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EDITOR’S PERSPECTIVE

Collaborative work: Seizing the opportunity to showcase nurses’ strengths and skills
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Collaborative work is inherent in professional nursing practice. Whether collaboration is between and among fellow nurses, among other health care professionals, or with other local or global organizations and partnerships, nurses are always uniquely positioned to play a significant role. Interprofessional communication and collaboration is stipulated as one of the core essentials in the baccalaureate and advanced practice education of nurses (AACN, 2008; AACN, 2006). Collaboration is even clearly implied in one of the recommendations of The Future of Nursing Report (IOM, 2010) that “nurses should be full partners, with physicians and other health professionals, in redesigning health care.”

Petri (2010) dissected interdisciplinary collaboration in a concept analysis using Rodgers’ framework to identify its attributes, antecedents, and consequences (Rodgers, 2000). Attributes are those features and characteristics that describe the actual and real definition of collaboration. Petri (2010, p. 75) found three attributes of collaboration from her analysis of the literature – problem-focused process, sharing, and working together. Collaboration is described to be a process that is evolving, changing, and emerging in response to a critical situation or problem that is patient or health-care related. There is sharing of objectives, responsibility, decision-making, and power. There is clearly equal involvement among all the participants from other disciplines, with shared goals, visions, and intentions. Working together implies cooperation among each discipline and recognition of each other’s unique contribution to the common goal. Without the other’s participation, achieving the desired outcome will not be possible.

Antecedents are characteristics and conditions that should first be at hand for collaboration to exist. Petri (2010) found many antecedents for collaboration from her review of the literature, such as interprofessional education, role awareness, interpersonal relationship skills, deliberate action, and support (pp. 76-78). Interprofessional education starts early in the acculturation stages to the discipline. There is also role awareness and understanding of each other’s unique roles and contributions into achieving desired patient care outcomes. The component aspects of interpersonal relationship skills refer to mutual respect and trust, and effective communication. A good working relationship is tethered on being able to understand, believe, and value each other, and the communication between the disciplines has to also be respectable, transparent, readily understood and straightforward. Deliberate action is an obvious requirement where all involved disciplines partake in the concerted plan to achieve the intended goals. Finally, support that is on the individual, organizational or administrative levels is another antecedent. Individual participants have to be committed and supportive of the goals of the collaboration, with guidance and backing from the organizational and administrative structures.

Finally, consequences are those events or outcomes that result from the occurrence of collaboration. These consequences are evident in the patient, the organization, and the healthcare professional. The recipients of interprofessional collaboration are patients, rightfully so as they should always be in the heart of all that we do as nurses. As quality patient care should always be the focal point of the organization, everyone involved in the care of the patient should take ownership and accountability for the process and be proud of its outcomes.

Nurses are inherent leaders and assume this role in many collaborative projects. Collaborations always present an opportune moment for nurses to demonstrate our leadership and collaborative skills to help achieve the team’s common good. Regardless of the type of collaboration, whether patient care-related, administrative and management, client and staff satisfaction, education or research, nurses play a unique, relevant, and pivotal role in the successful achievement of the project goals.
There are many examples of these collaborations in the literature. Kenny, Richard, Ceniceros and Blaize (2010) described a project among nurses in military centers in the northeast section of the United States on developing and implementing clinical guidelines based on the best evidence. The project might be among nurses, but it involved a large number who collaborated on this high impact and high volume patient care initiative. There were many barriers encountered during the process, including increased patient acuity and census, staffing shortage and reassignments, and limited time (Kenny et al., 2010, p. 8). Overall, the project was considered a success with nurses from the involved medical centers who were able to “develop six collective evidence-based guidelines and their nursing practice councils have addressed problem-focused practice triggers and used evidence to change processes related to blood transfusions and medication administration” (p. 9). Clavelle and Bramwell (2013) discussed an integrative model for professional peer review that can be used for all health care providers, including advanced practice nurses. Currently, peer review practices, tools and models are described in the literature as separate for physicians and nurses. It only makes sense that an integrated model be developed that can be used across various types of providers. Peer reviews examine the quality of care provided to patients and identify areas that can be improved. Federal, state and regulatory agencies also mandate peer reviews to monitor provider performance and outcomes and offer oversight. Developing an integrative peer-review model is an example of partnering with physicians to remove barriers that prevent nurses from practicing to the full extent of their education and training (p. 318). This peer-review model is relevant and necessary, and will help ensure that care management will be acceptable and appropriate, of the best quality, uphold patient safety standards, and consistent with evidence. Matthews and Brown (2013) described the Collaborative Health Management Model (CHMM) aimed at enhancing the cooperation and teamwork between nurse practitioners and physicians to deliver optimal care to patients with complex chronic conditions. For instance, there is evidence that strong functioning and collaborating teams show better outcomes when managing diabetes (Krugerr et al., 2012 in Matthews & Brown, 2013). Team work and strong cooperation among members also improve the management of chronic diseases, job satisfaction for members of the health team, and patient satisfaction (Pullon et al., 2011 and Proudfoot et al., 2007 in Matthews & Brown, 2013).

Collaborations are never simple. It requires a lot of time, preparation, and resources. Even the best thought-out initiatives can be faced with many challenges. Yet, collaborations are preferred as it maximizes on the value-added and unique contributions of each member of the cooperation. It brings out the best of all those involved and team work yields better outcomes. Nurses are known to successfully multitask, using our nursing and leadership skills, and tempering these with our wisdom and experience in dealing with complex patient care scenarios and management intricacies. Evidence is strong that collaborations are favored and are perfect opportunities for nurses to demonstrate our skill in leading fellow nurses and other professional members of patient care teams into achieving our team goals. These situations also present optimal occasions for nurses to demonstrate our professional capabilities to the full extent of our education and training, facilitating one of the recommendations of *The Future of Nursing Report* into place.

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In post-World War II Philippines, the word “collaborators” referred to Filipinos who favored and worked side-by-side with the occupying militias. “Collaborators” reported their own countrymen, particularly the “guerilla” troops to the enemies. More than five decades later, the term collaboration is viewed more in a positive manner. Shared goals, teamwork and cooperation, inter and multidisciplinary practice, and professional collegiality are often viewed as descriptors of collaboration. These concepts share some of the elemental attributes of collaboration.

My platform as the 17th President of the Philippine Nurses Association of America (PNAA), Inc. includes a significant degree of collaborative work as adopted in the PNAA Social Construct. This entails empowering collaborations and sustaining healthy communities that require social leadership within a decentralized and egalitarian group. Thus far, the collaborations that have been developing and nurturing during the first year of my term of office extend beyond collaboration with other health care disciplines:

Governmental
a. With the Commission on Filipinos Overseas (CFO) during the 1st Global Summit for Filipino Nurses deliberating and addressing issues affecting nurses around the world (January 2014) held at the Manila Hotel, Philippines, culminating with the signing of a Memorandum of Agreement among all conveners: PNAA, CFO, PNA Inc. (Philippine Nurses Association, Inc.), ADCPN (Association of Deans of Philippine Colleges of Nursing), and ANSAP (Association of Nursing Service Administrators of the Philippines).

b. With the Philippine Embassy in the United States in events that affect Filipino-American citizens and permanent residents, i.e., the accidental death of five (5) Filipino nurses in a limousine fire in CA and the unlawful death of a new Filipino migrant nurse in TN.

c. With the Equal Employment Opportunity Commission (EEOC) regarding the “English-only Rule” in the workplace.

d. With the Office of the Philippine Department of Health in providing input, subject matter experts, and instructors in the development and implementation of the nurse anesthesia specialty program to improve staffing for surgical cases in provincial hospitals.

e. With a Barangay Health Center in Bacolod and possibly the Autonomous Region of Muslim Mindanao (ARMM) to improve health outcomes in maternal and child health.

f. With the Philippine Regulatory Commission Board of Nursing on the required validation of Philippine RN license for US RN license application by endorsement or reciprocity for foreign graduate nurses.

g. With the Philippine Professional Regulation Commission (PRC) in facilitating and removing the burdensome requirements for Foreign Surgical and Medical Missions to the Philippines

International Non-Governmental, Regulatory, Media, & Humanitarian Agencies
a. With the Alliance for Ethical International Recruitment Practices with developing and monitoring the Code of Conduct and the establishment and review of educational modules for health care professionals seeking employment in the US.

b. With Project HOPE in the deployment of disaster nurse-volunteers for the Haiyan Typhoon Relief in the Philippines and potentially the Disaster Deployment Program patterned after the US Military Reserve.

c. With the United Nations International Children’s Emergency Fund (UNICEF) in another Haiyan Typhoon Relief Project to help protect displaced and orphaned children from malnutrition and human trafficking, as well as prevent water-borne diseases through proper sanitation.

d. With the Migrant Heritage Commission’s work on Temporary Protected Status (TPS), allowing Fili-
pino immigrants (nurses who entered legally) to work, possibly travel, and stay in the country and provide remittances to support Haiyan relief efforts.

e. With the California Board of Nursing and the Philippine Commission on Higher Education (CHED) in resolving the requirement for concurrency of clinical experience and theoretical instruction of nursing graduates from the Philippines as a requirement for RN licensure application in the State of California.

f. With PBS Newshour in a documentary exposé of labor trafficking for RN employment in the US.

The key element in these collaborations is building consensus to fulfill our corporate social responsibility. Finally, collaboration is both a process and an outcome in which shared interests or conflicts that cannot be addressed by any single entity are addressed by key stakeholders. The collaborative process involves a synthesis of different perspectives in an effort to better understand complex issues. The desired outcome of a collaborative effort is the development of integrative solutions that go beyond an individual vision to a productive resolution that could not be accomplished by any single person or organization.

There are more projects that can be achieved collaboratively to enhance the worklife of Filipino and Filipino-American nurses, as well as the health and well-being of the communities we serve. Yes, we will continue to make strides along these lines to continue to promote PNAA’s efforts towards local and global collaborations. We will get there.

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Assault and Violence Prevention and Management in In-Patient Psychiatric Units
Jocelyn C. Perez

Abstract

Introduction: There is a growing national concern of violence in inpatient psychiatry settings compromising patient and staff safety. This quality improvement project identifies evidence, practice, and consensus among different clinical providers, managers, and external experts. The goal is to identify approaches in clinical practice that create a more proactive treatment environment where staff will recognize early signs and triggers of patient’s agitation and intervene appropriately. This project encompasses prominent clinical guidelines reflective of incidents, such as assault and other violence-related activities. This paper will describe a general, sequenced, set of activities and skills that capture common elements of care and management with respect to assault and violence risks.

Objective: The purpose of this article is three fold: (1) to describe and promote best practices with regards to violence risk assessment; (2) to explain specific clinical practices that create a treatment environment that is more proactive; and (3) to share data on some key outcome indicators such as use of intramuscular injections, assaults, restraint & seclusion use.

Method: Violence by patients against other patients and staff is a common and concerning challenge for psychiatric inpatient care. At Metropolitan Hospital Center, one of the acute care facilities of Health and Hospitals Corporation (HHC) in New York City, the incidents of assault and violence comprise a big percentage of all the incidents reported to the New York State Office of Mental Health (SOMH). It is a priority concern not only because of its relative frequency, but because of the scope and degree of interference with the course of treatment, care, and safety of all patients, as well as staff safety, performance, and work satisfaction.

Conclusion: Using a set of clinical practice guidelines in acute psychiatric units substantially reduced the incidence of dangerous and compromising events of patient aggression and violence, decreasing the need for more restrictive and invasive measures such as restraints and intramuscular medications. The results of the project are encouraging because the recommended interventions are simple to implement, inexpensive, and easy to integrate into daily practice.

Keywords: Violence prevention, crisis management, assaults, aggression, practice guidelines
**Introduction**

Patient assaults are the most commonly reported behavioral health incident category in most inpatient psychiatric settings and in large systems of care. It is a priority concern not only for its relative frequency, but for the scope and extent of its effects on the course of treatment, care, and safety of all patients, as well as staff safety, performance and work satisfaction. There is a dearth of published data on injuries resulting from patient violence, although the 2005 Bureau of Labor and Statistics report include some studies that estimate injuries of up to 7% among registered nurses working on inpatient psychiatric units. For purposes of this study, the term “assaults” as used at Metropolitan Hospital Center (MHC) in New York City, is defined by the New York State Office of Mental Health (SOMH) as “physical attack using force or violence in which a patient is either a victim or aggressor”. Metropolitan Hospital Center is one of the healthcare facilities of NY City Health & Hospital Corporation (HHC), the largest public healthcare system in the United States serving 1.3 million patients, including more than 475,000 uninsured New York City residents. MHC uses the incidents database of the New York Incident Management Reporting System (NIMRS). All assault incidents are recorded in this database as reported from all the hospitals that have licensed SOMH facilities across New York State.

This current article describes core practice guidelines obtained from evidence-based practices (EBP), literature reviews, the engagement of all other HHC providers, managers, and external experts, and the impact of the use of these guidelines on a 150-bed capacity psychiatric inpatient department. The core practice guidelines were established in Fall 2009 and Metropolitan Hospital Center was one of the early adopters of these practice guidelines.

The practice guidelines include screening and assessment for assault and violence risks, the development of a patient care plan relevant to aggression risk management, ongoing reassessment of status and clinical responses, availability of an acute response process in the event of an acute episode of severe agitation or violence, and training approaches targeted towards these interventions. These include the use of the least intrusive and restrictive psychiatric approaches and incident de-escalation and preventive strategies. The project also identifies less commonly developed but promising approaches. Examples are those proactive practices that include the use of multidisciplinary communication focusing on behaviors that signal alerts of impending violence inclusive in the REACT behavior checklist. R stands for refusals and demands; E refers to evasions and deviations; A covers activation, agitation and intrusion; C encompasses conflict; and T entails testing limits. There is also focus on other behavioral approaches such as the use of sensory modulation techniques, supervision, and the old time role-modeling strategies. Our particular experience is demonstrated in data that show sustained decrease in the number of assaults, continuous reduction in the use of restraints, and a significant decrease in the use of intramuscular medications when we use these clinical practice guidelines. Figure 1 illustrates the main categories of patient care management that is critical to violence prevention and intervention efforts.

