinquency

Aggression

EXTERNALIZING



**Preliminary
Results**

Table 1: Pediatric asthma occurrence, behavior problems and child's characteristics (n=869)

Variables	Behavior problems				Total
	Non-clinical		clinical		
	n	%	n	%	
Gender					
Male	293	63,15	171	36,82	464
Female	271	66,91	134	33,09	405
Age					
5 - 7	262	63,13	153	36,87	415
8 - 12	302	66,67	151	33,33	453
Parental asthma*					
No	505	66,36	256	33,64	761
Yes	59	54,63	49	45,37	108

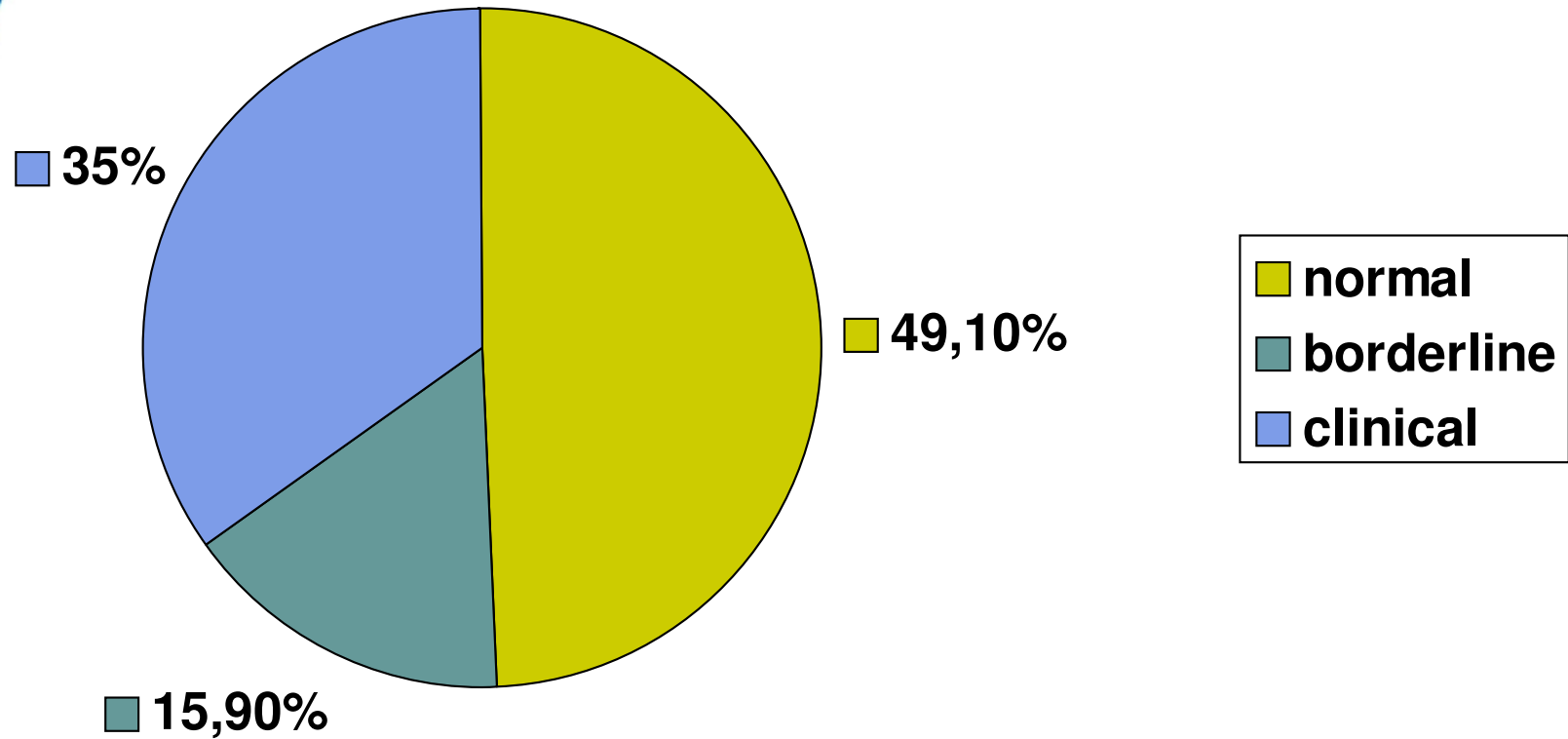
***p= 0.017**

Behavior problems

Variables	Non-clinical		clinical		Total
	n	%	n	%	
Maternal education *					
Up to age 5	116	66,67	58	33,33	174
Secondary	175	59,12	121	40,88	296
High school	271	62,43	125	31,57	396
income					
< 300 reais	274	62,27	166	67,73	440
> 300 reais	274	67,16	134	32,84	408
Smoking					
No	537	65,09	288	34,91	825
Yes	27	61,36	17	38,64	44

*p= 0.034

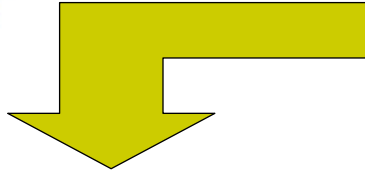
Total Behavior Problem Score



Asthma

Wheezing in the Last 12 months

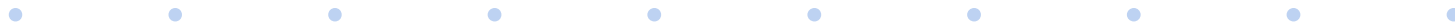
869



19,56%

Added at least one of these :

- Asthma at some point in life
- Wheezing after exercise
- 4 crises of wheezing
- Waking up because of wheezing



Asthma according to child behavior problem

Behavior Problem	Asthma				Unadjusted PR (95% CI)	Unadjusted OR (95% CI)
	Yes		No			
	n	%	n	%		
yes	77	25,25	228	74,75	1.53 (1.17 - 2.00)	1.71 (1.19 - 2.44)
no	93	16,49	471	83,51		
Total	170	19,56	699	80,44		

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Multivariate Analysis for asthma and child behavior problems

	Asthma	
Variable	Adjusted PR	(95% CI)
Behavior Problem	<u>1.487</u>	1.114 - 1.986

* **Poisson Model** (with **Cluster** – 24 ma)

* **Adjusted by:** SEX, AGE, INCOME, MATERNAL EDUCATION , SMOKING, PARENTAL ASTHMA



Raw Score distribution based on asthma and non-asthma conditions

Scales	Group		p*
	Asthma Median (P25-P75)	Non-asthma Median (P25-P75)	
Anxious / depressed	6,0 (4,0-9,0)	5,0 (3,0-8,0)	0,000
Withdraw	3,0 (1,0-4,0)	2,0 (1,0-4,0)	0,203
Somatic Complaints	2,0 (1,0-4,5)	2,0 (0,0-3,0)	0,000
Social Problems	5,0 (3,0-8,0)	4,0 (2,0-6,0)	0,001
Thought Problems	2,0 (1,0-5,0)	2,0 (0,0-4,0)	0,002
Attencion Problems	5,0 (2,0-9,0)	5,0 (2,0-8,0)	0,004
Delinquency	3,0 (1,0-5,0)	2,0 (1,0-4,0)	0,017
Aggression	12,0 (6,0-16,0)	9,0 (5,0-14,0)	0,000

*teste de Mann-Whitney

Conclusions

- **Higher asthma prevalence** among children with **behavior problems**
- The group of asthmatic children shows a **different behavior profile** to the group of non-asthmatic children
- There is a need to evaluate the influence of mental health in the **severity of asthma** to obtain more consistent results



THANK YOU!

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