“The Challenge of Escalating Chronic, Non-Communicable Diseases in the Asia Pacific Region”

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Introduction – Problem statement

- CNCDs account for the largest burden of mortality and morbidity in the Asia Pacific region.
- Economic and social change drive the global epidemic in CNCDs
- Quality of life suffers in addition to posing an unprecedented challenge to healthcare systems most of which are unprepared and in transition
- Monitoring and prevention are key
- There is a serious lack of comprehensive, comparable health risk behavior data available for adults across countries and virtually none for youth in the region
- Lack of comparable cross country data adversely affects our knowledge of the determinants of CNCDs and ability to develop prevention strategies.

Objectives

- Investigate the role of rapid social, economic and cultural change on health risk behaviors, including tobacco, alcohol, and other substance abuse, poor diet and sedentary behavior; mental health and life stressors, and health practices and outcomes in communities in low-, middle-, and high income countries in the Asia Pacific region
- Inform the development of effective family and community interventions and policies for the control and prevention of NCDs
- Pave the way for a community based trial(s) for risk factor reduction

Methodology

- Adapt from the CSCS and develop and administer comparable survey instruments across participating AWI sites to assess health status, health risk behavior, health care access data for families (middle and high school students and their parents), college students, and adult workers from 18 – 60 years of age.

Groups under study

1. Middle school students
2. High school students
3. Professional/technical school students
4. Parents of #1-3 above
5. College students
6. Workers ages 18-65

Sampling

- Stratified sample
- Samples will be drawn from specified target populations to assess individual, institutional, community, social, cultural, and environmental factors contributing to health risks
- Gender, school type, and community characteristics will be controlled by the stratification of sampling units

PROPOSED PROJECT SAMPLE	Total Sample per city	Total Sample for 10 sites
Middle School 7th grade (3 districts [H-M-L]; 3 schools per district [H-M-L] = 9 schools total; 1 class per school=9 classes total x 45 students per class)	400	4000
Parents (2 – at least one parent or guardian should participate)	*600*	*6000*
High School 10th grade (3 districts [H-M-L]; 3 schools per district [H-M-L] = 9 schools total; 1 class per school = 9 classes total x 45 students per class)	400	4000
Parents (2 – at least one parent or guardian should participate)	*600*	*6000*
Professional/Technical School 10th grade (3 districts [H-M-L]; 3 schools per district [H-M-L] = 9 schools; 1 major per school, 1 class per major = 9 classes total x 45 students)	400	4000
Parents (2 – at least one parent or guardian should participate)	*600*	*6000*
Subtotal for MS/HS/PTS students	**1,200**	**12,000**
Subtotal for MS/HS/PTS parents	**1,800**	**18,000**
College 1st year (1 college, 4 majors, 2 classes per major = 8 classes total x 50 students)	400	4000
College 4th year (1 college, 4 majors, 2 classes per major = 8 classes total x 50 students)	400	4000
Subtotal College	**800**	**8000**
Workers: Age 18-24 (with equal gender distribution) non-college	400	4000
Age 25-50 (with equal gender distribution) with and without college	400	4000
Age 51-65 (with equal gender distribution) with and without college	200	2000
Subtotal Worker	**1,000**	**10, 000**
TOTALS	**4,800**	**48,000**

Sample stratification

- **Step 1:** In each study city, sort administrative districts into three groups according to the **$$$**-highest, **$$**-middle, **$**-lowest average income of residents
- Local AWI study teams in consultation with appropriate municipal government agencies will provide the income information
- Randomly select 1 district from each of the **$$$**, **$$**, **$** district clusters

Middle- and High School Sampling

- **Step 2:** Obtain a list of middle schools and academic high schools situated within each of the three selected **$$$**, **$$**, **$** districts
- Information can be obtained from the municipal education committee, board of education, etc.
- Sort the schools within each of the **$$$**, **$$**, **$** districts into three groups according to the **AAA**- highest, **AA**- middle, or the **A**- lowest level of ***academic achievement/quality***

