Some Research on Resilience in Singapore

Dr Daniel Fung
Vice Chairman Medical Board (Clinical), IMH
Adj Assoc Prof, Duke-NUS GMS and NTU
How resilient can Man be when Mother Nature unleashes her wrath?
26 December 2004 TSUNAMI

“Killed between 176,665 and 184,378 people in Asia and Africa…”
26 December 2004 TSUNAMI

“49,622 and 50,533 people remain unaccounted for”

“Expected to take four years to rebuild much of the parts of south Asia”
More than A Year Later……

"I praise your courage and resilience..."

Pakistan President Pervez Musharraf,
09 October 2006
1995 KOBE QUAKE

5100 deaths
Man becomes the master of difficult situations by refusing the assistance of weak man.

He relies on his own strength of character.

I Ching
The gem cannot be polished without friction, nor man perfected without trials.

Chinese Saying
A local gem who has been through many trials and friction in life...

Elizabeth Choy

“Locked up and tortured for 193 days....”
“War Tribunal asked the war heroine if she wanted her torturers executed...”

Her reply:

"If not for war, they would be just like me. They would be at home with their family, doing just ordinary things and peaceful work. Let us pray that there will be no more war..."
The weak can never forgive. Forgiveness is an attribute of the strong.

*Mahatma Gandhi*

Elizabeth Choy could **FORGIVE** her torturers and move on in life...

*How many people could do that?*
MR HARRIS NG is a remarkable man. Not just because he suffers from a chronic mental condition, but also because he is willing to go public about it.

The Electric New Paper,
19 August 2003
“If you treat an individual as he is, he will stay as he is, but if you treat him as if he were what he ought to be & could be, he will become what he ought to be & could be.”

Johann Wolfgang von Goethe
What is Resilience?

- Robustness: Ability to withstand stress

- Flexibility: Ability to change with stress
What is Resilience?

- Resilience:
  - The *overcoming* of stress or adversity
  - A relatively *good outcome* despite risk experiences
What is Resilience?

• Many different definitions
• It is NOT social emotional wellbeing (or competence)
• It is NOT mental wellness
• Michael Rutter: Relative resistance to environmental risk experiences
Example of Resilience

IQ SCORES AT 11 YEARS OF ROMANIAN ADOPTEES WHO CAME TO UK AGED 2-3½ YEARS

- Profound early deprivation
  - IQ 100 – 129 (n = 8)
  - IQ 70 – 99 (n = 26)
  - IQ 50 – 69 (n = 9)
  - IQ < 50 (n = 3)
Risk Factors in Singapore Children

Risk Factors Associated With Emotional & Behavioural Problems In Singaporean Children

1Bernardine S.C. Woo, 2Ng Tze Pin,
1Daniel S.S. Fung, 2Chan Yiong Huak,
1Lee Yi Ping, 1Jessie B.K. Koh, 1Cai Yiming

1Department of Child and Adolescent Psychiatry,
Institute of Mental Health
2National University of Singapore

NHG Annual Scientific Congress
30 September 2006
Methods

Sampling frame from MOE
Primary school children aged 6 to 12

2 stage sampling technique
Random sample of 18 of the 178 primary schools in Singapore
Random sample of students from each school proportional to size of school

Informed consent
Obtained from parents of children eligible to participate in study

N = 2141 (68%)
Measures

• Child Behaviour Checklist (Achenbach & Edelbrock, 1992):
  – Parent-reported, 118 items, broad range of emotional & behavioural difficulties in children aged 4-18, 6-month period
  – Widely used throughout the world, satisfactory reliability & validity
  – 2 syndrome groups: Internalising & Externalising Problems
  – Total Problems score

• Socio-demographic information:
  – Age, gender, ethnicity
  – Parents’ marital status, educational level & occupation
  – Number of siblings, residential type, primary caregiver

• Raven’s Progressive Matrices (Raven et al, 2000):
  – Paper & pencil IQ test
Children who scored at or above the clinical cut-point on the CBCL were compared to those who scored below the cut-point.

