Child Psychiatric Epidemiology Group (CPEG) Columbia University - NYSPI

MAJOR AREAS OF INTEREST

- CHILD MENTAL HEALTH
- EXPOSURE TO VIOLENCE / DISASTER
- NEEDS ASSESSMENT
- TRANSMISSION OF TRAUMA (PARENT & CHILD)
- SUBSTANCE USE / ABUSE
- INTERNATIONAL HEALTH
  - PARENTING
  - RESILIENCE
  - SUICIDALITY
- ENVIRONMENT
- BIOLOGICAL MARKERS (MRI, fMRI, Genetics, Cortisol)
- DECISION-MAKING
- EVACUATION BEHAVIOR
Background
NYC-BOE Needs Assessment Post 9/11

- **Service Access Brazil**
  - Duarte

- **Tsunami/War Sri Lanka**
  - Mandell

- **SARS & PTSD China**
  - Wu

- **Suicide Tajikistan**
  - Musa

- **Child Soldiers Uganda**
  - Hoven

- **12 Country Intervention**
  - Hoven

- **9 Country MH Awareness**
  - Hoven

- **WTC Evacuee Pilot Study**

- **10 Country Intervention**
  - Hoven

- **Exposure to Violence & Disaster**

- **First Responders NY & Israel**
  - Hoven

- **Family Decision-Making**

- **Stress & Justice I**
  - Female

- **Stress & Justice II**
  - Male

- **Stress & Well-Being Study**

- **Suicide Tajikistan**
  - Hoven

- **Genetics fMRI**

- **Red-Cross EMTs + Child Screen**
NYC-WTC-BOE Study

- February-March 2002
- Representative sample of NYC public school students (Grades 4-12)
- 94 schools, N=8,236

PI: Christina Hoven, Dr.PH.
Fifteen Mile Radius from Ground Zero

- Participating Schools
- Actual Ground Zero

Stratum:
1: Ground Zero Area
2: High Risk Areas
3: Rest of NYC

George J. Musa
Child Psych Epi Group
Columbia University - MSPH
March 1, 2003
Projection: NY-LI State Plane (NAD83)
Sources: NYC Dept. of City Planning
NYC Dept. of Education
# Prevalence of Six (Probable) Internalizing Mental Disorders, Exposure Level, and Community Rates Pre and Post September 11 (N=8,236)

NYC-BOE WTC School Survey
Grades 4 – 12

<table>
<thead>
<tr>
<th>Disordersa</th>
<th>Estimated # students</th>
<th>Total Sample N = 8,236</th>
<th>Exposure Levelb,c</th>
<th>Pre September 11</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>%</td>
<td>SE</td>
<td>Severe N = 2,650</td>
<td>Moderate N = 2,840</td>
</tr>
<tr>
<td>PTSD</td>
<td>75,916</td>
<td>10.6</td>
<td>18.4</td>
<td>10.0</td>
</tr>
<tr>
<td>Major Depression</td>
<td>58,011</td>
<td>8.1</td>
<td>11.0</td>
<td>8.0</td>
</tr>
<tr>
<td>Generalized Anxiety</td>
<td>73,767</td>
<td>10.3</td>
<td>14.1</td>
<td>9.8</td>
</tr>
<tr>
<td>Separation Anxiety</td>
<td>88,091</td>
<td>12.3</td>
<td>20.1</td>
<td>11.8</td>
</tr>
<tr>
<td>Panic Disorder</td>
<td>62,308</td>
<td>8.7</td>
<td>13.0</td>
<td>8.4</td>
</tr>
<tr>
<td>Agoraphobia</td>
<td>105,996</td>
<td>14.8</td>
<td>21.8</td>
<td>15.4</td>
</tr>
<tr>
<td>Anyd Anx./Dep. Dx</td>
<td>204,829</td>
<td>28.6</td>
<td>38.9</td>
<td>29.1</td>
</tr>
</tbody>
</table>

Weighted data

a Reported rates are with impairment, except for Alcohol and Conduct Disorder.

b Significant Exposure=2 or more direct and/or at least 1 family exposure; Moderate Exposure=1 direct and no family exposure; Mild Exposure= no direct or family exposure.