![Figure 1: Categories of Patient Care Management Relative to Violence Prevention](image-url)
Method

The core practice guidelines describe a general, sequenced set of activities and skills that capture common elements of care management with respect to assault and violence risk. The use of all core elements of practice diagrammed in Figure 1 in a facility such as Metropolitan Hospital Center also impacted two other major components of care other than decreasing the incidence of assaults. Other aspects of care affected by the adoption of these guidelines are the use of intramuscular (IM) injections and restraints and seclusion modalities.

A. Screening for and Assessment of Risk for Violence

The most common risk factor for violence is prior violence (Hughes, 1994). The value of commonly identified risk factors as the basis for screening, however, is limited due to low specificity. There are several scales and tools designed to enhance, structure and prompt clinician evaluation. Some of these tools and scales include the Modified Overt Aggression Scale (MOAS), Overt Aggression Scale (OAS) and Broset Violence Checklist. Metropolitan Hospital Center uses the Broset Violence Checklist, a tool that assesses confusion, irritability, boisterousness, verbal threats, and attacks on objects as either present or absent. It is hypothesized that an individual displaying two or more of these behaviors is more likely to be violent in the next 24-hour period.

B. Treatment Planning (Assessment and Reassessment)

Treatment planning is a fluid and patient status-driven process that specifies team members’ tasks and tracks the patient’s progress on specific goals that continuously informs the need for reassessment of the plan of care. This process evaluates the success of interventions such as behavioral approaches, use of medications, sensory modulation, patient compliance and input, level of observation, etc.

C. Milieu Assessment

Some features of psychiatric unit environments can increase the risk of violence and aggression. There is little evidence to support this observation but an assessment of the following areas is very important – patient-space concentration in relation to patients’ movement and role in the “traffic” on the unit. Bluebird (2004) cites that patients’ perception of staff respect, engagement, confidence, and stability, and the use of an individual crisis plan that has worked for the patient and shared with staff are some of the elements that increase patient comfort. These can help to minimize conflicts between patients to patients and patients to staff. Huckshorn (2008) strongly recommends using the 6 core strategies in reducing the use of restraints and seclusion. These include workforce development and use of tools to reduce restraints and seclusion, such as integrating an individual crisis plan and debriefing techniques. These three strategies require evaluation of factors that contribute to escalation of behavior such as manner and content of communication, strained relationships, visitors who can set them off, a particular time of the day, feeling of losing control, etc. These elements are all part of the patients’ milieu.

D. Proactive Milieu Practices

There is substantial evidence from unit-observation studies that aggressive events that require staff attention or cause injury are preceded by “lower level” actions or changes in behavior. One study found a five-fold increased likelihood that patients who show less serious aggressive incidents will be the ones to also generate the worst and most serious episodes (Carr et al., 2008). Another study found threatening and intrusive behaviors by assailant and victim preceded 60% of assaults and 10%
of control periods.

A prototype tool (REACT) that lists elements of patient characteristics deemed to be precursors of violent behavior was used in a pilot unit at Metropolitan Hospital Center. The “REACT” tool (R- Refusals and Demands; E- Evasive; A-Agitation, Activation; C- Conflicts with staff or other patients; and T- Testing limits) was first used in a 25-bed unit. Staff from that unit provided positive feedback on its use, particularly in terms of the importance of alerting them consistently to key patient issues at an early point in time before the incident escalates. REACT is now a regular nursing hand-off communication tool in all the psychiatric units.

Additionally, community meetings in patient care units have been integrated as a forum to address regular, explicit, and continuing manifestations of actual and potential violence, as well as patients and staff perceptions, expectations and attitudes toward violence (Beech, Parry, & Valiani, 2000; Lanza, Kazis, Lee, and Ericsson, 2003).

E. Use of Response or Crisis Management & Prevention Teams

Most inpatient services use a designated “response team” to bring together additional staff trained in crisis management and prevention strategies. These teams are better structured with membership being clearly defined and its role geared more towards consultancy, education and training, and competency-building of staff in preventing and de-escalating incidents, rather than primarily serving as acute event responders. Despite widespread use, two Cochrane reviews in the past decade found no single quality study assessing the relative efficacy of containment strategies (e.g., seclusion, restraints) in diminishing the overall incidence of violence (Muralidharan & Fenton, 2006; Sailas & Fenton, 2000).

F. Staff Training

Training of all staff on aggression management and prevention techniques has been shown to be successful in terms of developing their competencies and desired skills, knowledge, and perceived self-efficacy (Calabro, Mackey, & Williams, 2002; Ilkiw-Lavalle, Grenyer, & Graham, 2002). However, there is little evidence that increasing one’s knowledge translates to changing one’s behavior or that common training programs result in reduction of violence (Johnson 2010; Bowers, Nijman, Allan, Simpson, Warren, and Turner 2006).

At Metropolitan Hospital Center, attention to annual staff training, supervision methods during actual crisis situations via debriefing and use of supplementary strategies, and ongoing best-practice reinforcements have demonstrated promise in terms of changing some staff’s behavior and attitude while interacting with patients.

There is also an annual education program on Preventing and Managing Crisis Situations (PMCS) attended by all staff conducted by a nurse educator specifically trained by the New York State Office of Mental Health.

G. Use of Data to Celebrate Success

The use of data to continuously inform practice is an important factor in these practice protocols and for their successful use. Data provide effective feedback to practitioners in terms of the effectiveness of guideline recommendations.
Periodic audits of databases related to restraint and seclusion, use of intramuscular (IM) injections, number of crisis intervention calls, and the number of assaults and fights serve as good indicators to determine success in the adoption of all these strategies.

Results
The current thrust toward EBP requires the use of systematic evaluations of indicator outcomes to further guide practice. Metropolitan Hospital Center used patient and staff-related variables as outcome measures.

1. Use of Intramuscular (IM) Injections

Other more proactive approaches, rather than the use of invasive procedures such as IM injections, are preferred considerations when dealing with escalating and actual violent and assaultive behaviors. Tracking and trending the use of IM injections is therefore necessary. Figure 2 shows a downward trend in the use of IM medications at Metropolitan Hospital Center by 50% from preliminary data in 2009.

![Figure 2: Metropolitan Hospital Center’s Use of IM Injections in Comparison to Corporate-Wide Data (Health & Hospital Corporation) (2010)](image)

2. Restraint Use

All the staff of the inpatient behavioral units of MHC have been extensively trained in crisis management techniques since the first quarter of 2009 in order to reduce restraints and seclusion use. Sensory modulation and the creation of the Behavioral Emergency Support Team (BEST Team), a crisis response group modeled along the lines of Rapid Response Teams, have now been introduced and used in non-behavioral care areas. These are used as a means to provide support to patients and staff “when things don’t look good.” What is better with this is the incorporation of the patient’s identified crisis plan which often alleviates periods of aggression and prevents violence. These strategies decreased the use of uniformed security staff or hospital police and increased the reliance on
better trained clinical staff. It has fostered teamwork among all professional disciplines in terms of their responses to patients’ unmet needs that escalate to crisis situations. The effect of these other strategies on seclusion and restraint use in MHC is demonstrated in the data shown in Figure 3.

![Restraint Usage 2010](image)

**Figure 3: Metropolitan Hospital Center’s Seclusion & Restraint Use in Comparison to Corporate-Wide Data (Health & Hospital Corporation) (2010)**

### 3. Decrease in the Number of Assaults

Hunter & Love (1996) reviewed incidents of violence peaking at meal times and when staff set limits for rule-breaking patients. With Preventing and Managing Crisis Situation (PMCS) training provided to all nursing staff by the State Office of Mental Health, the unit environment is focused more on promoting pro-social behavior and proactive approaches by constant monitoring and analysis of assaultive and violent behaviors. Staff is more aware that violence is more consistently associated to a patient’s recent and past history of violence.

The Broset Violence Checklist is used in identifying early precursors of violence. Patient behaviors are assessed and discussed in shift to shift reports for appropriate monitoring and intervention. The number of assaults has decreased by 33% following adoption of these guidelines. Figure 4 illustrates this decrease in the number of assaults in the units.
Conclusion

Using a set of EBP guidelines in acute psychiatric units substantially reduced severe events of patient aggression and violence, decreasing the need for use of more restrictive measures such as restraints and the use of intramuscular medications. The results are remarkably encouraging, particularly in the light of simple, inexpensive, and easy interventions that can readily be integrated into daily practice. The interventions described in this article - from risk assessment, preventive measures, up to the creation of specific plans to prevent aggression - are simple strategies that influence complex staff-patient interaction and patients’ positive response to the interventions.

Findings from this study do not specify the effectiveness of one particular intervention. It is, however, important that data be used in the future to identify which strategy is the most effective.

Despite the significance of every approach, there is highly imperfect evidence as to the best kind of strategies that work to prevent and manage assaultive and violent behavior by psychiatric inpatients. It is worthwhile to conduct future studies to identify the best intervention in the prevention and management of assault and other violent episodes.

References


Planned Initiative to Promote Maternal and Child Health in the Philippines
Luz T. Llasos, Victoria B. Navarro, and Dula F. Pacquiao

Abstract

Introduction: The Philippines has persistently high maternal and infant mortality rates and a potential not to meet its Millennium Goal targets in 2015. While infant mortality rate has improved, maternal mortality ratio has increased since 2009 particularly among the most rural and poorest populations.

Objective: It is the goal to establish a Philippine Nurses Association of America (PNAA)-sponsored global partnership to promote access to quality reproductive health services by poor and underserved communities in the Philippines through a grant-funded project, Barangay Health Center led by registered nurse-midwives (RN-Midwives).

Implementation: A local health clinic serving three Barangay units in Negros will be the site for this project and operated through the collaboration between a local nursing school and hospital, barangay leaders and multidisciplinary health care professionals recruited from local communities. PNAA members who are RN-Midwives with leadership and practice expertise will provide training and mentorship for participating nursing students, RNs, midwives and hilots (folk medicine practitioners) in providing quality reproductive health services to the local community.

Evaluation: Outcomes of the project will be evaluated, using such indices as numbers of women and children using the service, annual fertility rate, and maternal and infant mortality rates.

Keywords: Maternal and child health, reproductive health services, barangay health center

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Introduction

Approximately 350,000 women die in pregnancy or childbirth annually throughout the world, equivalent to almost 1,000 a day; eight million more suffer serious illnesses and lifelong disabilities from birthing complications. Every year, up to 2 million newborns die within the first 24 hours of birth, 2.6 million from stillbirths with 45% of deaths occurring during labor and delivery. Millions more suffer birth traumas that impair development and future productivity (UNFPA, 2011). Maternal and child mortality reflect the health of a nation and a government’s commitment to the health of its citizens. These are indicators of the degree of poverty and social injustice that significantly impact the poor and resource-poor nations.

In 2000, the United Nations (UN) established the Eight Millennium Development Goals (MDGs) as a blueprint for global partnerships to reduce extreme poverty with targeted improvements by 2015. The eight goals supported by 189 UN member states and at least 23 international organizations are:

1. Eradicate extreme poverty and hunger
2. A universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality rates
5. Improve maternal health
6. Combat HIV/AIDS, malaria, and other diseases
7. Ensure environmental sustainability
8. Develop a global partnership for development (UNDP, 2000)

The fifth MDG aims to improve maternal health by reducing maternal mortality ratio and increasing women’s access to reproductive health services, as evidenced by the percentage of deliveries attended by a skilled birth attendant (WHO, 2012). This goal aims to reduce the maternal mortality ratio (MMR) or the number of maternal deaths per 100,000 live births by three quarters in 2015 (Sauvarin, 2006).

Problem Statement

This paper outlines the establishment of a Philippine Nurses Association of America (PNAA)-sponsored global partnership to promote access to quality reproductive health services by poor and underserved communities in the Philippines through a grant-funded project, Barangay Health Center led by registered nurse-midwives (RN-Midwives). The project will address the following question:

Does the Barangay Health Center led by RN-midwives reduce maternal and child morbidity and mortality in the three local communities it serves?

Review of Literature

Maternal and child health in the Philippines

The Philippines is the 39th most densely populated country in the world, with a density of over 335 per square kilometer. In 2010, its population totaled 93.34 million with a growth rate of 1.9% (Philippine Census, 2010; CIA, 2013). Improving maternal and child health are viewed as pathways to combat poverty. Maternal health is considered an important indicator of the government’s performance in improving the health of its citizens. The nation aims to reduce its maternal mortality rate (MMR) to 52/100,000 live births by 2015 which increased from 162 in 2009 to 221/100,000 live births in 2011. The highest MMR is observed among the poorest quintile and in the Autonomous Region of Muslim Mindanao (ARMM). In the ARMM, MMR is as high as 320/100,000 live births and only 24% are attended by skilled birth attendants (nurses, midwives, or physicians) compared to 90% in Manila (NSO Philippines and ICR Macro, 2009). This high MMR is attributed to structural barriers in service delivery and access to repro-
Productive care services that are appropriate. Thirty-three percent (2 million) of the total six million women in the country are considered poor (Alave, 2012).

The country’s infant mortality target is 19/1000 live births by 2015 which declined from 32 in 2009 to 30/1,000 live births in 2011 (NSO Philippines and ICR Macro, 2009). The progress has been attributed to sustained immunization of babies and school children (Alave, 2012). Neonatal mortality is critically related to maternal health as many early neonatal deaths are related to care during delivery. Six hundred and forty seven thousand neonatal deaths are reported each year in the 12 countries comprising the East and Southeast Asian region (ESEA). Fifty percent occur in the first 24 hours and 75% during the first week after birth. In 2000, the Philippines reported stillbirths of 11/1000 live births, 12 early neonatal mortality rate of 15/1000 live births, and 31,000 approximate total of annual neonatal deaths (Sauvarin, 2006).