Multivariate logistic regression was performed to determine the risk factors independently associated with mental health problems.
Results

Socio-demographic characteristics of children
(n=2141)

<table>
<thead>
<tr>
<th></th>
<th>%</th>
<th></th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>50.1</td>
<td>Mother: Married</td>
<td>91.5</td>
</tr>
<tr>
<td>Female</td>
<td>49.9</td>
<td>Single/divorced</td>
<td>8.5</td>
</tr>
<tr>
<td>6-8yr</td>
<td>29.1</td>
<td>Father: Primary</td>
<td>19.0</td>
</tr>
<tr>
<td>9-10yr</td>
<td>33.4</td>
<td>Secondary</td>
<td>44.0</td>
</tr>
<tr>
<td>11-12yr</td>
<td>37.5</td>
<td>Pre-U</td>
<td>17.6</td>
</tr>
<tr>
<td>Chinese</td>
<td>76.0</td>
<td>Tertiary</td>
<td>19.4</td>
</tr>
<tr>
<td>Malay</td>
<td>14.5</td>
<td>HDB</td>
<td>80.8</td>
</tr>
<tr>
<td>Indian/others</td>
<td>9.5</td>
<td>Private</td>
<td>19.2</td>
</tr>
</tbody>
</table>
Results

Risk factors associated with mental health problems

Male gender
  *Adjusted OR 2.1, 95%CI 1.4-3.1

Low intellectual ability
  *Adjusted OR 3.4, 95%CI 1.5-7.9

Mothers being single, divorced, widowed, deceased
  *Adjusted OR 2.9, 95%CI 1.3-6.5

Being cared for primarily by domestic maids, day care service providers, foster parents
  *Adjusted OR 1.8, 95%CI 1.0-3.2

*OR adjusted for age, gender, ethnicity, intelligence level, marital status, parents' educational level, parents' occupation, primary caregiver, number of siblings, residential type
All results significant at p < 0.05
Results

Risk factors associated with internalising problems

Older age
*Adjusted OR 2.4, 95%CI 1.0-5.7

Low intellectual ability
*Adjusted OR 3.0, 95%CI 1.2-7.5

Mothers being single, divorced, widowed, deceased
*Adjusted OR 3.6, 95%CI 1.6-8.0

Being cared for primarily by domestic maids, day care service providers, foster parents
*Adjusted OR 2.2, 95%CI 1.2-3.8

*OR adjusted for age, gender, ethnicity, intelligence level, marital status, parents' educational level, parents' occupation, primary caregiver, number of siblings, residential type

All results significant at p < 0.05
Risk factors associated with externalising problems

Low intellectual ability
  *Adjusted OR 3.5, 95%CI 1.2-10.0

Fathers being less educated
  *Adjusted OR 6.5, 95%CI 1.4-30.4

Being cared for primarily by domestic maids, day care service providers, foster parents
  *Adjusted OR 3.2, 95%CI 1.4-7.7

*OR adjusted for age, gender, ethnicity, intelligence level, marital status, parents’ educational level, parents’ occupation, primary caregiver, number of siblings, residential type

All results significant at p < 0.05
Discussion

- Mental health problems in Singaporean children are associated with multiple risk factors, the most significant being
  - Low intellectual ability
  - Parents being single, divorced, widowed or deceased.
- Protective factors
  - High intellectual ability
  - Being cared for by primarily by parents or grandparents.
- No significant associations were found between mental health problems and ethnicity, number of siblings and residential type.

- Clinical implications
  - More community support for families whose parents are single, divorced, widowed or deceased.
  - Learning support for children with learning difficulties.
  - Close collaboration between child mental health professionals and educationists.
Conclusions
• 149 parents of children with special needs (developmental disorders and intellectual disability)
• 119 females (79.9%) and 29 males (19.5%)
• Most parents were within 30-49 years of age
  – 52.3% of parents in the median age group of 40-49
  – 38.9% of parents from 30-39 years
• 75.2% were Chinese, 13.4% were Malays, 6.7% were Indians and 4.7% were of other ethnicities.
• 36.9% of this population was Christians, 27.5% were Buddhists, 15.4% was Muslims and 18.8% had other religions.
• Most parents were married (91.3%)
• 51.7% of the parents had full-time jobs
Singapore Example II

