The prevalence of psychiatric disorders among 5-10 year olds in rural, urban and slum areas in Bangladesh: an exploratory study

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Asia
0 1,000 Miles
0 1,000 Kilometers
60° N
40° N
Bering Sea
EUROPE
Ural Mts.
Russia
Georgia
Armenia
Turkey
Azerbaijan
Kazakhstan
North Korea
Japan
Mongolia
Syria
Uzbek.
Turkmen.
Iraq
Kyrgyzstan
Tajikistan
Iran
Afghan.
China
PACIFIC OCEAN
South Korea
Kuwait
Bahrain
Qatar
Saudi Arabia
Pakistan
Bhutan
Nepal
U.A.E.
Yemen
Oman
India
Laos
Philippines
Bangladesh
Thailand
Myanmar
Vietnam
Cambodia
Philippine Sea
Arabian Sea
Bay of Bengal
Brunei
Malaysia
Maldives
Sri Lanka
Indonesia
INDIAN OCEAN
Singapore
AUSTRALIA
60° E
80° E
100° E
120° E

Location and Border of Bangladesh

Bordered by Bay of Bengal in the south and all other sides by India except a small area in the east by Myanmar

Bangladesh: Geography

- **Area:**
  - **1,47,570 km.sq. Km**
- **Population:**
  - **149.25 million(8th largest)**
- **Literacy rate: 48.7%**
- **Religion:**
  - **89.6% Muslim, 9.2 % Hindu**
    1.2% others
- **Language:**
  - **Bangla (February 21, 1952)**
  - **World Language Day**

Introduction

- In the developed world, around 10-20% of children have psychiatric disorders
- Few studies in developing countries suggest that the prevalence is at least as high as above
- Some studies have found that children in Asia and Africa relatively rarely have conduct problems

Introduction

Bangladeshi children and adolescents

- **<18Y: 67 million (45% of population)**
- **Subject to conditions with negative impacts that affect physical and psychological well being e.g.,**
  - **poverty, malnutrition, poor living conditions, infectious diseases and illiteracy, unfavorable parental attitude**

Introduction

Conversely, Bangladesh has

- **Uniform traditional society**
- **Strong family support**
- **High degree of cohesiveness within the family inherent in the culture**

Introduction

No previous epidemiological studies of child mental health have been conducted in Bangladesh, partly due to lack of suitable measures

Objectives

General

To generate approximate prevalence as a guide to future research and service planning

Specific

ii. To estimate the differences in rates and types of child psychiatric disorders in rural,urban and slam areas of Bangladesh

ii. To examine the differences of variables between rural, urban and slum areas as a guide to explore the correlates of child psychopathology

iii. To provide methodological foundation for more extensive and representative epidemiological studies in Bangladesh in future

Methods: Study Design

- **Two-stage screening**
  - ***First,*** **total population was studied by multiple screening tests to divide the sample into 'screen positive' and 'screen negative' subjects**
  - ***Then,*** **full assessment of a mixture of 'screen positive' and 'screen negative' subjects was carried out by structured individual interview**
- **Source of participants**
  - **Rural (Nawabganj, Dhaka District: a representative rural area)**
  - **Urban (Mohammadpur, Dhaka city: a moderately prosperous urban area)**
  - **Slum (Ring Road-Veribadh slum, Dhaka city: a deprived urban area)**

Instruments

- **Household Questionnaire (HHQ)**
  - **Modified and finalized in the Pilot Study**
- **Self reporting Questionnaire (SRQ)**
- **Validated Bangla Strengths & Difficulties Questionnaire (SDQ)**
  - **available at www.sdqinfo.com**
- **Validated Bangla Development & Well-Being Assessment(DAWBA)**
  - **available at www.dawba.com**
- **ICD-10 Classification**
  - **Mental & Behavioral Disorders in Children & Adolescents**

Instruments validation

In pilot study

- Reliability, Validity, Standardization of measures were carried out to assess psychopathology among the Bangladeshi children and adolescents