In the Philippines, the widest inequities in maternal and child health outcomes are observed between the poorest and the wealthiest exposing poor women to double the lifetime risk of maternal death. Disparities between rural and urban residents are also observed but pale in comparison to the former. Poor women are likely to deliver without presence of skilled birth attendants at home, have higher adolescent pregnancies, unplanned pregnancies, unmet family planning needs, and fertility rate (3.93 vs. 1.93 for the rich) (WHO/UNICEF, 2012). The total fertility rate for women with a college education is 2.3, about half that of women with only elementary education (4.5). Over half of pregnancies are unintended and 35% of poor women between 15-49 years of age accounted for 53% of unmet need for contraception. Only 50.6% of women used family planning (World Bank, 2010). Lack of contraception accounts for 3,500 maternal deaths annually (Singh, Darroch, Ashford & Vlassof, 2009).

Maternal deaths can be prevented by effective family planning services, antenatal care, and access to health facilities. However, investments in maternal care facilities only began in 2010 and are mostly overcrowded (Alave, 2012). Presence of a skilled birth attendant could save 40% of maternal deaths and planned pregnancy could save another 40% (Kaiser Foundation, 2009). Family planning alone could reduce MMR by 25% and child mortality by 20% (Sauvarin, 2006). Inadequate reproductive health services are an injustice to women. More than 80% of the country’s population is Roman Catholic, with natural means of family planning being the only method sanctioned by the church. Condoms, contraceptives pills, and other methods may be equated with abortion. Teenage pregnancy surged by 70% in 2012 (IRIN, 2009).

According to Sauvarin (2006), between 60-80 percent of maternal deaths among women in the ESEA region are caused by hemorrhage (24%), sepsis (15%), obstructed labor (8%), hypertensive disorders of pregnancy, such as eclampsia (12%) and complications of unsafe abortion (13%). Indirect causes include diseases such as malaria (20%) and other direct causes such as anemia (8%). In addition, Vera (2013) identified the following factors contributing to maternal deaths: closely spaced births or frequent pregnancies, poor detection and management of high risk pregnancies, poor access to health facilities because of geographic distance and cost of transportation, and lack of competencies of health care staff in handling obstetrical emergencies. Pregnancy poses a risk to the life of every woman. Maternal mortality is a mirror of a woman’s health and nutritional status during pregnancy, at birth, or in the period after childbirth. It also highlights her access to professional medical services before and during childbirth. Delays in seeking care by women and failure in referring them to appropriate medical management by healthcare professionals are some of the underlying causes of maternal death.

Diseases contributing to maternal mortality
Gestational Diabetes Mellitus (GDM) is the most common medical complication of pregnancy with a global overall prevalence of seven percent (American Diabetes Association, 2003). Pregnancy is considered a diabetogenic state due to decreased insulin sensitivity associated with advancing gestational
The overall prevalence of GDM in Southeast Asia is 7.6 percent. The Philippines has the highest reported overall prevalence at 14 percent, ranging between a high of 38.9% among the high-risk group and 4.1% in the low risk group. Studies of South Asian mothers and Filipinos outside the Philippines revealed a high risk for developing GDM (Lim-Uy et al., 2010).

Lim-Uy and associates (2010) found a prevalence of 7.5 percent among pregnant mothers admitted at the University of Santo Tomas Hospital between January to December 2009 with significant risk factors of increasing body mass index (BMI), family history of diabetes, and use of hormonal contraceptives. Using the Asean Federation of Endocrine Societies Study Group protocol at the Makati Medical Center in 1999 revealed that maternal age, weight gain, and pre-pregnancy BMI were useful predictors of GDM (Dumaguing, 2013).

A study conducted at Kaiser Permanente Center of Health Research on different ethnic groups in the US found that Filipinos are at a high risk of developing GDM along with Koreans. Filipinos had the highest prevalence of GDM among the 16,757 women studied between 13-39 years of age. Women with GDM were older at the time of pregnancy, had greater pre-gestational BMI and positive family history of diabetes mellitus (Philstar, 2012). Cheung, Wasmer, & Al-Ali (2001) reviewed medical records of women born in China, Philippines, Sri Lanka, and Vietnam receiving antenatal care at Westmead Hospital in Sydney, Australia between 1988 to 1996 to assess traditional risk factors for GDM. The women received 50 grams of non-fasting glucose test at 24-26 weeks of gestation. Women were considered with GDM status if their records documented >7-8mmol/L glucose test result, presence of risk factors based on age, weight at first antenatal visit, BMI, gravida, parity, and family history of diabetes, macrosomia, pregnancy-induced hypertension, miscarriage, stillbirth, or fetal malformation. Overall prevalence of GDM was 9.2 percent. Women born in the Philippines had a rate of 6.9% compared to those born in China (8.6%), Sri Lanka (10.5%) and Vietnam (10.6%).

GDM threatens a mother’s health and have long-term health consequences for the baby. Undiagnosed uncontrolled early GDM can cause pregnancy loss or heart defects in the baby. Later in pregnancy, the baby gains excess body fat and becomes overly large at birth, making delivery more dangerous and may necessitate caesarian delivery (Menon, 2012). Women at high risk for GDM include those with a first degree relative with diabetes, older than 30 years, and have a history of GDM, macrosomia, congenital malformation, recurrent abortion, unexplained intrauterine death, polyhydramnios, fetal abnormality, recurrent genital infection, maternal obesity, and intake of drugs as steroids (Caring for Diabetes Educational Forum, 2013).

Potential adverse maternal and fetal outcomes of untreated GDM include preeclampsia, polyhydramnios, preterm delivery, and operative delivery (Menon, 2012). Later in life, a significant risk occurs for developing hypertension, hyperlipidemia, urinary tract infections, electrocardiogram abnormalities, and death. When the maternal blood has too much glucose, the pancreas of the fetus senses the high glucose level and produces more insulin in an attempt to use this glucose. The fetus converts the extra glucose to fat. The combination of high blood glucose levels from the mother and high insulin level from the fetus results in large deposits of fat that causes the fetus to grow excessively large, weighing nine pounds or more, a condition known as macrosomia. The fetus will have much difficulty passing through the birth canal and nerve damage to the shoulders are associated with vaginal delivery (Philstar, 2012; Ellis, 2010). The newborn is at risk for hypoglycemia immediately after delivery. This problem occurs if the mother’s blood glucose level has been consistently high causing the fetus to have a high level of insulin in its circulation. Hypoglycemia occurs because the newborn is no longer exposed to the mother’s hyperglycemic blood.

Approximately five to ten percent of pregnancies are affected by preeclampsia affecting more than 6.6 million women worldwide (Knight, 2007). Preeclampsia causes 15 percent of premature births and is the number one reason for delivering a baby prematurely (Goldenburg, 1998). If undetected, preeclampsia...
can lead to eclampsia, one of the top five causes of maternal and infant morbidity and mortality causing an estimated 13 percent of maternal deaths worldwide, which is equal to one maternal death every 12 minutes (Preeclampsia Foundation, 2000).

During pregnancy, hypertension increases maternal risks for cardiovascular complications such as preeclampsia/eclampsia as well as fetal risks for growth retardation, morbidity, and mortality (Sison, 2004). In normal pregnancy, the lowered peripheral vascular resistance and increased maternal resistance to the pressor effects of angiotensin II results in lowered blood pressure. In preeclampsia, blood pressure begins to rise after 20 weeks of gestation secondary to the gradual loss of resistance to angiotensin II (Corpus, 2009).

Preeclampsia is defined as high blood pressure and excess protein in the urine after 20 weeks of pregnancy in a woman who previously had a normal blood pressure (The Mayo Clinic, 2011). The Preeclampsia Foundation (2000) has termed this condition as toxemia or pregnancy-induced hypertension (PIH), a disorder that occurs during pregnancy and affects both the mother and the fetus. It is a rapidly progressive condition characterized by elevated blood pressure, swelling, and presence of protein in the urine. Preeclampsia affects the development of the placenta inhibiting fetal growth and development. There may also be less amniotic fluid around the fetus in utero. If the placenta is severely affected, the fetus is affected negatively and may die in the womb.

The exact cause of preeclampsia is not understood but is believed to be a disorder of the lining of the blood vessels (Stoppler, 2013). Oftentimes, there are no symptoms; it may be detected during a routine antenatal visit when blood pressure is checked and urine is tested. Severe preeclampsia can be threatening for both mother and baby. Maternal symptoms can be a severe headache, visual problems such as blurring or flashing before the eyes, severe pain just below the ribs, heartburn, sudden increase in swelling of the face, hands and feet, and feeling unwell (The Mayo Clinic, 2011).

Medical experts agree upon the following risk factors for preeclampsia: multiple pregnancies, overweight or obesity (BMI of 35 or more), primigravida history of chronic high blood pressure, diabetes, kidney disorder, preexisting hypertension, diabetes, connective tissue disorder (rheumatoid arthritis or lupus), kidney disorder, pregnancy in early teen or past age 40 or over, last pregnancy more than 10 years ago, and mother or sister had preeclampsia during pregnancy (Royal College of Obstetrics and Gynecology, 2012).

**Prenatal care**

Prenatal care quality is an important indicator of maternal and infant health status (Alexander, 2001). The care provided by health workers in a medical facility, health center, or at home focuses on screening and preventing maternal and fetal problems, managing maternal and fetal symptomatic problems, preparing for childbirth and childbearing (Chamberlain, 1991). The number of prenatal visits depends on whether a pregnant woman is a high-risk pregnancy (Amos, 2013). Low-risk pregnant women are generally seen every 4 weeks until the last month when they are seen weekly. On average, women are seen eight times during pregnancy (Amos, 2013). The National Institute of Health (2012) recommends scheduled prenatal visits monthly before 28 weeks, every two weeks from 28 to 36 weeks, and weekly from 36 weeks to birth.

Health care providers need to assess pregnant women for presence of GDM and risk factors for preeclampsia. Primary prevention through promotion of a healthy lifestyle through diet and physical activity is a global public policy priority to improve glycemic control and decrease prevalence and risk of GDM (Dumaguing, 2013; Menon, 2012; Chan, 2009). Access to prenatal care, early detection of risks, careful monitoring, and appropriate management are crucial elements in the prevention of GDM and preeclampsia-related deaths. The pregnant woman may suffer complication, has to visit the nearest
facility for antenatal registration, and avail of prenatal care services (Vera, 2012).

Improved prenatal care can possibly decrease maternal mortality and morbidity. All pregnant women should be assessed for any risk factors at prenatal visits during the first trimester. GDM usually starts halfway through pregnancy (NIH, 2008). All women should receive an oral glucose tolerance test between 25-28 weeks of pregnancy to screen for the condition, 50 grams glucose tolerance test for low risk and 100 grams for high risk clients (Cheung, 2001). Managing gestational Diabetes is important in order to protect the baby. The goals of management should be keeping blood glucose level within normal limits and making sure that the growing fetus is healthy (National Institute of Health, 2008)

**Registered Nurse Midwife (RN-M)**

Registered nurse midwives (RN-Midwives) play a key role in delivering patient-focused services. The critical thinking skills of the RN-Midwife are vital in managing high-risk pregnancies with the goal to empower pregnant women through education, knowledge, and participation. The goals of treatment include keeping the mother’s blood glucose and blood pressure levels within normal limits during the pregnancy and making sure that the growing baby is healthy (NIH, 2008). The RN-Midwife is educated and trained to provide a broad range of health care services for women and newborns through nursing diagnosis (taking medical history, doing physical assessment, and blood sugar testing), managing therapy (outlining care, providing extensive health education, coordinating consultation, and referrals), and activities that promote women’s health and reduce health risks (Vorvick, 2011).

According to Berg (2005), the childbearing woman is subjected to increased attention and care when the presence of risk factors or complications is apparent for herself and her child. RN-Midwives have a special responsibility to balance the maternal and medical perspectives in the care of the childbearing woman at high risk, especially by promoting the woman’s inborn capacity to be a mother and to give birth in a natural manner (Berg, 2005). The RN-Midwives embodied knowledge is the most important tool in caring for at risk women using all his/her senses: sight, hearing, smell, touch, and sense of intuition. This perspective is exemplified when caring for women with GDM/Preeclampsia. When symptoms become aggravated, the RN-Midwife may require frequent clinic visits or conduct frequent house visits to observe the woman, check her blood sugar and blood pressure, or do measures to control blood sugar and blood pressure.

High-risk pregnancies under the care of RN-Midwives will be in collaboration with an obstetrician and dietitian (Berg, 2005; NIH, 2000). Pregnant women need a lot of information, help, and support to recognize and change aspects of their lifestyle or circumstances that put them or their babies at increased risk (Rooks, 1999). The goal of prenatal care is to monitor both the mother and baby throughout the pregnancy (Amos, 2013). The number of prenatal visits and the amount of time provided to pregnant women especially those at high risk will determine the delivery of prenatal care (Rooks, 1999). A high-risk pregnant woman needs a series of appointments tailored for them (Dileo, 2013). Through health education during prenatal visits, the high-risk pregnant woman learns how to manage her glucose level, weight gain, and blood pressure as well as stay healthy through diet, exercise, and emotional support. She has access to an RN-Midwife at every visit.

