Validating a Chinese Version of the GAPS Questionnaire to Examine Health Risk Behaviors and Depressive Symptoms Among Undergraduate Students in Hong Kong
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Purpose: Unhealthy habits and risk behaviors like smoking, teenage pregnancy, drug and alcohol use in youth are associated with serious health problems such as psychological disorders, cardiac and respiratory diseases, cancer, complicated pregnancies and deliveries in later life. GAPS or the Guidelines for Adolescent Preventive Services, developed by the American Medical Association, is a validated and standardized screening tool for healthcare providers to assess adolescents for health risk behaviors. Research shows that anxiety and depression are common among teens in Hong Kong. In a recent study, university students in Hong Kong reported problems in the last five years with school issues (18.6%), depression (17.1%), body image (16.8%), and internet overuse (11.3%). However, their providers only infrequently asked or provided counseling about these issues during clinical encounters. The purpose of this study was to validate a Chinese version of the Guidelines for Adolescent Preventive Services (GAPS) questionnaire, to use it to examine the general health risk behaviors among undergraduate students at a public university in Hong Kong, and to assess for depressive symptoms and associated factors.

Methods: A valid translation process including forward translation, back translation and pretesting was performed to obtain the final Chinese version of the GAPS questionnaire. A cross-sectional study was then conducted using a convenience sample (n=400) of undergraduate students presenting to the university health service center. The anonymous self-administered Chinese version of the GAPS questionnaire was given to students waiting for medical care. Data analysis was performed using descriptive statistics, correlation test and stepwise logistic regression in SPSS.

Results: Of the 400 students who completed the questionnaires, 109 (27.3%) were males and 291 (72.8%) were females. Overall, participants reported a number of health risk behaviors including inadequate physical activity (73.2%), disordered eating (50.6%), and depressive symptoms (29.3%). In addition, respondents reported getting drunk in the past month (28.3%), engaging in sexually activity (13.3%), and having suicide attempts (7.3%). Using self-reported depressive symptoms as the outcome, multivariable regression results indicated that history of sexual or physical abuse (OR=3.66), lack of parental support (OR=2.86), ever been told that they have a learning problem (OR=2.62), and body image disturbance (OR=1.87) were strongly related to self-reported depressive symptoms among students.

Conclusions: The GAPS (Guidelines for Adolescent Preventive Services) is a useful tool for healthcare providers to assess adolescent health risk behaviors. The main self-reported risks in this study were inadequate physical activity, disordered eating and depression. Further interventions at the university setting could include using GAPS for routine student health visits and providing targeted counseling for
issues such as depression. Since the questionnaire has been validated in Chinese and shown to be feasible in clinical settings, it could be used in the future to help health professionals to identify specific risk behaviors and improve the quality of care for adolescents in Hong Kong and China.

Sources of Support: None

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Preliminary Longitudinal Findings From Multicultural Integrated Kidney Education Program (MIKE Program): Preventing Precursors to Kidney Disease in Low-income Minority Adolescents
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Purpose: Improving adolescent health is a public mandate that must be met by innovative and comprehensive new programs. Multicultural Integrated Kidney Education Program (MIKE Program) is a unique upstream project-based service learning program designed to prevent precursors to chronic kidney disease (CKD) such as obesity, high blood pressure, and poor nutrition (National Kidney Foundation, 2012) in low-income minority youth. Founded in Oregon in 2003, MIKE Program utilizes near peer mentors to empower youth to be health leaders—ambassadors for healthy kidneys—through education, mentorship and community outreach within diverse communities (www.mikeprogram.org, 2013). Goals of the program include increased health self-efficacy, kidney knowledge, and improved healthy lifestyle behaviors, such as nutrition and exercise for youth at risk for diabetes and CKD, as these factors are important in programs for positive adolescent health outcomes (Collins et al., 2002).

Methods: The sample included 59 youth (50.8% males) who completed MIKE Program 2 to 3 years prior during freshman year in high school. Youth were predominantly of African American and Latino descent and 20% had mothers with less than a high school education. Average BMI was 24.66 (sd=.52) and ranged from 16.5 to 44.6.