c Results of paired Chi-Square Tests on Exposure Level: all comparisons are significant at p=0.01, except for CD and Alcohol (Moderate x Mild and Moderate x Significant)

d Any is limited to PTSD, Major Depression, Generalized Anxiety, Separation Anxiety, Panic and Agoraphobia (Hoven et al., 2005, "Psychopathology among New York City Public School Children 6 Months after September 11", Archives of General Psychiatry)
Prevalences\(^1\) of Probable PTSD and MDD, Among NYC Public School Students in Grades 4-12, Whose Family Members Were (or Were Not) in the WTC at the Time of the Attacks (N = 8,236)

1. Weighted prevalences.

Hoven et al., 2009
Familial Exposure and Mental Health Problems in The Context of a Disaster

Exposure to Disaster

Parental Mental Health / Parenting Problems

Child Mental Health Problems
First Responder and Evacuee Study

Mental Health of Children

- whose parents were in the WTC buildings and evacuated
- whose parents were First Responders (police officers, EMTs or fire fighters)

Funded by the National Institute of Child Health and Human Development (NICHD, # 1R01 HD046786-01A2),
First Responder and Evacuee Study Goals and Design

- Goal: To understand the impact over time of parental exposure to stress and trauma on their children

- Design:
  - Longitudinal: baseline and 12 month follow-up
  - Multi-site study: samples in NYC, US and Tel Aviv, Israel
  - Index cases and child age (and gender preferred) matched controls
Sample

Children (9-16 y.o) with one parent/caretaker who is:

**NYC Sample (n=800):**

- 1. Police Officers
- 2. Emergency Medical Technicians
- 3. Fire Fighters
- **4. WTC evacuees* and Ground Zero Resident** Evacuees
- 5. Non-Traditional First Responders (eg., iron workers, sanitation, etc.)
- 6. Non-WTC evacuees living in the same geographic area (children matched by age, gender)
- 7. Non-Fire Fighter Controls living in the same geographic area as Fire Fighters (children matched by age, gender)

For groups 1 – 5: One randomly-selected child per household

**Israeli Sample (n=210):**

- 1. Emergency Medical Technicians
- 2. Fire Fighters
- 3. School Children randomly selected

* everybody who was in one of the two WTC towers or in any of the 38 damaged/destroyed buildings on 9/11/01.

** Resided south of Canal Street on 9/11/01
Adolescent and Family Decision-Making In Time of Disaster

(NOAA funded through NJ Seagrants)

Principle Investigator: Christina W. Hoven

Co-Principle Investigators: Lawrence Amsel, George Musa

Key Personnel: Thao Doan, Judith Wicks, Tyler Sylk, Spencer Harbo, Alison Dougherty
Specific Aims

- **AIM 1.** To test the effect of Decision-making Styles (DMS) and Decision-making Compatibility (DMC) on Disaster Preparedness (DP) and Actual Disaster Evacuation (DE)

- **AIM 2.** To test the effect of Decision-making Styles (DMS) and Decision-making Compatibility (DMC) on constructive family decision-making processes

- **AIM 3.** To test the effect of constructive family decision-making on Disaster Preparedness (DP) and Disaster Evacuation (DE).

- **AIM 4.** To impact curriculum for adolescents around DP and DE behavior
Samples

- \( N = 48 \) 9/11 Evacuee families (from the First Responder Study) who:
  - Reside \( \frac{1}{2} \) mile from the Super-Storm Sandy Storm Surge; and,
  - Have an adolescent ages 14-18.

- 24 of these families evacuated due to the Storm
- 24 did not evacuate
Coordination of Activities

**Inputs**
- Team of experienced investigators with expertise in children's disaster response
- Previous contact and data collection from sample
- Partnerships with UASEM, Red Cross, OEM, NCDP, RYTF, HCHS
- Strong record of publication and dissemination

**Activities**
- Administer questionnaires and tasks to parents and adolescent
- Conduct family focus groups
- Perform quantitative and qualitative data analysis
- Prepare reports of findings and disseminate through peer-reviewed journal articles, conference presentations, and reports to all relevant stakeholders.