**Philippine Health Initiatives**

**RN-Midwives.** Midwives play a key role in delivering patient-focused services that are accessible, affordable and appropriate to the needs of patients as individuals and their families (International Confederation of Midwives, 2008). Public Act No. 310 enacted on December 4, 1901 first regulated the practice of midwifery in the Philippines under the Medical Board of Examiners. Subsequently, the regulation of midwifery was separated from Medicine by the Republic Act No. 2382 known as the Medical Act of 1959. The Board of Examiners for Midwives was created with the enactment of Republic Act No. 2644 on June 18, 1960 (Philippine Regulation Commission, 2011). Midwifery training originally consisted
of two years leading to a diploma in midwifery. Subsequently, programs offering Bachelor of Science degrees in midwifery opened.

Under the Philippine Midwifery Law of 1992 (Republic Act of 7392, Article 111, Section 19), a registered nurse may be allowed to sit for the Midwifery Board Examination after providing proof of completion of 20 actual deliveries (one per day) as certified by the director or chief of a duly registered or recognized hospital, or by the proper municipal, city, or provincial health officer, plus five sutures (episiotomy) and five intravenous (IV) injection cases (Robles, 1998). In 2014, registered nurses participating with the Registered Nurse for Health Enhancement and Local Services/ RNHEALS program (Philippine DOH, 2011) will be encouraged to comply with the requirement of 20 actual deliveries, five suturing and five IV insertion certified by either a municipal health doctor, provincial health doctor, or chief of staff of a hospital. Registered nurses who complete the requirements can challenge the midwifery board examination and obtain a midwifery license from the Philippine Regulation Commission.

**RNHEALS Program.** This program aims to address the shortage of skilled and experienced nurses in rural and underserved communities (Philippine DOH, 2011). According to the UNFPA (2011), the desired ratio of midwives to patients by 2015 is six per 4,000 births. In the Philippines there are only approximately 17,000 midwives in the public sector serving 42,000 barangays (Crisostomo, 2011). In other parts of Mindanao in southern Philippines the ratio is worse with one midwife per 60,000 population (Jimenez-David, 2010) or one midwife assigned to 2-3 barangays separated by vast bodies of water. Inaccessibility of services and lack of healthcare personnel aggravated by decades of armed conflict in the region have produced the highest MMR in the country (IRIN, 2009).

The RNHeals program has been criticized as an exploitation of registered nurses who will be hired as trainees for one year at P8,000 a month, an amount much less than the P24,887/month stipulated by the Philippine Nursing Law of 2002 as starting salary for public nurses. After training, these nurses will not be able to continue employment in these facilities depriving the poor and underserved of much needed expertise. While the country has a huge pool of nurses, severe unemployment remains despite the massive need for nurses in underserved and poor communities (Philippine Daily Inquirer, 2012).

**Responsible Parenthood and Reproductive Act of 2012.** Enrique Ona, MD, the Philippine Secretary of Health, stated that Republic Act 10354, known as the Responsible Parenthood and Reproductive Health Law of 2012, is vital in translating the government’s program of Universal Health Care or Kalusugan Pangkalahanan into an operational framework to reduce maternal deaths and improve overall reproductive outcomes (DOH, 2013). The law recognizes family planning as a measure to combat poverty and allow families to invest in their children’s education, nutrition, and economic wellbeing. This law guarantees universal access to methods of contraception, fertility control, sexual education, and maternal care. It mandates the government to promote all effective natural and modern methods of family planning that is medically safe and legal. The law calls for a multi-dimensional approach in integrating a component of family planning and responsible parenthood into all government anti-poverty programs. While abortion is recognized as illegal and punishable by law, the law mandates that the government ensure that all women needing care for post-abortion complications shall be treated and counseled in a humane, non-judgmental, and compassionate manner. Age-appropriate reproductive and sexuality education is required from grade five to fourth year high school using life skills and other approaches (Dalangin-Fernandez, 2011).

The Department of Labor and Employment is mandated to guarantee the reproductive rights of female employees. Employers with more than 200 employees shall provide reproductive services to all employees in their own facilities. Those with less than 200 workers shall enter into partnerships with professionals for the delivery of reproductive services. Employers shall inform employees of the availability of
family planning. Employers are also to monitor pregnant employees and provide them paid half-day pre-
natal medical leaves for each month of the pregnancy period that they are employed (Pernia et al., 2010).

Methodology

PNAA Demonstration Project
The President (Victoria Navarro) of the Philippine Nurses Association of America has affirmed the or-
ganization’s commitment to improve maternal and child health in the Philippines by increasing access
to high quality reproductive health services to underserved poor communities. Through the leadership
of the Global Outreach Committee Chair (Luz Llasos, PhD, RN), a grant-funded collaborative project is
being planned to partner with a College of Nursing in the Philippines serving 2-3 barangays in a remote
community. Dr. Llasos is a nurse-midwife with established partnership in her native province of Negros
Occidental. The concept of a Barangay Health Center is congruent with WHO’s definition of primary
health care that benefits everyone (Yach, 1998) as it aims to reduce health exclusion and social disparities
by organizing services according to people’s needs and expectations. It gives high importance to educa-
tion, nutrition, prevention, and health promotion focusing on empowering individuals and communities
(WHO, 2008).

The Barangay Health Center adopts the framework for coordinated action to improve women’s and
children’s health from the United Nations Population Fund, formerly called the United Nations Fund for
Population Activities (UNFPA, 2011). It will operate based on the following principles:

1. Leadership is built on a committed partnership and engagement between healthcare professionals/
organizations with local communities to address social determinants of health by addressing access
to quality reproductive services. Sustainability of results requires creative leadership to maintain the
level of material and human resources needed.

2. Access is key to service delivery to the poor and underserved by removing financial, social, and cul-
tural barriers for essential services. Services are accessible and free of charge to the local communities
served. Building an infrastructure of a continuum of comprehensive services requires team work and
collaboration with the local hospital. The Health Center is situated strategically to promote easy trans-
port and transfer to the hospital when needed.

3. Accountability is assured at all levels by training workers with adequate and appropriate competencies
and giving them the resources and other support to perform their work well. The infrastructure will
involve nursing faculty and students as well as RN graduates who will be mentored by an advanced
practice RN-midwife. Team effectiveness is built on appropriate leveling of competencies, account-
ability, and motivation.

4. Interventions entail delivery of high quality services and packages in a continuum of care, women
and newborn care (pregnancy, childbirth, and routine as well as emergency care), improved nutrition,
and prevention and treatment of major childhood diseases, prevention of complications of abortion,
family planning, HIV prevention, and care including Prevention of Maternal to Child Transmission
(PMTCT), and other services.

5. Competencies of staff are needed to deliver high quality and culturally sensitive and appropriate ser-
vices including: (a) education and services to promote family life, planned pregnancies, and positive
parenting; (b) abortion-related care services for women requiring or experiencing pregnancy termina-
tion or loss congruent with local laws and regulations; (c) antenatal care that includes early detection
and treatment of selected complications; (d) care during labor to promote clean and safe birth and
handle emergency situations to maximize the health of women and their newborns; (e) comprehen-
sive postpartum care; and (f) comprehensive care for newborns and infants. RN trainees should have
required knowledge and skills of Obstetrics, neonatology, social sciences, public health, and ethics
that form the basis for high quality, culturally relevant, and appropriate care of women, newborns, and
childbearing families (WHO, 2010).
As a community-based and patient-directed organization, the Barangay Health Center will play a crucial role in the delivery of health services to the local community. The staff will comprise a physician, public health nurse, nutritionist, medical technician, rural health midwives, barangay health workers, dentists, nursing faculty, and nursing students. Staff will be recruited primarily from local schools, students and professionals familiar with the community, and unlicensed birth attendants such as the local hilots (Hilots are folk medicine practitioners who use several care modalities such as physical manipulation of the body, massage, prayers, and other rituals for healing. In this article, hilots refer to traditional birth attendants who assist mothers during birthing and distinct from health care professionals such as midwives, Registered nurses, medical doctors, etc.).

PNAA members who are advanced practice nurses (APN)/RN-Midwives will serve as mentors and trainers of nursing students, midwives, hilots, and RNs at the Center. Professional and personal support to form a committed and highly qualified work team will be provided jointly by the college partner, hospital, PNAA, and the local community.

One of the aims of this initiative is to train RN-Midwives to become facilitators of the Philippine government’s universal health care within the Barangay Health Center. Equipped with the knowledge and abilities to promote maternal and child health, RN-Midwives have advanced preparation to diagnose early symptoms of risks and prevent development of GDM and preeclampsia, the two highest causes of infant and maternal mortality in the Philippines. They have the critical thinking skills to refer patients to appropriate medical services if needed, manage common conditions, and prevent illness and its complications. They have the breadth of preparation to promote health across the lifespan. The nursing curricula in the Philippines emphasize public health and community health nursing. Thus, RN-Midwives have the training to work with patients, families, and community leaders in assessing, planning, implementing, and evaluating health care needs and services in the community.

Implementation
The PNAA is seeking funding for this project that is intended to run for a period of 3 years. The PNAA president will reach out to Philippine officials, including Secretary of Health, Enrique Ona in 2014. Dr. Llasos has received a commitment from one of the local colleges in Negros and a local hospital to open its clinic to three barangay units. She has previously worked with faculty and students in this college in providing Maternal and Child Health Services to the local barangays. Services provided at this clinic are documented and reported to the local Department of Health. The project implementation protocols will be collaboratively developed before the project is rolled out. Data collection will be consistent with local reporting guidelines. Currently, infant and maternal mortality are reported to the Department of Health.

Project Outcomes
Evaluation of the project outcomes will be based on the following data to be collected:

1. Trends in numbers of patients seen monthly with special attention to women and children visits including numbers of pregnant women seeking prenatal visits, prenatal visits for each pregnant woman, referral to hospital for delivery, number and types of deliveries, newborn and well child visits, postpartum visits, and follow-up;
2. Types of services provided and sought by patients; and,
3. Monthly morbidity and mortality data based on tracking of all pregnant mothers and newborns.

Data that will be collected will be analyzed using SPSS. Data will be analyzed every 6 months for the first 3 years of the project. Effectiveness of the project will be based on the downward trend in maternal and children (under age 5) morbidity and mortality.
There are plans to promote sustainability of the project beyond the grant period. RN-Midwives, local midwives, and hilots will be provided training at the health center. Agreement on the role of each one will be collaboratively formulated. Three trainees (1 RN-Midwife, 1 midwife, and 1 hilot) will be trained every 3 months with supervised practicum. Clear delineation of roles of the trainees in collaborative team work will be emphasized. Trainees will be recruited from the local area who will then facilitate training and mentoring of succeeding trainees under the directorship of Dr. Llasos and other PNAA RN-midwives. Other trainees will be recruited from the most rural and underserved areas in Muslim Mindanao with the greatest maternal and infant mortality in the Philippines by collaborating with their local community and religious leaders as well as health officers. Success of the training program will be based not only on the number of trainees who successfully completed the program but, more importantly, on the trends in maternal and infant morbidity and mortality reported by local Barangay Health Centers where they practice.

**Conclusion**

PNAA’s commitment to improve population health especially among the poor and underserved communities in the Philippines will be demonstrated by this project. One of the projects it has undertaken is the provision of free housing units for the poor through the Gawad-Kalinga Foundation. The organization is committed to the exchange of advanced information and technology to promote the health of Filipinos who have limited or no access to health services. Maternal and child health is one of the major indices of a nation’s health. Through its Global Outreach Committee, the PNAA will mobilize expert Advanced Practice RN-Midwives to train local RNs, midwives, and hilots in promoting access to quality maternal and child health services by underserved communities through primary health centers, the local Barangay Health Center. This project is envisioned to be a demonstration project to facilitate achievement of the country’s Millennium Goals on maternal and child health.

**References**


Collaborative Student-Led Initiative to Improve Handoff Report Between Emergency and Medical-Surgical Departments
Linda Schindler and M. Danet Lapiz-Bluhm

Abstract

Introduction: The Joint Commission reported that 61% of healthcare-related sentinel events in 2011-2013 are attributed to communication errors among healthcare team members. Good communication is critical during handoffs when the responsibility of care shifts from one nurse to another. As part of their undergraduate nursing research course, students conducted a project where they collaborated with the clinical instructor and nursing management at their hospital rotation to help promote patient safety and enhance the quality of care through improvement of the handoff process between the Emergency Department (ED) and Medical-Surgical (MS) unit.

Objective: The paper aims to present this student-led initiative aimed at improving communication between nurses in the ED and MS units to promote patient safety and quality of care.

Method: Students interviewed registered nurses (RN) from the MS unit (n=15) and ED (n=8) to identify the most important information needed in the handoff report for safe patient transfer.

Results: Patient information derived from the interviews included assessment and diagnosis, interventions, complaint and history, medications, identification, and laboratory results. A handoff report using the SBAR (Situation, Background, Assessment, Recommendations) format was proposed to standardize communication for safe patient transfer and potential reduction of errors.

Conclusion: This educational activity provided an opportunity for students to collaborate with members of the healthcare team and highlighted the importance of handoffs and other communications to promote patient safety and quality care.

Keywords: undergraduate nursing student education, patient safety, SBAR, handoff
Introduction
The Joint Commission reported that 61% of healthcare-related sentinel events in 2011-2013 are attributable to communication errors among healthcare team members (The Joint Commission, 2013). To optimize safe delivery of quality healthcare, The Joint Commission formulated the National Patient Safety Goals in 2002, with goal #2 aimed to “improve the effectiveness of communication among caregivers” (The Joint Commission, 2014). Precise communication is critical during handoffs when the responsibility of care shifts from one person, department, or agency to another because inadequate communication of patient information can result in compromised ability to deliver patient-centered care (Mascioli, Laskowski-Jones, Urban, & Moran, 2009). Hospitals should “implement a standardized approach to ‘hand-off’ communication, including the opportunity to ask and respond to questions” (Revere, 2008). When patient care is in transition, such as during change-of-shift or transfer of the patient from one department to another, the receiving nurse needs comprehensive, prioritized information to facilitate the transfer process and optimize safe patient care (Mascioli et al., 2009). Communication tools for standardized information exchange can be more effective when both the sending and receiving nursing staff have contributed to their development (Brown Lazzara, 2008; Shendell-Falik, Fienson, & Mohr, 2007; Welsh, Flanagan, & Ebright, 2010).