Coping Response

Demand of Care
Socioeconomic Status
Social Support

Perceived Burden

Coping Style
Hope & Optimism

Hope & Optimism

Caregiver's outcome
- Subjective well-being
- General Health

Caregiver's expectation of child's outcome

Resilience
Family Resilience

- Resilience often studied as an individual adaptive mechanism
- Family plays a prominent role in an individual’s life and provides financial, social and emotional support for the individual
- Family resilience is measured as:
  - Family solidarity (the bonding, care and love within the family)
  - Meaning-making (making sense of life situations)
  - Spirituality (faith in God / ancestors worshipping)
  - Emotion-regulation
Family Resilience

188 participants (111 nurses and 77 family members) from two Singapore hospitals affected by SARS in 2003.

<table>
<thead>
<tr>
<th>Family-unit variables</th>
<th>FR (Mean)</th>
<th>FR (SD)</th>
<th>SWB</th>
<th>Anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>FR (Mean)</td>
<td>-</td>
<td>-.16</td>
<td>.50**</td>
<td>-.21</td>
</tr>
<tr>
<td>FR (SD)</td>
<td>-</td>
<td>-</td>
<td>-.19</td>
<td>.26*</td>
</tr>
<tr>
<td>SWB</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-.61**</td>
</tr>
</tbody>
</table>

*p<.01, **p<.001

Note. FR=family resilience; SWB = Subjective well being.
“Steeling” Effects

- Experimental stress in animals leads to beneficial effects on the neuroendocrine system.
- Repeated parachute jumping leads to physiological adaptation.
- Exposure to infections leads to relative immunity.
- Experience of happy separations in early childhood leads to better adaptation to hospital admission.
- Experience in older children of coping with family poverty may lead to psychological strengths.
Reasons for “Steeling”

• Physiological adaptation
• Psychological habituation (mental preparedness)
• Sense of self-efficacy (competence)
• Acquisition of effective coping strategies (problem solving)
• Cognitive redefinition of the experience (reframing)
ANTISOCIAL BEHAVIOUR AS A FUNCTION OF MAOA ACTIVITY AND A CHILDHOOD HISTORY OF MALTREATMENT (Caspi et al., 2002)

Composite index of antisocial behaviour (z scores)

- Low MAOA activity, n = 163
- High MAOA activity, n = 279

Childhood maltreatment
What have we learned?

1. Wide range of outcomes to similar risks
2. Resilience may be the result of individual variations in the absence of negative environmental hazards
3. Resilience may come from physiological or psychological coping processes rather than external risk or protective factors
4. Family resilience is linked to individual resilience
5. Resilience may be affected by genes or by the damaging effects of stress/adversity on the brain
Promoting Resilience

Fostering protective qualities

• good intelligence / scholastic achievement
• secure selective attachments
• multiple harmonious relationships
• sense of self-efficacy
• range of social problem-solving skills
• positive social interactional style
• flexible, adaptive approach to new situations
Promoting Resilience

Provision of range of adaptive experiences

• opportunities to cope successfully with
• challenges / stresses within the individual’s capacity
• opportunities to succeed in range of settings and circumstances
Managing Adversity

Dilution of impact of stress / adversity

• Provision of alternative sources of support / relationships etc
• Fostering social problem solving / self-efficacy / adaptive coping
• Fostering positive adaptive cognitive set
• Avoidance of damaging coping strategies (such as reliance on drugs, destructive anger, ‘giving up’)
After Negative Experiences

Focus on ‘turning point’ experiences that:
• Provide new opportunities that involve a break with the negative aspects of the past
• Provide a change of mental set
• Provide improved coping strategies
Summary

- Reduction of impact of adversity on the individual
- Reduction of negative chain reactions
- Increasing positive chain reactions
- Opening up opportunities
- Neutralising experiences
- Positive cognitive processing of experiences
In Conclusion

• Feel good about themselves
• Relate well with their families, caregivers and peers
• Enabled resilience
• Empowered from harm
Thank You