Results: The majority of youth rated MIKE program as somewhat to very effective (83%) and rated their mentors similarly (86.5%). Perceived effectiveness was significantly correlated with program outcomes. Higher ratings of MIKE Program effectiveness was significantly correlated with well-being (r=.32, p=.01; WHO-5 Well-being Index) and greater outreach (r=.32, p=.01). Youth who rated their mentors more highly had marginally significant higher levels of kidney knowledge (r=.25, p=.06), and reported drinking more water (r=.35, p=.01) as well as a marginal effect for greater exercise (r=.22, p=.09) when retrospecting about their time in the program. Health self-efficacy (SRAHP Scale; Harrison, Beebe, & Park, 2001), which had shown change from pre- to post-testing in the freshman year, did not differ among participants at follow-up. Further, BMI was unrelated to program or mentor effectiveness. When comparing this sample to national statistics from the 2011 CDC Youth Risk Behavior Surveillance Study (CDC, 2011), this group appeared to be trending toward healthier behaviors as a lower proportion of the youth reported not eating breakfast at least once a week (8.5% versus 13.8%) and not getting 60 minutes of physical activity at least once a week (5.1% versus 13.1%) as compared to high school
students nationally. Eating breakfast was the only variable significantly related to decreased BMI (r=-.38, p=.01; n=51).

**Conclusions:** These results suggest youth who participated in MIKE Program found it to be effective overall. Those who highly rated the program and mentors experienced more positive well-being several years later, retained greater knowledge, and made more initial health changes. Longitudinal follow-up data from MIKE Program participants indicates areas of success in improving well-being and healthy behaviors among at risk youth and underscores the importance of mentoring (Dubois & Silverthorn, 2005) in adolescent health promotion. While these are important preliminary findings, further work is needed to track individual outcomes prior to and after MIKE Program at consistent longitudinal intervals.

**Sources of Support:** Citations embedded.

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**Parental Attitudes Towards Human Papillomavirus (HPV) Vaccination of Boys: Quantitative and Qualitative Results to Guide Development of Effective HPV Vaccine Interventions**

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**Purpose:** Incidences of both human papillomavirus (HPV) infection and HPV-related cancers are on the rise in men. However, vaccine uptake is low. Parental consent is required prior to receiving the HPV vaccine. This study examined parental perceptions of the HPV vaccine for boys through survey methods (N=422) and focus groups (N=45).

**Methods:** This cross-sectional study used a mixed methods approach and was conducted in cooperation with communities in three counties with high rates of cervical cancer in the southeastern United States. Data were collected from January 2010 until August 2012. The study was approved by the affiliated university’s Institutional Review Board (IRB) and school officials, parents, and community leaders. A convenience sample of 467 parents with male children was recruited using an IRB approved flyer and data collection occurred in two stages: 1) quantitative survey data collection using the Parental HPV survey (Cronbach’s Alpha 0.96), and 2) qualitative focus groups and interviews.

**Results:** Chi square analysis revealed no significant differences between parents who intended to vaccinate their sons and those who did not. Logistic regression was used and to adjust for multicollinearity, forward likelihood ratio variable selection was used within each block (block 1: demographic covariates, block 2: four HPV scales) (p<0.10 for entry, p>0.20 for removal) to select the final logistic regression model identifying predictors of intent to vaccinate. Mothers were 1.68 times more likely than fathers to vaccinate their sons, and African Americans were 1.78 times more likely than Caucasians to vaccinate their sons. Content analysis of transcribed focus groups and interviews provided four emergent themes: Lack of Knowledge about HPV, Unaware that HPV vaccine was for boys, No
Correlation between Cancer and Persistent HPV Infection, and Parents did not communicate about HPV through their normative social networks.

**Conclusions:** Awareness of the new HPV immunization guidelines from the Advisory Committee on Immunization Practice (ACIP) at the CDC, for boys, and the increasing rates of mouth, head, and neck cancers secondary to HPV infection are essential to decreasing HPV related cancers. It is important to view parents as members of a community with social networks that are entwined with one another and embedded within their unique cultural, geographic and socioeconomic milieu. However, it is a mistake to assume that parents utilize these social networks for communication about HPV vaccination. In the future, to increase vaccination rates for boys, health care providers must utilize strategies to increase parents’ knowledge of HPV vaccination, the connection between HPV infection and persistent infection and HPV related cancers. In addition, fathers should also be included in discussions about vaccinating boys against HPV infection, since this exploratory analysis found that only a small percentage of the fathers had vaccinated their son. While the findings of the study imply that mothers intend to vaccinate their sons, a father or father figure as the male head of the household can also promote HPV vaccination. Points of intervention development include: Knowledge about transmission, the connection between persistent HPV infection/cancer, and HPV vaccination recommendations for both boys and girls.