Communication in the healthcare environment is a complex, rapid process with many participants contributing to the information exchange (Dixon, Larison, & Zabari, 2006). Effective flow of information across the continuum of care requires transfer of extensive data from the sender to the receiver. The information must be pertinent, timely, comprehensive, and organized to achieve clear communication that can translate into patient-centered care (Welsh et al., 2010). During patient transfers, when the need for clarity is imperative, breakdown in information exchange can increase the risk of errors. When a patient is transferred from the Emergency Department (ED) to the Medical-Surgical (MS) unit, the patient experiences change on several levels: from one nurse to another; from one department to another; from the urgent care environment to the acute care setting. Therefore, identifying the most pertinent patient information for inclusion in the handoff report is dependent on the relevance of the information for both the sender and receiver. Sender nurses and receiver nurses identified key information for safe patient handover from the ED to the intensive care unit including “patient’s name, date of birth, age, sex, mechanism of injury, presenting condition, past history, medications and reactions, observations, hemodynamics, Glasgow Coma Scale, treatment to date and response, investigations, chest X-ray, relatives’ contact details, property accompanying the patient, intake and output, airway management, available documentation” (McFetridge, Gillespie, Goode, & Melby, 2007, p. 266). Although other examples of communication tools for exchanging patient information have been suggested (Brown Lazzara, 2004; Dixon et al., 2006; Pesanka et al., 2009; Priestly, 2006; Shendell-Falik et al., 2007; Welsh et al., 2010), prioritized content based on input from sending and receiving nurses to guide the development of the communication tools have not been presented.

The results presented are based on a class project conducted by junior nursing students in partial fulfillment of the requirement of their undergraduate nursing research course and has been presented previously as a poster (Schindler et al., 2011). The undergraduate nursing research course was designed according to the mandate of the American Association of Colleges of Nursing (AACN, 2008) that baccalaureate education should involve the scholarship of evidence-based practice (Essential III). According to AACN, “Professional nursing practice is grounded in the translation of current evidence into practice. Scholarship for the baccalaureate graduate involves identification of practice issues, appraisal and integration of evidence, and evaluation of outcomes” (AACN, 2008, p.16). Baccalaureate-prepared nurses are expected, through engagement with interprofessional teams, to “acquire an understanding of the process for how nursing and related healthcare quality and safety measures are developed, validated, and endorsed” (AACN, 2008, p. 17). This paper aims to describe the educational process by which undergraduate nursing students developed a collaborative project with their clinical instructor and the nursing
management of a teaching hospital as part of their nursing research course requirement. Through this process, the students became key members of the healthcare team to help develop a communication tool that would facilitate safe and effective patient transfer.

The purpose of this collaborative project was to strengthen the hospital safety culture and to enhance quality of care through an improved handoff process during patient transfer between the ED and MS unit as part of a program called Comprehensive Unit-Based Safety Program (CUSP) (Agency for Healthcare Research and Quality, 2014). The goal was to achieve timely and effective exchange of pertinent information by implementing a standardized format and process during patient transfer. The project was designed to identify the most important information needed during the handoff report to achieve safe patient transfer from the ED to the MS unit. The responses gathered from both sender and receiver nurses were subsequently organized and prioritized for inclusion in a standardized communication tool, using the SBAR (Situation, Background, Assessment, Recommendation) format (Dixon et al., 2006; Mascioli et al., 2009; Mikos, 2007; Pope, Rodzen, & Spross, 2008).

Methods
The undergraduate nursing students (n = 8) used the qualitative research design to gather the most important information needed to achieve safe patient transfer from ED to MS unit. Following approval from their clinical instructor and the nursing management of the hospital, the students interviewed RNs from the ED (n = 8) and MS (n=15) units by asking an open-ended question. MS nurses were asked, “What do you think is important to have on a handoff report when receiving a patient from the ED?” ED nurses were asked, “What do you think is important for the Medical-Surgical nurses to know when transferring a patient to the MS floor?” Responses were analyzed for emerging themes which were subsequently categorized to determine the most frequently mentioned nurse responses. Responses mentioned more frequently were deemed more important information to be included and highlighted in the handoff communication tool. Both individual responses and categories of information were prioritized as a guide to develop the communication tool. This course activity was part of a study approved by the Institutional Review Board of the University of Texas Health Science Center in San Antonio, Texas aimed at improving the undergraduate nursing research course.

Results
Information identified by ED and MS nurses as important during handoff communication from ED to MS was grouped and ranked into 29 coded responses (Figure 1). Information about medications and medication orders, such as those taken at home and those given in the ED, were identified most frequently by both ED and MS nurses, and were therefore deemed to be most important information during the handoff process. Other information identified by ED nurses as important for the ED-MS handoff process included issues affecting immediate care such as medical history, ED interventions, allergies, admitting diagnosis, and vital signs, among others. Information identified by MS nurses as important included issues such as laboratory and diagnostic results, mental status, orders, IV sites, and telemetry, among others.
Figure 1. Information identified important by Emergency Department (ED) and Medical-Surgical (MS) nurses during transfer of patients from the ED to MS unit

The information identified by the nurses was further organized into one of six patient information categories: (1) assessment and diagnosis, (2) interventions and treatments, (3) complaint and history, (4) medications, (5) identification, and (6) laboratory, imaging, and test results (Table 1).
Table 1. Information identified by Emergency Department (ED) and Medical-Surgical (MS) nurses was grouped into one of the 6 patient-related information categories and prioritized based on the frequency of the response as Priority 1 (>50% of respondents) or Priority 2 (<50% of respondents). Priority 3 was information obtained from the literature (Brown Lazzara, 2004; McFetridge et al., 2007; Mikos, 2007; Pesanka et al., 2009; Shendell-Falik et al., 2007) and hospital forms. Communication parameters were classified into the SBAR format (Mikos (2007) to create the proposed SBAR handoff report (Figure 2).

Although not included in Figure 1 or Table 1, three additional responses seemed to indicate the importance of the communication process: direct nurse-to-nurse report, complete documentation, and transfer of the paper chart. Analysis of the frequency of the nurse responses seemed to indicate that some information may be of higher priority compared to others. Hence, identified information mentioned by more than 50% of the nurse respondents was assigned to Priority 1 while coded responses mentioned by less than 50% was assigned to Priority 2 (Table 1). Additional communication parameters from the literature (Brown Lazzara, 2004; McFetridge et al., 2007; Mikos, 2007; Pesanka et al., 2009; Shendell-Falik et al., 2007) and hospital forms were added under Priority 3. Using Mikos (2007) guidelines for SBAR handoff format, a recommended handoff report form was created by classifying all information in one of the following sections: Situation, Background, Assessment, and Recommendations (Figure 2).
Collaborative Student-led Initiative to Improve Handoff Report

Discussion
This student-led educational activity in an acute care hospital yielded several benefits including student education, healthcare team communication, and promotion of patient safety. Baccalaureate nursing students practiced the research tenets they learned in their undergraduate nursing research class in the clinical setting to improve safety and delivery of patient care. They were able to acquire the understanding and practice of how nursing and healthcare quality measures are developed, validated, and endorsed as mandated by AACN (2008) for their baccalaureate education. They actively planned the development of their project to improve the handoff process during their nursing research course, sought approval from their clinical instructor, and communicated the idea to nursing management of the hospital for concurrence. With this educational-clinical practice collaboration, the students were engaged as important members of the healthcare team. The students’ interviews identified and helped validate information deemed important by sender (ED nurses) and receiver (MS nurses) during the ED to MS handoff process. Through the development of a proposed handoff report form, they were engaged in endorsing a nursing tool to help promote the quality of care and patient safety to hospital management. This process also involved presentation of their project results in oral and poster formats both to hospital management and the School of Nursing, disseminating evidence-based information to a wider nursing
audience. Through this project, the students contributed to the hospital goal to improve patient safety and meet CUSP initiatives. The Agency for Healthcare Research and Quality (AHRQ) launched CUSP to improve patient safety by reducing healthcare-associated infections (HAIs) (Agency for Healthcare Research and Quality, 2014). Expanded to address other patient safety initiatives including this project for appropriate patient handoff, CUSP integrates leadership, teamwork, and communication to promote a healthcare culture of patient safety. The student leadership of this project integrated communication and teamwork to produce a usable tool to promote safe patient transfer. As a result, the needs of multiple stakeholders were met and nursing students were empowered as important members of the healthcare team by providing them opportunities to practice skills needed as future professionals.

The development of the proposed standardized handoff tool is aimed at facilitating effective communication of safe patient transfer from one department to another (i.e., ED to MS). Communication in the healthcare environment is a rapid, complex process that may involve multiple members of the healthcare team (Dixon et al., 2006). Therefore, it must be pertinent, timely, comprehensive, and organized to achieve clear exchange of information (Welsh et al., 2010). A breakdown in information exchange can increase the risk of errors which may be prevented by using standardized communication tools. Unique to the development of the proposed handoff tool is the involvement of nurses who are engaged in the communication, i.e., sender (ED) and receiver (MS) nurses. Involving these key players in the process not only helps to gain their buy-in during implementation but also helps to produce a more meaningful end result, the handoff report. Incorporation of information from the literature enhanced the comprehensiveness of the content of this report.

The proposed handoff report (Figure 2) was developed using the SBAR format. SBAR format was originally intended to improve nurse-physician communication in urgent care situations (Leonard et al., 2004). It was designed to expedite cross-disciplinary communication by creating common and consistent structure for information, thus a shared mental model (Cornell et al., 2013). It had been advocated to address the many shortfalls of shift reports which are often long, unstructured, inconsistent, inaccurate, and sometimes omit key information while at the same time convey out-of-date or unnecessary information (Riesenber, 2010; Nelson & Massey, 2010; Dunsford, 2009; Street et al., 2011; Wentworth et al., 2012). In addition, SBAR format reportedly improve social capital, legitimacy, and the formation of schemas for rapid decision making (Gephard, 2012; Vardaman, et al., 2012; Arora et al., 2008). A recent study showed that introduction of SBAR in 4 medical-surgical units made shift reports more focused with more time spent in discussing the patient and less on transcribing information (Cornell et al., 2013). The SBAR protocol provided a “concise and prioritized structure that enabled consistent, comprehensive, and patient-centric report” (Cornell et al, 2013, p. 422).

The SBAR format is one of the tools of TeamSTEPPS™ (Team Strategies and Tools to Enhance Performance and Patient Safety), an evidence-based teamwork system that optimizes patient outcomes by improving communication and teamwork skills among healthcare professionals (King et al., 2008). With the nationwide implementation of TeamSTEPPS™ by the Agency for Healthcare Research and Quality (AHRQ) and the Department of the Defense, the SBAR format is simple and familiar to members of the healthcare team. Communication has been identified by TeamSTEPPS™ as one of its four core framework skills together with leadership, situation monitoring, and mutual support (King et al., 2008). TeamSTEPPS™ posits a dynamic interplay between the four skills and three team-related outcomes of knowledge (shared mental model), attitudes of mutual trust and patient orientation, and performance (in terms of adaptability, accuracy, productivity, efficiency, and safety). The basis of a team striving to deliver safe, quality care is an interaction between the outcomes and skills among the members of the healthcare team including the patient, direct caregivers, and all those who play a supportive role within the healthcare delivery system (King et al., 2008).
While the handoff report may need more refinements from the agency involved, this project highlighted the role of junior undergraduate nursing students, not only as support in the healthcare delivery system, but as potential key members of the healthcare team to help promote better communication towards error reduction and safe, quality care. Student journaling following this experience confirmed their appreciation of their role as important members of the healthcare team and the realization of the role of the research process in improving the quality of patient care. This realization of the role for research to improve patient care is especially impressive since research has shown that nurses and undergraduate nursing students have negative attitudes about research (Ax & Kincade, 2001; Owens & Kelly, 1998). Students frequently regard the research course as a compulsory exercise that examines esoteric concepts, consumes their time with futile writing assignments, and lacks clear connection between theory and practice (Ax & Kincade, 2001; Halcomb & Peters, 2009). Perhaps the students’ leadership role, where they planned, communicated, conducted interviews, analyzed results, and presented their project on a highly relevant topic related to their clinical rotation, provided them the active learning environment which students seem to prefer (Pugsley & Clayton, 2003). The students’ course evaluation supported this finding. Furthermore, this report should also encourage nursing management in clinical rotation sites to engage students as important players on issues that promote the culture of quality care and patient safety, building a better environment for all members of the healthcare team, especially the patients.

References


"What collaborative initiatives are you working on locally, nationally, or globally? What are their benefits and anticipated outcomes in terms of impacting nursing and/or health care?"

Close-up is a regular feature section of the JNPARR. In every issue, we post a question that is of relevance to nursing. We encourage the readers to send in their comments, thoughts, and recommendations in response to the question. The intent is for all of us to have a venue wherein we can express our opinions and get a sense of the sentiments of where we stand on relevant, critical issues.

I am a consultant for the K-12 curriculum on health since late 2012. This is a good opportunity for a nurse to influence and participate in educational reform in the Philippines. On the global level, I head the Secretariat of the Asia Pacific Emergency and Disaster Nursing Network (APEDNN), a commitment of the University of the Philippines College of Nursing (UPCN) as a World Health Organization (WHO) Collaborating Center. I am also a member of the East Asian Forum of Nurse Scholars (EAFONS) Executive Committee and current Chair of the 17th EAFONS Conference to be held in Manila on February 20 – 21, 2014 at the Century Park Hotel (www.17eafonsmanila.com). Both capacities provide a great opportunity to facilitate collaboration and networking with different countries in the area of disaster work and graduate education, as well as benefiting national development and demonstrating the leadership and expertise of the Philippines in these geographic regions.