**Outputs**
- Results from quantitative and qualitative analyses
- Educational materials, etc. for end users
- Peer-reviewed journal articles, conference presentations, and reports

**Outcomes**
- Greater awareness of the relationships between parent and child decision-making styles and disaster preparedness and response
- Enhanced knowledge of the ways in which family negotiation styles and conflict/cooperative attitudes influence disaster-related decision-making
- Improved understanding of the role that adolescents play in disaster preparedness and response
- Better communication strategies around preparedness and evacuation

**Impact**
- Improved emergency preparedness and response among families
WHAT WE ARE DOING NOW
Mixed Methods Approach

- Brief Quantitative Interview with both parents and adolescent

- Formal Decision-Making Tasks: Parent and Adolescent
  - Risk Taking
  - Trust and Reciprocity Game

- Family Discussion Group (Qualitative): all available family members over the age of 12.
Brief Quantitative Interview

- Recall: We have been following these families already and have a plethora of data on them
- Parents and index adolescent
- Demographics
- Preparedness
- Affects of Sandy on self and family
- Post-sandy Preparedness
- Basic mental health and wellness questions
- Attitudes towards available storm warning and evacuation information
Family Discussion Group (Qualitative)

- A “Focus-Group” – style open ended family discussion
- Ascertain how family decided to Evacuate or Not-Evacuate
- Focus on decision style of family
  - Dictatorial
  - Collaborative
  - Who are the Deciders
  - How do they decide
- Sources of information used – which are trusted which not
- KEY : Degree of inclusion of adolescent’s input
- How to improve public communication to enhance the FDM process
The BART – Risk Taking
We will look at one example. In this round Player 1 is initially given $11, and Player 2 gets $0.

**STAGE 1, IN/OUT CHOICE:** If Player 1 chooses OUT of this round, both players keep these initial amounts and the round stops right away with no investment, no profit and no sharing.

- **OUT**
  - Player 1: $11
  - Player 2: $0

- **KEEP**
  - Player 1: $4
  - Player 2: $20

- **SHARE**
  - Player 1: $13
  - Player 2: $11

But if Player 1 chooses IN and invests their $13 in Player 2, then the total money held by Player 2 increases to $24 and Player 2 then must decide how to share this new amount.

**STAGE 2, KEEP/SHARE:** Player 2 can either KEEP, most of the money, say $20, giving back only $4, or they can choose to SHARE by giving back $13 and reciprocate the trust shown to them by Player 1.
Expected Outcomes

- Key findings include important human-factor aspects of decision and negotiation style.

- Findings will be shared with our end-user education partners to aid in the production of curricula and tangible educational materials to enhance disaster preparedness.

- In collaboration with our partners, we will identify study findings that can be incorporated into improved disaster interventions, training, planning and responses.
End Products of the Research

- The ultimate aim of this research is to increase our current understanding of the various intricacies of family decision-making processes and to examine the roles that adolescents play in those processes.

- Assist in the development of future strategies for disaster educational programs based on a scientific understanding of individual and group decision-making processes and their coordination.

- It also holds the promise of empowering adolescents and young adults to have more relevant roles in family decisions.
Partners and End Users

- American Red Cross
  - Grant Hansen, Director, Digital Product Management

- New York City Office of Emergency Management (OEM)
  - Christina Farrell, Deputy Commissioner for External Affairs.

- The Rockaway Youth Task Force
  - Milan Taylor, President and Founder.
  - Empowering young adults through civic engagement, mentoring, and volunteer opportunities.

- The National Center for Disaster Preparedness (NCDP), Columbia University
  - Irwin Redlener, Director

- The Urban Assembly School for Emergency Management (UASEM)
  - Elizabeth Oliver, Partnership Coordinator
  - To train high school students for careers in emergency managers

- Hunter College High School
  - Tony Fisher, Principal
Summary

**Inputs**
- Team of experienced investigators with expertise in children's disaster response
- Previous contact and data collection from sample
- Partnerships with UASEM, Red Cross, OEM, NCDP, RYTF, HCHS
- Strong record of publication and dissemination

**Activities**
- Administer questionnaires and tasks to parents and adolescent
- Conduct family focus groups
- Perform quantitative and qualitative data analysis
- Prepare reports of findings and disseminate through peer-reviewed journal articles, conference presentations, and reports to all relevant stakeholders.