- Feasibility of Ascertainment technique were checked

Methods

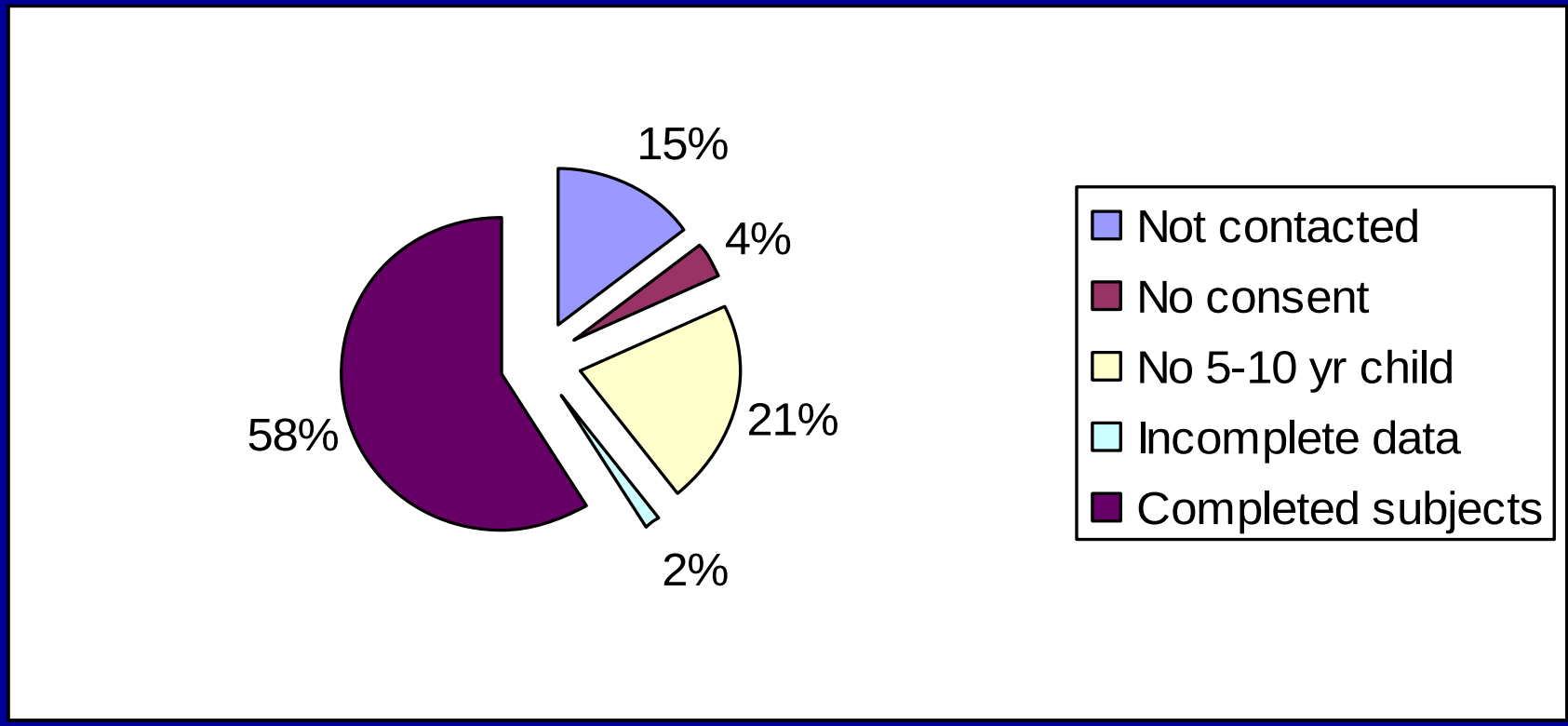
- **Sample size**
  - 1575 households approached
  - 922 children were included
- **Sampling Strategies**
  - Random selection of the households from the electoral list in the study areas
  - This ascertainment technique minimized the possibilities of missing children who are not attending school
  - In each household selected, one child will be randomly screened within age range of 5-10 years

Methods: Methodological steps

- **Step 1: Sampling**
  - Recruitment of households through electoral register
  - Recruitment of children from selected household
- **Step 2: Assessment**
- Questionnaire-SDQ and HHQ → Computer algorithm applied to select screen +ve and screen –ve cases
  - Structured interview → computer diagnosis program applied for ICD-10 diagnosis
- **Step 3:Rating**
  - Clinical rating performed using computer based ICD diagnosis and evaluating open ended questions
- **Step 4:Prevalence estimate**
  - Final diagnosis was made for prevalence estimate

Results

Inclusion and non-inclusion



Results
Participation rate per area

Area type	Number approached	Achieved sample	Participation rate
Rural	297	293	97%
Urban	326	280	69%
Slum	381	349	66%
Total	1004	922	75%