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Member, Technical Committee on Nursing Education
Commission on Higher Education
Philippines

In my involvement outside the Philippine Nurses Association of America (PNAA), I represent my area of nursing specialization through the American Society of PeriAnesthesia Nurses (ASPAN) with six other organizations, namely, the American College of Surgeons (ACS), American Society of Anesthesiologists (ASA), American Association of Nurse Anesthetists (AANA), American Association of Surgical Physician Assistants (AASPA), Association of periOperative Registered Nurses (AORN), and the American Association of Surgical Technologists (AST) to form the Council of Surgical and Perioperative Safety (CSPS). The CSPS is a multidisciplinary coalition of professional organizations providing safe continuum of care for surgical patients from preoperative, intraoperative, and postoperative phases of care. The coalition is committed to collaboration, effective communication, and partnership among all team members, resulting in significant impact on patients and the surgical team. The CSPS extends its expertise in Safe Surgery Principles and advocates the importance of patient safety in various conferences (IHI, The Joint Commission, ACS Congress, ASA, ASPAN, AORN, and etc.). We are… One Team. One Goal...Surgical Patient Safety.

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The Philippine Nurses Association of Colorado conducts nursing and health care activities in the local community. An example was our joint initiative with local health and non-health organizations last Fall. This coming together of local entities with unique yet overlapping missions and objectives included the Asian Pacific Development Center, Walgreens, American Cancer Society, and the Philippine American Society of Colorado. Our common purpose was to increase the local community’s awareness and to become informed agents in the process of designing and directing their own health and that of their families. During this health fair, information was distributed and conversations were facilitated around topics of women’s wellness, the Affordable Care Act, immunizations, and “Healthy Hearts.” The event was an inspiring and powerful partnership by our local nurses with these agencies. In the end, the health fair attendees gained meaningful insights and information to be able to take charge of their personal health and their respective families as well.

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A local collaboration between a university and the community has potential for national and global impact. Such is the partnership between a Master’s in nursing student and a faculty-mentor. The graduate student embarked on a partnership where she functions in the role of the nurse leader of a project aimed to increase the capacity of The Rocky Mountain Medical Reserve Corps of Colorado (RMMRCCO). This is a volunteer work force that supplements the public health and emergency preparedness and response needs of the community. The Master’s student is an experienced RN whose passion is emergency preparedness. The faculty-mentor is a long-time nurse educator who mentors and hones the leadership skills of the student through this learning partnership. This project is strategically positioned to recruit and sustain the volunteer work force of the RMMRCCO. Should this project prove successful at the local level it will be a model for national implementation with nurses comprising the core of the volunteer work force and serving as leaders in this important health service.

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The Nursing Rehabilitation Program is an important element of nursing in a long-term care setting. The program consists of nursing interventions that promote the patient’s ability to adapt and adjust to living as independently and safely as possible. The goal is to improve, maintain, and prevent decline in activities of daily living. Some of the program’s activities teach active range of motion exercises, maintenance ambulation, transfers, eating, prevention of aspiration, dressing and grooming, positioning, and the use of supportive and positioning devices. The program is an interdisciplinary and collaborative approach in the care of a patient, involving professionals from Nursing, Physical Therapy, Occupational Therapy, Speech and Hearing, Social Work, Food and Nutrition, Psychology, and Medicine. Each has an integral and essential role in this collaborative process.

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Collaborative work has been evident in many of the projects initiated by the Philippine Board of Nursing. Some examples include the revision of the Philippine Nursing Act of 2002 that required the cooperation of and participation by the Technical Working Group. I am an active member of this group charged with the review and revision of the current law. The final document is now in the Congress and Senate for deliberation and vote.

I am actively involved with representatives from various professional nursing organizations, led by the Board of Nursing, in drafting and implementing the Philippine Nursing Roadmap 2030. There is likewise a collaborative project comprised of various nursing leaders, of which I am a member, charged with the development of the National Nursing Core Competency Standards. This was eventually adopted through Board Resolution No. 24, Series of 2012. I also serve as a module writer, as part of the implementation phase.

Some Deans of the National Capitol Region (NCR), including myself, have been designated as members of the Regional Quality Assessment Team (RQUAT) in assisting the Commission on Higher Education (CHED, NCR) with assessing the compliance of colleges of nursing to CHED’s Policies, Standards, and Guidelines in Nursing Education.

I also collaborate with other departments and committees as Chair of the Committee on Nursing Education of the Philippine Nurses Association (PNA). Together, we assist the PNA with its many projects and programs.

Remedios Lapidez-Fernandez, PhD, MN, RN  
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I am a co-founder of “Improving Health, Housing, Education, and Livelihood of the Poor in the Philippines, Inc.” (IHHELPP), a 501c3 public foundation focusing on the typhoon relief efforts in the Philippines. The interprofessional collaborative nature of these activities involves working with different non-government organizations (NGOs) and private groups that focus on rebuilding and conducting medical missions. I am working specifically with the Launfal Foundation which sends household items for the typhoon victims. The focus of our work is heavily invested in rebuilding efforts that is population-based healthcare initiatives for public health.

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At University Correctional Health Care where I work, nurses collaborate with the Medical and Classification Departments and Custody staff within the 13 state prisons, halfway houses, and Juvenile Justice Commission (JJC) facilities to improve care using quality improvement (QI) projects. For example, one newly formed QI team at the JJC’s Bordentown location identified the need for improved discharge and transfer information about juveniles. To enhance communication, team members suggested the establishment of weekly, departmental emails that would include the most up-to-date, designation-specific release information to ensure timely delivery of patient care.

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Call for Participation: Next Issue’s
CLOSE-UP Feature Section

SUBMISSION DEADLINE: Wednesday, April 30, 2014
Please email your contribution to JNPARR2013@gmail.com

The CLOSE-UP Feature Section of the Summer 2014 issue of the Journal of Nursing Practice Applications & Reviews of Research (JNPARR) will focus on knowledge discovery, organization, and sharing within the nursing community. We invite you to share with us examples pertaining to knowledge creation and generation. Specifically, the question that we ask of you is:

What new or validated nursing or health topic resulting from research, EBP, or quality management can potentially impact or has influenced your practice as a nurse, educator, manager, researcher, or administrator? What are benefits to its intended recipients, including patients, nursing students, population-specific groups, and the global community?

Please limit your responses to 4-5 sentences and include your name, credentials, place of work and state, so we can publish these accordingly. Your submission is your implied consent allowing us to print your comments.

Call for Manuscripts
JNPARR, Summer 2014 Issue

SUBMISSION DEADLINE: Friday, April 4, 2014
Send inquiries and submissions via email to JNPARR2013@gmail.com

The Journal of Nursing Practice Applications & Reviews of Research (JNPARR) invites submissions of manuscripts to be considered for publication. The JNPARR is particularly targeting the attention of nurses in academe, practice settings, research facilities, students, or those who wish to share their research and evidence-based practice studies to the general nursing community.

The theme of the Summer 2014 issue is “promoting knowledge discovery, organization, and exchange within the nursing community.” We are particularly interested in manuscripts that describe nursing research promoting knowledge discovery, validation of concepts and theories, translational or applied research; integration and application of research findings into clinical practice; and application of evidence-based practice (EBP) models and processes to improve patient care.

The submission deadline for this issue is Friday, April 4, 2014. Author guidelines and submission forms are available at www.mypnaa.org. Inquiries and submissions may be sent via email to jnparr2013@gmail.com.
Kangaroo Care in the Reduction of Pain in Full Term Neonates Undergoing Newborn Screening

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Abstract

Introduction: Neonates experience pain as a result of common hospital procedures that cause tissue damage like heel lance. There are different pain management interventions used to provide analgesia to the neonates. A non-pharmacologic method used is Kangaroo Care (Cong, 2006; WHO, 2003).

Objectives: This study validates the effectiveness of Kangaroo Care (KC) in reducing pain among neonates undergoing newborn screening. Other aims of this research are to identify and compare the differences between the pain responses of newborns and to report the effect of time on pain responses.

Methodology: A single blind experimental design was used involving an intervention and a control group. Thirty-three neonates were chosen from the Department of Pay-Patient and Charity Service, Ward 15 of the University of the Philippines-Philippine General Hospital (UP-PGH) Medical Center. Neonates were randomly assigned to the control and intervention groups. Neonates in the intervention group received Kangaroo Care for 30 minutes prior to the heel lance being done. Those in the control group received routine care as currently practiced with the neonates being held by the mother during the heel lance procedure. Physiologic response using heart rate (HR) and oxygen saturation were documented at two time points, and the extent of pain was measured using the Neonatal Infant Pain Scale (NIPS).

Results: Infants in both groups showed no difference in the behavioral response to pain immediately after heel pricking during Newborn Screening (NBS). The distribution of the two groups differed slightly in behavioral pain response during the period of 1 and 3 minutes after the procedure (38% and 21% of non-overlap respectively); however, statistical testing was not significant. The largest effect size for the behavioral response was found to be at 1 minute, which is similar to findings of previous studies. The mean HR and oxygen saturation of the control group were observed to be lower than that of the intervention group. Neither outcome was found to be statistically significant.

Recommendations: A larger sample size should be used in future studies. Additionally, other factors such as breastfeeding before or during the heel lance procedure should also be looked into, possibly in conjunction with Kangaroo Care to reduce pain among infants during NBS.

Keywords: kangaroo care, neonatal care, experimental design, pain management among neonates
Background

Heel lance is a common hospital procedure causing pain and tissue damage to neonates. Excessive and prolonged unrelieved pain in the infant causes adverse physiological effects in all major organs that can be life-threatening and have long-term cumulative effects (Grunau, Holsti, & Peters, 2006; Whitt Hall, 2005; Page, 2004; Taddio, Shah, Gilbert-MacLeod, & Katz, 2002). There are a few pain management interventions used to provide analgesia to neonates. One non-pharmacologic method used is Kangaroo Care (Cong, 2006).

Kangaroo Care (KC) is defined as the method of holding a baby that involves skin to skin contact (WHO, 2003). The diaper-clad baby with a piece of cloth, either a receiving blanket or the parent’s clothing covering his back, is placed in an upright position against a parent’s bare chest – tummy to tummy and in between the breasts. The baby is snuggled inside the pouch of their parent’s shirt or blouse, resembling a kangaroo pouch; thus, referring to the term “kangaroo care.”

KC or skin-to-skin contact was developed in Bogota, Colombia in the late 1970s and was first reported in 1983 by pediatricians Rey and Martinez (Ludington, Anderson, Swinth, Thompson, & Hadeed, 2004). By the 1980s and 1990s, the KC method was routinely used by industrialized countries, where parents and infants used the KC position to promote bonding and attachment. Since 1983, KC has been studied in-depth and has shown a positive impact on both the infants and their parents (Gregson & Blacker, 2011; Cong, 2006; WHO, 2003).

Neonates have endogenous mechanisms elicited through skin-to-skin maternal contact that decrease pain response. Recent studies have documented that gentle human touch has a soothing effect as evidenced by the neonates’ active sleep and decreased levels of motor activity and behavioral distress (Gregson & Blacker, 2011; Ludington, Anderson, Swinth, Thompson, & Hadeed, 2004). Moreover, KC provides a continual, non-phasic tactile and proprioceptive stimulus, thereby modulating infants’ stress and pain responses (McCain, Ludington-Hoe, Swinth, & Hadeed, 2005; WHO, 2003; Gitau et al., 2002).

Newborn screening is a mandatory procedure used to detect metabolic disorders. It involves heel lancing and squeezing which cause pain to the neonates. In the University of the Philippines-Philippine General Hospital (UP-PGH) Medical Center, an estimated 143 neonates are being screened monthly, making it a commonly done procedure that can be a painful experience for these infants during their early days of life. However, current nursing interventions when managing pain for neonates associated with this procedure are nil (Gallo, 2003).

Nurses are faced with the challenge of exploring ways to help neonates minimize pain when undergoing intrusive stimulations. Nurses and newborn screeners recognize the need to decrease early exposure to stress and pain, realizing the negative effects on the neonates’ adaptation to extra-uterine life, brain development, and on the family.

There is evidence in the literature that neonates can and do experience pain (Whitt Hall, 2005); newborn screening is common and known to be a painful procedure; neonatal pain responses are harmful (Whitt Hall, 2005); and existing interventions to modify pain responses remain less than optimal (Gallo, 2003). Previous studies on KC suggest that it may be effective in blunting pain responses (Pillai et al., 2011; Johnston et al., 2008; Dodd, 2005). If KC is said to decrease pain, this non-pharmacological intervention that is also side effect-free may be promoted in managing pain among neonates (Cong, 2006).

Kangaroo Care And Pain Management During Newborn Screening

Researchers involved in this study set out to validate the effect of Kangaroo Care on the reduction of pain among full term neonates during newborn screening.
Other aims of the study include providing evidence to answer the following questions:

1. What pain responses do neonates manifest after Newborn Screening in both control and intervention groups?

2. Is there a significant difference between control and intervention groups in terms of pain responses?

**Hypotheses**

The following are the hypotheses for this study:

$H_0 = H_1$: There is no significant difference between the pain responses of the neonates receiving KC and those who were not.

$H_0 \neq H_1$: There is a significant difference between the pain responses of the neonates receiving KC versus those who were not.

**Objectives of the Study**

The specific aims of this study are:

1. To describe the pain responses of the newborns after newborn screening in both control and intervention groups.

2. To identify whether there is a significant difference in the pain responses of the newborns between the control and the intervention groups.

**Significance of the Study**

Results of the study will help nurses support the value of the significance of biobehavioral nursing interventions in minimizing pain during newborn screening. Moreover, this is an attempt to explore approaches in nursing care dealing with the challenges of neonatal pain. Outcomes of the study will be beneficial in the sense that KC is a non-pharmacologic intervention that is cost-free, simple, and effortless. Furthermore, it provides a comfortable hospital experience to both mother and neonate.