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**Perceptions of Breast Cancer Risk, Psychological Adjustment and Behaviors in Adolescent Girls at High-risk and Population-risk for Breast Cancer**

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**Purpose:** The majority of adolescent girls in breast cancer (BC) families learn of familial and genetic risks for BC at a young age. Additionally, research suggests early-life events (e.g. exposures, biologic changes) might modify risks for adult breast cancer and many health and risk behaviors begin in, or become established in adolescence 12-15,16. Yet, how an awareness of breast cancer risk impacts adolescent girls’ psychosocial adjustment and health behaviors remains unknown. The purpose of this study is to evaluate how perceptions of breast cancer risk, psychosocial function and preventive health and risk behaviors differ among girls from high-risk and population-risk families and factors that mediate and moderate these outcomes.

**Methods:** 11-19 YO girls at high-risk (HR) or population-risk (PR) for breast cancer completed self-administered surveys informed by the Self-Regulation Theory of Health Behavior. Surveys evaluated knowledge and perceptions of breast cancer risk, general psychosocial functioning, breast cancer
specific stress-response and performance of health and risk behaviors. For hypothesis testing, we used simple linear and logistic regressions. To account for correlation of responses within families, we used robust (cluster-corrected) standard errors or Generalized Estimating Equations.

**Results:** The mean age of girls (n=136) was 15.6 (SD 2.4) years old and did not differ significantly by risk group. 47 PR and 89 HR girls completed surveys. 30% of HR girls have a mother with BC. 67% of HR girls reported self-perceived risk for adult breast cancer to be higher than other girls their age, which was significantly higher than PR girls (p=<0.01). Perceived risk was associated with older age (p=0.01) and an increasing number of first and second-degree relatives with BC (p=0.002), but there was not evidence that the relationship of perceived risk with age varied by risk status (p=0.740 for interaction terms). The majority of girls (both HR and PR) reported that there are things women (84%) and girls their age (83%) can do to prevent BC. Perceived controllability did not differ significantly by age or risk. HR girls had greater general anxiety (p=0.07), but not depression than PR girls. HR girls more frequently reported tobacco use than PR girls (p=0.05). HR girls also reported greater alcohol use, more frequent performance of self-breast exams and less frequent physical activity than PR girls, although these differences were not significant.

**Conclusions:** Girls from breast cancer families are more likely to perceive themselves to be at increased risk, may experience more general anxiety, and engage more frequently in risk behaviors. The majority of girls perceive breast cancer to be preventable for adult women and themselves, suggesting a “teachable moment” among adolescents that might be sustainable across the lifespan. Further research evaluating knowledge and perceptions of breast cancer risk throughout adolescent development and differences among subgroups could inform strategies to optimize adolescent psychosocial responses to hereditary cancer risk and health promoting behaviors among adolescent girls.

**Sources of Support:** The Basser Research Center for BRCA, in the Abramson Cancer Center at the University of Pennsylvania; The Fox Chase Cancer Center Keystone Program in Personalized Risk and Prevention.
Methods: A sample of 19 female (58% Hispanic, 26% Black) participants, ages 17-24 years, completed an anonymous survey at two piercing studios in the South Eastern United States. Questions included demographic characteristics, decision and motivation factors, and high-risk behavior questions (sexual behavior and drug use). The data analysis was conducted using SPSS 16.

Results: Descriptive statistics revealed that 74% of the sample reported being at the studio for a nipple piercing, 11% genital and 16% other type of piercing. 47% reported taking 3 days or less to make the decision to be pierced. 94% reported having other piercings (Mean 2.53 # of piercings), 68% reported having tattoos (3.88 Mean # of tattoos). Of the motivation choices, 79% selected “fashion or art” followed by “daring or thrilling” (47%) and “as a personal statement” (42%). Only five of 19 subjects (26%) listed ‘sexual enhancement’ and 3 (16%) listed “increase in sexual desirability” as their reason for the piercing. With regard to risk behaviors, of participants who reported being sexually active (90%), (a) 82% reported having been with 5 or more sexual partners; (b) 61% reported not using condoms on a regular basis and (c) 15% have tested positive for sexually transmitted infections (STI). Furthermore, 42% reported having engaged in binge drinking at some point in their lives. 47% of the sample reported smoking marijuana during their lifetime (66% on a weekly and/or daily basis). Additionally, 10% reported using cocaine and 15% club drugs during their lifetime as well.

Conclusions: Given the recent increase in popularity with intimate piercings, this study provides important information for gaining a better understanding of factors associated with individuals who obtain this type of piercing. The findings reveal that the main motivations for this sample were “as fashion or art” and “daring or thrilling”, as compared to the most common motivations typically reported by adults which are “to enhance sexual pleasure” and “to express themselves.” Additionally, the findings also identify a preponderance of high-risk behaviors (elevated number of sexual partners and the absence of barrier protection during intercourse). This study highlights the critical need for targeted intervention programs aimed at reducing sexual risk behavior, as well as, illicit drug use with this high-risk population.

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