**Outputs**
- Results from quantitative and qualitative analyses
- Educational materials, etc. for end users
- Peer-reviewed journal articles, conference presentations, and reports

**Outcomes**
- Greater awareness of the relationships between parent and child decision-making styles and disaster preparedness and response
- Enhanced knowledge of the ways in which family negotiation styles and conflict/cooperative attitudes influence disaster-related decision-making
- Improved understanding of the role that adolescents play in disaster preparedness and response
- Better communication strategies around preparedness and evacuation

**Impact**
- Improved emergency preparedness and response among families
Thank YOU
END of TALK
American Red Cross

- American Red Cross is responsible for creating and distributing training materials related to disaster preparedness, with a focus on digital and new media approaches, an avenue especially close to adolescent consumers.

- **Grant Hansen Director, Digital Product Management**
  - He is part a team that won a Fresh award for creative approaches to communication around potential disasters, for a Hurricane app that provides a real-time information during a hurricane, offering invaluable aid.
  - He is thus very aware of the challenges involved in effectively reaching families and getting them to make better decisions around Disaster Preparedness.
  - Our research that may impact the Red Cross educational materials by developing new ways of conveying important preparedness and recovery information, specifically through adolescents and younger family members.
Among their programs to educate the public is the Ready New York Kids campaign in the public schools, a program aimed at helping young people become more aware of, and prepared for emergency situations.

Christina Farrell, Deputy Commissioner for External Affairs.

– As such she is very committed to the role of youth in the management of emergency situations.
– This study could further the work of the OEM by helping to create better tools to more effectively reach individuals and effect their behavior in ways that matter decision-making.
– Using our findings in conjunction with her office could impact a very large population of young people and families in important ways.
The Rockaway Youth Task Force

- Has dedicated themselves to empowering young adults through civic engagement, mentoring, and volunteer opportunities (http://www.rytf.org/OUR-MISSION.html).

- Milan Taylor, President and Founder.
  - Strongly advocates adolescents to take more active leadership roles both within the Rockaway community as well as within their families.
  - The Task Force has worked with the Red Cross in assisting families by rebuilding their homes in the wake of Super-storm Sandy, and has expressed their willingness to work with us as an end user.
  - Findings from this research will prove vital in their continued efforts to better understand adolescents’ impacts on family decision-making process during disaster situations and ultimately to empower them through their education programs and civic opportunities.
The National Center for Disaster Preparedness (NCDP), Columbia University

- Have made it their mission to understand and improve the country’s response to large scale man-made and natural disasters, and have taken a special interest in assisting vulnerable populations (http://ncdp.columbia.edu/).

- Irwin Redlener, Director
  - The NCDP plays a pivotal role in raising awareness of deficiencies in government disaster preparedness.
  - This research will greatly contribute to its understanding of emergency preparedness and response among families who are exposed to severe catastrophes, and that our future findings may subsequently increase evacuation rates in the event of future disasters.
The Urban Assembly School for Emergency Management (UASEM)

- As a new school, starting only last September, the UASEM’s main objective is to teach high school students how to better respond to extreme disaster situations by placing them in the roles of emergency managers (http://www.urbanassembly.org/uasem.html).

- Elizabeth Oliver, Partnership Coordinator
  - They implement this by training their students to refine their communication and complex problem solving skills for future careers.
  - Adolescents are often overlooked in the decision-making process.
  - Findings from this research and CPEG’s past experiences with disaster-exposed families will help them to plan and incorporate new curriculum to better prepare New York City youths to face different kinds of emergencies.
Hunter College High School

- Hunter College High School has often been a training ground for innovative new programs and specialized interventions, which include emergency preparedness.

- Tony Fisher, Principal
  - Properly understanding the cognitive and social mechanisms behind family negotiations is an important research goal that supports in better educating adolescents about disaster awareness and risk assessment in emergency situations.
  - Results of this research may yield effective new material to be used in school curricula to promote awareness and better educate young adults on how to prepare for disaster situations.