**Scope and Limitation of the Study**

The primary focus of this study is to determine the effects of Kangaroo Care in the reduction of pain among neonates. The study is limited to neonates born in UP-PGH and only delved on pain caused by the heel lance procedure during NBS. There is reliance on observation data, oxygen saturation, and heart rate to compare the control and intervention groups.

**Literature Review**

It is difficult to ascertain pain manifestations in neonates, making it hard for health practitioners to assess the experience of pain among newborns. Some misconceptions include newborns being incapable of feeling or expressing pain and being less sensitive to pain than older children and adults. Other false impressions include the thought that newborns do not feel pain; or if they do, that the pain is not significant and have no long-lasting consequences. These misconceptions have been proven wrong (Whitt Hall, 2005; Johnson, 2010). Moreover, it has been shown that neonates also remember pain, as evidenced by apparent reaction to subsequent pain experiences, such as multiple immunizations (Johnson, 2010; McCaffery & Passero, 1999).

Preterm and term infants admitted to the neonatal intensive care unit (NICU) experience many painful procedures. These include the possibility of all types of surgery or other invasive procedures, such as...
placement of peripheral arterio-venous lines and chest tube placements. Healthy newborns also experience painful routine nursery procedures, i.e., neonatal circumcision. Venipuncture and heel-stick procedure (for newborn screening) are also sources of pain in the nursery.

Pain scoring tools have been developed to assess pain in the newborns. Though neonates are unable to express pain verbally, they respond with behavioral cues which include facial expressions, body movements, and crying. The cry face, including brow bulge, gaping mouth and nasolabial folds, appear to be the most specific indicator of pain across gestational age (Stevens, Johnston, Petryshen, & Taddio, 1996). These observations were often included as a primary element in pain assessment tools. Physiological indicators are also included, such as increased blood pressure, heart rate, and oxygen desaturation. The infant’s inability to communicate in no way indicates the possibility that there is pain being experienced and appropriate pain management is in order (IASP, 2001).

The Premature Infant Pain Profile (PIPP) combines behavioral, physiological, and gestational age data to arrive at a pain score. It has been used in various research studies and is considered a reliable and valid instrument in large data sets (Stevens, Johnston, Petryshen & Taddio, 1996). The CRIES (Crying, Requires oxygen, Increased vital signs, Expression and Sleeplessness) is used to evaluate pain among preterm and term infants (32 to 56 weeks) with postoperative pain (Krechel & Bildner, 1995). The Neonatal Infant Pain Scale (NIPS) is widely used to measure behavioral signs of pain, including facial expression, crying, breathing patterns, movement of arms and legs, and state of arousal (Lawrence et al., 1993). Another tool with high inter-rater reliability and validity is used among infants between 2 months to 7 years of age is the FLACC (Face, Legs, Activity, Cry, Consolability) tool (Merkel, V oepel-Lewis, Shayevitz & Malviya, 1997). The FLACC tool also measures behavioral responses associated with pain.

Newborn screening involves testing the newborn for certain harmful or potentially fatal disorders that are not otherwise apparent at birth. Newborn screening programs in the U. S. began with Guthrie in the 1960s with a blood test that could determine whether newborns had the metabolic disorder phenylketonuria (PKU). Since then, other researchers have developed additional blood tests that screen newborns for other disorders. The procedure is done with a simple blood test via heel lance procedure.

There are pharmacologic and few non-pharmacologic (environmental and behavioral interventions) pain interventions developed to decrease pain. The environmental interventions include reduction of noxious stimuli and implementation of neurobehavioral supportive relationship-based care such as family-centered approach. Behavioral interventions include positioning (nesting, swaddling, maintaining flexed position, and postural support), non-painful sensory stimulation (massage, touch, rocking, talking, music, and visual stimuli), non-nutritive sucking, and sucrose with or without nutritive sucking. Non-pharmacologic interventions can reduce neonatal pain indirectly by reducing the total amount of noxious stimuli to which the infant is exposed; and directly by blocking nociceptive transduction or transmission, or by activation of descending pain-modulating system (Franck and Lawhon, 2000). Pharmacologic intervention such as topical anesthetics can effectively reduce pain from minor procedures such as a venipuncture, lumbar puncture, and intravenous catheter insertion among term and preterm neonates. These agents must be applied prior to the procedure for a sufficient length of time (usually 30 minutes for neonates). These are not effective for a heel-stick blood drawing because pain comes from the lancet and also from squeezing the heel to collect adequate amounts of blood for the procedure.

The name KC is derived from its similarities to marsupial caregiving, in which the prematurely-born kangaroo is guided into the mother’s pouch, where it is kept warm, contained, secure, and breastfed until maturation (Ludington-Hoe, Thompson, Swinth, Hadeed, & Anderson, 1994). In Kangaroo Care, the mother holds her baby close to her to allow self-regulating breastfeeding. The mother may do so while sitting or even reclined in a comfortable rocking chair that tilts to about a 60 degree angle (Anderson,
The uterine environment is simulated in KC, enhancing closeness, warmth, nutrition, relaxation, calmness and mutual caregiving between the mother and the infant. Additionally, the mother’s love, warmth and the choice for breast milk are all emphasized during Kangaroo Care (Martinez, Rey, & Marquette, 1992). These factors make KC unique from other mother and child interventions. It is economical and readily applicable in any setting, whether in a community or a hospital.

Studies by Gray, Watt, & Blass (2000) and Cong (2006) have shown that skin to skin contact between mother and child lessened the experience of pain during heel sticks in newborns. Two groups of newborn babies were randomly assigned to being held by their mothers or simply placed in a crib during a standard heel lance procedure. Results were found that crying and grimacing were reduced by 82% and 65% respectively from control infant levels during the heel lance procedure. Heart rate was also reduced substantially by KC.

Methodology

Research Design
The study employed a single-blind experimental design, involving two groups - intervention and control. Participants of the study were assigned to either control or intervention group by simple random sampling.

The dependent variables are the physiologic response of the neonates to KC, manifested by their heart rate and oxygen saturation taken before and after the intervention and the behavioral response as measured using the Neonatal Infant Pain Scale.

Research Site
Participants of the study were recruited from the Department of Pay-Patient Services and OB - Ward 15 of UP-PGH. Observation and monitoring of the neonates were done at the Breast Feeding Room of Ward 15 and the Milk Bank Area in coordination with the Newborn Screening Core Group of the hospital. The research protocol was reviewed and approved by the Ethical Review Board of the Expanded Health Research Office (EHRO).

Sampling
An average of 143 newborn screenings is conducted per month at the UP-PGH, according to the annual census examined by the Newborn Screening Core Group. Based on this number, a targeted sample size of 108 was derived using Slovin’s Formula at a 95% confidence level. The research protocol was explained and consent obtained once parent-participants agreed to be part of the study.

The following were the inclusion criteria used in recruiting neonates for the study: (1) Apgar score of at least 8-10 at 5 minutes; (2) no prior heel-stick procedures, except for routine vaccinations at birth, i.e., vitamin K or hepatitis vaccine; (3) relatively well babies, who do not require oxygenation or ventilation support, have no evidence of congenital abnormalities or medical complications, no medication exposure, i.e., paralytic, analgesic or sedatives, or have not had any surgeries; (4) born within 37-40 gestational age; (5) delivered normally (vaginally and spontaneous); (6) and within 1-3 days old as required for NBS.

Data Gathering Tool
Patient demographic information was gathered and recorded. The Neonatal Infant Pain Scale (NIPS) was used to measure pain experienced by the neonates with heel lancing. The NIPS is an established tool, and was developed at the Children’s Hospital of Eastern Ontario to measure pain among full term and preterm neonates (Lawrence et.al, 1993). The tool involves observing the neonates for behavioral cues
to determine their severity of pain. Neonates were scored from 0 (absence) to 2 (more severe) using six parameters: facial expression, cry, breathing patterns, arms, legs and state of arousal. The data gathering tool used in this study is shown in Appendix A.

### APPENDIX A

#### RESEARCH INSTRUMENT

**I. Demographic Profile**

Age of Gestation: _______ (M/F)

Apgar score at birth of baby: _______

Baseline vital signs of baby (prior to Kangaroo / Procedure)

HR: _____  **O2 Saturation:** _____

**II. Neonatal Infant Pain Scale (Done immediately after procedure)**

Parameters to be observed:

**Immediately After Heel-Lance:**

1. Facial expression □ relaxed (0 point) □ grimace (1 point)
2. Cry □ no cry (0 point) □ whimper (1 point) □ vigorous crying (2 points)
3. Breathing patterns □ relaxed (0 point) □ change in breathing (1 point)
4. Arms □ relaxed (0 point) □ flexed/extended (1 point)
5. Legs □ relaxed (0 point) □ flexed/extended (1 point)
6. State of arousal □ awake/sleeping (0 point) □ fussy (1 point)

Total score ___________

**One minute After Heel-Lance:**

1. Facial expression □ relaxed (0 point) □ grimace (1 point)
2. Cry □ no cry (0 point) □ whimper (1 point) □ vigorous crying (2 points)
3. Breathing patterns □ relaxed (0 point) □ change in breathing (1 point)
4. Arms □ relaxed (0 point) □ flexed/extended (1 point)
5. Legs □ relaxed (0 point) □ flexed/extended (1 point)
6. State of arousal □ awake/sleeping (0 point) □ fussy (1 point)

Total score ___________

**Three minutes After Heel-Lance:**

1. Facial expression □ relaxed (0 point) □ grimace (1 point)
2. Cry □ no cry (0 point) □ whimper (1 point) □ vigorous crying (2 points)
3. Breathing patterns □ relaxed (0 point) □ change in breathing (1 point)
4. Arms □ relaxed (0 point) □ flexed/extended (1 point)
5. Legs □ relaxed (0 point) □ flexed/extended (1 point)
6. State of arousal □ awake/sleeping (0 point) □ fussy (1 point)

Total score ___________

Where:

a. relaxed muscles (facial expression): restful face neutral expression
b. grimace: tight facial muscles furrowed brow chin jaw (negative facial expression – nose mouth brow)
c. no cry: quiet not crying
d. whimper: mild moaning intermittent
e. vigorous cry: loud scream rising shrill continuous (Note: Silent cry may be scored if baby is intubated as evidence by obvious mouth facial movements).
f. relaxed: usual pattern for the baby
g. change in breathing: indrawing irregular faster than usual gagging breath holding
h. relaxed/restrained: no muscular rigidity occasional random movements of limb
i. flexed/extended: tense straight rigid and/or rapid extension flexion
j. sleeping/awake: quiet peaceful sleeping or alert and settled
k. fussy: alert restless and thrashing

Neonatal Infant Pain Scale = SUM (points for the 6 parameters)

Interpretation:

l. minimum score: 0
m. maximum score: 7

**Post Heel-stick Vital Signs**

HR: _____  **O2 Saturation:** _____ Immediately after heel-lance

HR: _____  **O2 Saturation:** _____ One minute after heel-lance

HR: _____  **O2 Saturation:** _____ Three minutes after heel-lance
Scores of the 6 parameters are added and used to quantify the pain of each neonate. The higher the overall score, the more severe the pain is. The NIPS have been used in many studies dealing with venipuncture and heel lance procedures. It has an inter-rater reliability of 0.92-0.97 (Lawrence et al., 1993).

To minimize the subjectivity of scores, a limited number of observers (who were part of the research group) were closely trained. Observers were blinded when assigned to score the neonates, without them knowing whether the infant was in the control or intervention group. Also, neonates’ scores on the NIPS were taken at 3 time points: immediately, one minute, and 3 minutes after the heel stick. The physiological response to pain was measured using a pulse oximeter, providing the heart rate and oxygen saturation readings of the newborns. Physiologic response was also measured at the same 3 time points as the NIPS.

**Data Collection Procedure**

**Intervention Group**
Participants assigned to the intervention group used KC, requiring the mother to hold the infant prone and upright between her bare breasts while in a reclining position. KC involves skin-to-skin contact between mother and infant. The baby, wearing only a diaper and a piece of cloth covering the back, was held for 30 undisturbed minutes. After 30 minutes, the mother and the baby put on their clothes and the heel lance was done by the screener.

**Control Group**
In the control group, participants received routine care. The neonate was held by the mother in whatever way she preferred during the newborn screening. Both mother and baby retained their clothes on during the entire procedure.

**Results & Findings**

**Profile of the Participants**
Thirty-one neonates participated in the study, majority of whom were males (n=25, 80.64%) and the rest were females (n= 6, 19.36%). Of the research participants, seventeen (17) were a day old, twelve (12) were 2 days old, and two (2) were 3 days old.

![Figure 1: Neonatal Infant Pain Scale Immediately Following Heel Lance](image)

$t(31) = -0.018, p = .986, d = 0$

**Control Mean = 6.18, SD = 1.81**

**Intervention Mean = 6.18, SD = 1.64**

Figure 1 shows the distribution of the two groups in terms of the NIPS immediately after the heel lance. The distribution of the two groups appears consistent. The means of the groups were equal, with a $p$
value of 0.986 indicating no significant difference. Cohen’s $d$ was also 0, suggesting that the two distributions overlapped almost completely with an unremarkable effect size.

\[ t(31) = 1.76, p=0.088, d = 0.6 \text{ (38.2\% non-overlap)} \]

Control \hspace{1cm} Mean = 4.94, SD = 2.66
Intervention \hspace{1cm} Mean = 3.19, SD = 3.06

The distribution of the two groups one minute after heel lance using NIPS is shown in Figure 2. The control group yielded a higher mean than the intervention group, demonstrating that more neonates had higher pain scores for those who were not in the KC group. The two-tail $p$ value was 0.08, indicating no statistical significance.

\[ t(31) = 0.765, p = 0.45, \text{Cohen’s } d = 0.3 \text{ (21.3\% non-overlap)} \]

Control Mean = 2.82, SD = 3.15
Intervention Mean = 2.0, SD = 3.03

Figure 3 displays the distribution of the NIPS 3 minutes following heel lance. The control group had a higher mean (2.82) and standard deviation (3.15). However, this difference was statistically insignificant. The effect size was small based on a 21.3\% non-overlap in the distributions of the two groups (Cohen, 1992).
The distribution of the average heart rate (HR) of the two groups appears on Figure 4. The mean of the control (110.87) was lower than the mean of the intervention group (128.13). The standard deviation for the traditional group (22.71) was also lower than the KC group (46.4). Again, these differences were statistically unremarkable.