Middle- and High School Sampling

- Randomly select one school from each group of schools
- Randomly select one class from each of 9 middle- and 9 high schools
- Total of 18 schools, 18 classes for survey administration
- 800 M/HS students per city

$$$ AAA	$$$ AA	$$$ A
$$ AAA	$$ AA	$$ A
$ AAA	$ AA	$ A

Grade 10 Professional/Technical High School Sample

- One professional/technical high school selected from each of 3 administrative districts; a total of 3 professional schools per city
- Matched across districts on number of enrollments, majors, and male/female student ratios
- Three majors will be selected to represent diverse areas if study (technical, service, etc). *Majors may vary between cities*
- Summary: 1 school per district, 3 majors per school, 3 classes per major = 9 classes total
- 400 students per city

Parent samples

- For middle- , high- and professional/technical school samples, we will send home questionnaires for students to give to their parents
- We expect at least 1.5 parental questionnaires per student to be returned and completed
- 1800 parents per city

College Sample

- College sample comprises 1st and 4th year students
- For each of the 1st and 4th year samples, city teams will select 1 local or city level college *(national level college students will not necessarily be representative of life in the study city)*
- At each college, 4 diverse majors will be selected and 2 classes will be randomly selected from each of the majors for the survey.
- 800 college students per city

Adult Worker Sample

- Three adult worker samples (equal gender distribution)
  - 18-24 yrs, no college – 400 per city
  - 25-50 yrs, college/no college – 400 per city
  - 51-65 yrs, college/no college – 200 per city
- Sample may be derived from health clinics, job markets, worksites, etc. ***(AWI group will discuss a comparable site selection)***

Measurement development

- Measures borrowed from established scales and validated in pilot studies (e.g. tobacco, alcohol, MH, etc)
- New measures have been developed and tested (e.g. Westernization, Relative deprivation, etc.)
- All measures should be piloted, translated, and back translated if they have not been tested in each participating country
- AWI should have a work group to contribute constructs and items to the survey so that the data serve multiple purposes

Construct Categories

- Demographics
- Home and community environment
- Economic impact
- Dispositional phenotypes
- Health risk behaviors
- Access to health resources
- Health outcomes
- Mental health status
- Quality of life

CONSTRUCTS

- GENDER & AGE
- ETHNICITY
- BIRTHPLACE & RESIDENCE
- MARITAL STATUS
- EDUCATION
- ACADEMIC PERFORMANCE
- INCOME
- POVERTY INDEX
- CONSUMER ITEMS
- RELATIVE DEPRIVATION
- NEIGHBORHOOD ENVIRONMENT
- OCCUPATION
- EMPLOYMENT STATUS
- FAMILY ENVIRONMENT
- OUT-CULTURAL INFLUENCES
- HEALTH STATUS
- INSURANCE & ACCESS TO MEDICAL CARE
- CURRENT TOBACCO EXPOSURE
- PHYSICAL ACTIVITY
- OBESITY (height, weight, waist circ.)
- TRANSPORTATION MODE
- BODY IMAGE
- DIETARY HABITS
- MATURATION
- ADHD
- SENSATION SEEKING
- IRRITABILITY (BUSS-DURKEE)
- IMPULSIVITY/URGENCY
- HOSTILITY
- PERCEIVED STRESS (COHEN)
- DEPRESSION (CES-D)
- SCHOOL STRESS
- PERCEPTION JOB SECURITY
- QUALITY OF LIFE /OPTIMISM
- ALCOHOL USE (YRBS & BRFSS)
- REFUSAL SELF-EFFICACY
- TOBACCO USE (YRBS & BRFSS)
- PEER SMOKING (IRP)
- FREQUENT/IMPULSIVE SMOKING
- TOBACCO DEPENDENCE

Analysis

- Various statistical approaches will be used for hypotheses testing. These include linear regression, logistic regression, structural equation models, multilevel models, etc.