Results
Age distribution

Charact-eristics	Total N=922	Rural N=293	Urban N=280	Slum N=349	p*
Mean age (SD)	8.0 (1.7)	8.1 (1.8)	7.8 (1.6)	8.2 (1.7)	.02
Male	53%	52%	53%	52%	NS

Results
Gender distribution

Number	Males	Females	Total
Observed	481	441	922
Expected	470	452	922

Continuity-corrected chi-square showed no significant difference in Gender distribution between study population and total population of Bangladesh

Results

Gender distribution by area

Gender	Rural	Urban	Slam	Total
Male	152 (52%)	148 (53%)	181 (52%)	481 (52%)
Female	141 (48%)	132 (47%)	168 (48%)	441 (48%)
Total	293	280	349	922

Results

Distribution of religion by area

Religion	Rural	Urban	Slum	p*
Muslim	**199 (88%)**	**269 (96%)**	**345 (99%)**	**<0.001**
Others	**94 (38%)**	**11 (4%)**	**04 (01%)**	
Total	293	280	349	922

Results

Prevalence of any psychiatric disorder in each area

Area	Prevalence % (95% CI)
Overall (weighted)	15 (11-21)
Rural	15 (9-26)
Urban	10 (5-19)
Slum	20 (11-22)

Results

Prevalence by groups of disorders

Groups of disorders	Weighted prevalence %	95% CI
Overall rate	15	11-21
Any anxiety	8	51-13
Any hyperkinesis	2	1-4
Any behavioral	9	6-14
Autism spectrum	0.2	0.0-0.9

Results

Prevalence for each ICD Diagnosis

ICD-10 diagnosis	Weighted prevalence (95% CI)
Separation anxiety	1.5 (0.6-3.6)
Specific phobia	1.0 (0.3-3.1)
Social phobia	0.1 (0.0 – 0.8)
Panic disorder	No cases detected
Agoraphobia	No cases detected
PTSD	1.3 (0.4 – 4.5)

Results

Prevalence for each ICD Diagnosis

ICD-10 diagnosis	Weighted prevalence (95% CI)
OCD	2.0 (0.7 – 5.9)
Generalized anxiety	0.8 (0.4 – 1.6)
Other anxiety	2.5 (1.0 – 5.9)
Hyperkinetic disorder	2.0 (1.0 – 4.1)
Oppositional defiant disorder	5.9 (3.4 – 10.0)
Conduct disorder	2.9 (1.3 – 6.4)
Autism spectrum	0.2 (0.0 - 0.9)

Results

Differences of possible correlates

- urban area was the most educationally and materially advantaged, as judged by literacy levels and the possession of a refrigerator
- rural area had the highest rating for neighborhood helpfulness and the lowest rating for neighborhood danger
- slum did worst in all respects in terms of: lowest religious practice lowest school attendance higher rate of children in the family large family size having lowest social capital poor physical health status of the children higher maternal psychopathology

Discussion

This epidemiological study in three contrasting areas in Bangladesh:

- **Established that the overall prevalence of child psychiatric disorders was 15.2%**

- **The prevalence for the three main population groups was: 15.4% for children from rural families, 10.0% for children from urban families and 19.5% for children from slam families**

Discussion

- Prevalence rates per type of disorder were also obtained. The group of behavioral disorders (according to the ICD 10) was the most prevalent with estimates around 8.9%, followed by emotional disorders (mainly anxiety disorders) with estimates around 8.1%
- The pilot study also validated the methodology adopted in the main study part, including ascertainment methods and measures
- The possible variables for searching correlates in future identified

Discussion

Limitation of the study

- Although the three communities studied were chosen after informal local consultation as representative exemplars of rural, urban and slum areas, it cannot be ruled out the possibility that they may nevertheless be unrepresentative

- Present findings of the main study are necessarily provisional, awaiting confirmation by larger studies sampling from a greater number of randomly chosen areas.

Conclusions

Around 10-20% of Bangladeshi children have emotional and behavioral problems that are severe enough to result in substantial distress or social impairment, thereby warranting a psychiatric diagnosis, and warranting treatment too

Conclusion

- **Vast gap between service need and service provisions that must be addressed**
- **Urgent need to develop strong Child and Adolescent Psychiatry policy and resource-based feasible programs for developing CAMHS**

Let us nurture our young people today for better tomorrow

Thank you

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