Personnel - AWI Study Teams

- At each site
  - Principle Investigator
  - Project coordinator (primary contact with Coordinating Center)
    - Oversight
    - Recruitment
  - Data manager
  - Data collectors
  - Data entry staff
  - Transportation team to data collection sites

Personnel & Training

- Study protocols with step-by-step instructions
- Measurement adaptation and development
- Data entry system
- Website for transfer of data
- Quality control system
- Training for the AWI teams (face to face and via WebEx (CGU will host any WebEx training meetings needed on its license)

Protection of Human Subjects

- **Institutional Review Board (IRB) and Federal wide Assurance Registration**
  - Each team will obtain IRB approval for the project
  - Review and approval of study protocols, documents of informed consent, questionnaires, etc.

3 Level Quality Control System

Quality Control Structure	Responsible Institute	Responsible Parties	Major Responsibility
Level-3	CGU team	Names	1. Design, training, and supervision of quality control of the project. 2. Evaluate the results of QC conducted by Level-1 and Level-2 units. 3. Report QC results and make recommendation on QC to the Steering Committee. 4. Provide feedback to the field data collection teams in a timely manner
Level-2	AWI city teams	Names	1. Examine adherence to protocol by the city CDC. 2. Evaluate the results of QC conducted by Level-1 unit. 3. Conduct re-test of selected survey items 4.Report QC results to the Level-3 unit.
Level-1	Each city should identify a local university or other source to serve in this role	Professors or designated students from local universities or other appropriate institute	1. Provide on-site inspection of adherence to protocol, including: data collection procedure, quality inspection of a sample of survey questionnaires and forms. 2. Report QC results to the Level2 and Level-3 units.

3 Level Quality Control System

Quality Control Structure	Responsible Institute	Responsible Parties	Major Responsibility
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Level-2	AWI city teams	Names	1. Examine adherence to protocol by the city CDC. 2. Evaluate the results of QC conducted by Level-1 unit. 3. Conduct re-test of selected survey items 4.Report QC results to the Level-3 unit.
Level-3	CGU team	Names	1. Design, training, and supervision of quality control of the project. 2. Evaluate the results of QC conducted by Level-1 and Level-2 units. 3. Report QC results and make recommendation on QC to the Steering Committee. 4. Provide feedback to the field data collection teams in a timely manner

Use of the data

- A central database will be set up at CGU for data coordination
- Each AWI institution will own its data and may publish from it
- A central database can be set up at CGU for data coordination
- AWI should develop an “acknowledgement” that should be used on all papers and presentations derived from our collective data for publicity purposes
- We should also develop a steering committee with representation across all sites to oversee publication and presentation development, etc.

Issues for consideration

- Budget
- Criteria for study cities
- One city or two?
- Finalize sub-sampling and stratification procedure
- Final selection of survey questionnaire items
- Possibility of an ongoing longitudinal survey ala the China Seven Cities Study
- Engagement of communities and local institutions (CDCs, CBOs, local government, etc.) for support and useful dissemination of data back to communities
- Training opportunities for students
- Quick turnover of pilot data to seed a variety of research, training, and community capacity building opportunities

Timeline

- Months 1-3 (June-August):
  - Identify study city at each AWI site
  - Assemble study team
  - Develop sub-group teams for particular activities (survey development, protocol writing, etc.)
  - Gather city and school data for sampling
  - Develop survey instruments (3 versions)
  - Submit IRB protocols for approval
  - Develop study protocol
  - Work out recruitment sites for adult samples

Timeline

- Months 4-6 (September – November)
  - Hold 2-day training for data collection and QC
  - Recruit schools
  - Finalize instruments Begin data collection by November
- Months 7-9 (December – February 2010)
  - Complete data collection
  - Clean and analyze data
  - Write up preliminary findings for grant proposals, reports
  - Develop a plan for major papers and conference presentations and general dissemination

Next steps

- Monthly WebEx meetings of Steering Committee starting second week in July
- Identify Working Groups
  - Sample stratification
  - Survey constructs and item translation
  - Website
  - Training
- Create project website
- Two-day training meeting in October