Figure 5 shows the distribution of the average oxygen saturation of the two groups. The mean oxygen saturation for the control group was 86.38, as compared to 87.58 in the intervention group. Cohen’s ef-
Effect size was small, with 14.7% non-overlap. These findings were not statistically significant.

**Discussion**

The behavioral pain response of infants, immediately after heel lance during newborn screening, yielded the highest pain score in both the control and intervention group, with an average of 6.18 out of 7 in the Neonatal Infant Pain Scale (NIPS). Differences between the control and intervention groups were observed in the pain score during the period of one minute ($p=0.088$) and 3 minutes ($p=0.45$), and after heel lance (38% and 21% of non-overlap in the distribution, respectively). However, these findings were not statistically significant. There are some reasons that can account for this outcome. The sample size ($n=31$) that the investigators were able to recruit during the course of the study was small. It is recommended that a larger sample size be considered in future studies. Another factor to take into account is breastfeeding. Several studies have confirmed the analgesic effects of breastfeeding during heel lance procedures (Iturriaga, Unceta-Barrenechea, Zárate, Olaechea, Núñez & Rivero, 2009; Shah, Aliwalas, & Shah, 2006; Shendurnikar & Gandhi, 2005). While the infants in this study have not been allowed to breastfeed during heel lance, the effect of breastfeeding prior to heel lance needs to be validated, whether it has any effect on the pain responses of neonates.

The positioning of infants during heel lance may also have affected the results. In the control group of this study, mothers were allowed whatever way they preferred to hold the infant during the heel lance. The prone position was found to be more significantly associated with deep sleep for preterm infants at baseline, i.e., prior to pain induction (Grunau, Linhares, Holsti, Oberlander & Whitfield, 2004). However, there was no difference between the pain responses of preterm infants in the prone or supine position during heel lance (Grunau et al., 2004). It is yet to be investigated whether this also holds true for healthy term infants. Limiting or prescribing a particular position for infants in the study should be also considered for future studies.

Another probable cause for the insignificant results was the sustainability of the effect of KC. After observing KC for 30 minutes, mothers and infants in the intervention group were asked to put their clothes back on prior to heel lance. This was done in order to blind the NIPS observer. However, the effects of KC cease once skin-to-skin contact between mother and infant is discontinued as demonstrated by prior research (Bohnhorst, Heyne, Peter & Poets, 2001; Gray, Watt & Blass, 2000; Bosque, Brady, Affonso & Wahlberg, 1995). This emphasizes the observance of continuous KC even during the heel lance procedure. Future studies should find alternative ways of blinding the NIPS observer or other options in preventing observer bias.

The largest effect size for the behavioral response was found to be at 1 minute, which is similar to findings of a previous study (Johnston et al., 2008) which showed that the effect of Kangaroo Care was not seen immediately after heel lance but 90 seconds after.

In terms of the physiological pain response, the mean heart rate (HR) and oxygen saturation of the control were observed to be lower than that of the intervention group. This difference was statistically unremarkable (HR $p=0.181$; O$_2$ saturation $p=0.674$). The results can be correlated with findings of a previous study suggesting that there was no statistically significant difference in the average heart rate and oxygen saturation of infants (Gray, Watt & Blass, 2000).

Caution should be considered when interpreting these findings because the study was limited to the average HR and O$_2$ saturation immediately after heel lance. The pulse probe used during the study did not constantly register the HR and O$_2$ values especially when the infants were crying and moving restlessly. It is recommended to utilize a more specific and accurate tool to assess physiologic pain parameters, such as using an ECG monitor or measuring levels of cortisol.
Conclusion

Kangaroo Care is a safe and effective way of reducing pain in newborns especially during routine heel lance procedures. This study has reiterated its benefit in reducing acute pain of infants undergoing newborn screening. It can be concluded that there is sufficient reason and evidence to consider including Kangaroo Care as a routine element of the care protocol when performing future heel lance procedures among neonates for NBS.

References


The Health Status of Filipino-Americans
Rayne M. Soriano

Introduction: Filipino-Americans are among the most diverse Asian American groups, with a mix of different cultures, languages, and religions. Similar to other Asian American groups, Filipino-Americans experience predispositions to certain health conditions and disparities.

Objectives: This paper describes the characteristics of the Filipino-American community, the diseases and health disparities that affect them, and some health care programs established specifically to focus on their needs.

Methods: A review of the literature was conducted to help determine the health conditions and issues faced by the Filipino-American community. The review included data sources from state and federal organizations tasked with studying health issues of Asian American communities.

Conclusions: There are some factors that predispose Filipino-Americans to experience certain chronic health conditions. There is also an issue in the presence of disaggregated data from existing literature, making it difficult to single out unique factors that cause these disparities. It is important that Filipino-Americans actively participate in research involving their health. This will provide a better perspective of their needs and concerns, consequently being able to develop more appropriate health care programs that address these conditions.

Keywords: Filipino, Filipino-Americans, Asian-Americans, health status, disparities
Introduction

The Philippines is a diverse country with people of different cultures, dialects, traditions and experiences. According to the Philippine Department of Tourism (2009), the Filipino is of Malay origin and with some having a mix of Chinese, American, Spanish and Arab ancestry. Filipinos speak two main languages, English and Filipino. Filipino, which is based on Tagalog, is the national language. English is widely used and is the medium of instruction in higher education. The Philippines has more than 111 dialects reflecting the subdivisions of regional and cultural groups, but a majority of Filipinos speak eight major dialects including Tagalog, Cebuano, Ilocano, Hiligaynon or Ilonggo, Bicol, Waray, Pampango and Pangasinense. The Philippine Tourism office further describes each regional group as recognizable by distinct traits and dialects, including the sturdy and frugal Ilocanos of the north, the industrious Tagalogs of the central plains, the carefree Visayans from the central islands, and the colorful tribesmen and religious Moslems of Mindanao. Tribal communities are also found scattered across the archipelago.

Filipinos belong to different religious groups and are predominantly Christian, with 82.9% Catholic, 5.4% Protestant, 4.6% Muslim, 2.6% Philippine Independent Church, and 2.3% Iglesia ni Cristo (Philippine Department of Tourism, 2009).

This diversity in traits and regional origin makes the Filipino quite different from each other, particularly when dealing with issues affecting the Filipino community.

Filipinos in the United States

Filipinos have a long history of migration to the United States and are dispersed and have settled throughout. According to Terrazas & Batalova (2010), Filipino immigrants are second only to Mexican, numbering 1.7 million in the United States. The Filipino population grew rapidly in the 1970s and 1980s and this continues to grow steadily since then. The United States is also home to 1.4 million Filipinos who are native-born U.S. citizens.

Filipino Migration to the United States

According to Asis (2006), the first group of Filipino workers moved to the United States on December 20, 1906. They moved to the U.S. territory of Hawaii, where they worked in the sugarcane and pineapple plantations. Since then, more single Filipino men migrated to Hawaii and others left to work in the farms of California, Washington, and Oregon. Some went to work in the salmon canneries in Alaska. Between growing seasons, Filipinos worked in low-wage service jobs like busboys, waiters, and domestic work. A small number of Filipino scholars, called pensionados, came to the United States before 1920. They were sponsored by either the U.S. government, missionaries, or by rich families in the Philippines. Migration of Filipinos to the U.S. was considered internal and they were classified as nationals (but not citizens) because the Philippines was a colony then. When the Tydings-McDuffie Law was passed in 1934, the Philippines was granted independence within a 10-year period and Filipinos became subject to immigration quotas totaling 50 visas per year. Despite this quota, the governor of Hawaii was able to bring in Filipinos due to labor shortages. Filipinos continued their migration to Hawaii as workers, military personnel, and war brides even through World War II. The biggest wave of Filipino immigration occurred in 1965 when the Immigration Act was passed, eliminating restrictions on nationalities coming to the United States (Asis, 2006).

Most of the Filipino workers who migrated to Hawaii came from the northwestern provinces of Luzon, where poverty and overpopulation were major issues (The Advocates for Human Rights, 2011). Filipinos also moved to California, Washington, and New York. Another driver for Filipino migration to the United States was the rise of Ferdinand Marcos as dictator in 1972, when many of his opponents fled the country.
By 2008, 26.5 percent of the 1.7 million foreign-born Filipinos entered the U.S. in 2000 or later, with 26.0 percent entering between 1990 and 1999, 24.6 percent between 1980 and 1989, 15.5 percent between 1970 and 1979, and the remaining 7.5 percent prior to 1970 (Terrazas & Batalova, 2010).

**Struggles of Filipino Immigrants**

Like other immigrant groups, Filipinos were stereotyped and faced discrimination and prejudice when they first settled in the United States. The Advocates for Human Rights (2011) highlighted the following events as examples of the struggles faced by Filipinos:

- A 1925 Supreme Court decision, Toyota v. United States, declared that only whites or people of African descent were entitled to citizenship. Unless they had served in the U.S. military, Filipinos were denied citizenship until 1946. The inability to acquire citizenship limited the Filipinos’ access to many professions and left them with no political representation. Additionally during the Depression Years, they could not qualify for federal relief since they were not citizens.
- In the 1930s, Filipinos living in the West Coast were often barred from swimming pools, movies, tennis courts, restaurants and barbershops.
- The first waves of Filipino migrants were primarily young, single, and uneducated men. These young men, often being alone and without any families, were often involved in immoral and lawless acts, particularly with the proliferation of casinos, dance halls, prostitution, and alcoholism during those early days.
- In the 1930s there were 14 Filipino men for every Filipina woman. Many Filipino men began courting Caucasian American women, which angered many. In some states, miscegenation laws forbade Filipinos to marry whites until the Supreme Court case Perez v. Sharp in 1948.

**Demographic Characteristics of Filipino-Americans**

Since 1970, only Mexican immigrants outnumber Filipino immigrants (The Advocates for Human Rights, 2011). According to Terrazas & Batalova (2010), Filipinos accounted for a large percentage of immigrants in the Western part of the United States with nearly half residing in California. More than one-third of the Filipino immigrants reside in three metropolitan areas including Los Angeles-Long Beach-Santa Ana, CA (16.5%), followed by San Francisco-Oakland-Fremont, CA (9.4%) and New York-Northern New Jersey-Long Island /NY-NJ-PA (9.1%). These three metropolitan areas accounted for 35.1 percent of the 1.7 million Filipino immigrants in the United States (Terrazas & Batalova, 2010).

Filipinos also accounted for 40.5 percent of all immigrants in the Honolulu, HI metropolitan area. They accounted for one-third (33.5%) of all immigrants in Vallejo-Fairfield, CA, and one-fifth (21.3%) of all immigrants in Virginia Beach-Norfolk-Newport News, VA. Other metropolitan areas with large concentrations of Filipino immigrants were San Diego-Carlsbad-San Marcos, CA (13.6% of all immigrants); Stockton, CA (13.6%); Jacksonville, FL (13.0%); San Francisco-Oakland-Fremont, CA (12.6%); Las Vegas-Paradise, NV (12.5%); Reno-Sparks, NV (12.5%); and Sacramento-Arden-Arcade-Roseville, CA (10%) (Terrazas & Batalova, 2010).

Of the 2.9 million members of the Filipino diaspora residing in the United States in 2008, 54.8 percent were born in the Philippines and 43.5 percent were born in the United States or in U.S. territories. The remaining 1.7 percent was born mainly in Japan, Germany, and Canada (Terrazas & Batalova, 2010).

**Socioeconomic Factors affecting Filipino-Americans**

In examining the Filipino-American community, it is important to highlight demographic and socioeconomic characteristics that include age, gender, English proficiency, workplace data, education, workforce and income Terrazas & Batalova, 2010.
Age Distribution of Filipinos
Of the Filipino immigrants residing in the United States in 2008, 5.8 percent were minors (under age 18), 62.0 percent were adults of working age (between 18 and 54) and 32.2 percent were seniors (age 55 and older).

Statistics on Gender
Although early Filipino immigrations were primarily single men, gender statistics since then reveal that nearly three of every five Filipino immigrants residing in the United States in 2008 were women (58.8%) while 41.2 percent were men when compared to all immigrants, where 49.8 percent were women and 50.2 percent were men.

Proficiency with English
The ability to speak English is an important factor when living in the United States. English, one of the official languages in the Philippines, greatly helps the immigrants’ acculturation experience. About 14.5 percent of Filipino immigrants age 5 and older reported speaking “English only” while 55.5 percent reported speaking English “very well.” A relatively small number (30%) reported speaking English less than “very well.” This was far below the 52.1 percent reported among all foreign-born who are age 5 and older. Most limited English proficient Filipino immigrants reported speaking Tagalog (86%). In 2008, a minority spoke Ilocano or Hocano (8.3%) or Bisayan (1.2%) which are indigenous languages in the Philippines, or other languages (4.5%) (Terrazas & Batalova, 2010).

When looking at language, it is also important to examine linguistically-isolated households that contain 14-year olds and older family members who have limited English proficiency. Figure 1 shows Filipinos ranking last among Asian-American groups in terms of being linguistically isolated.

![Figure 1: Percent distribution of linguistically-isolated households. (U.S. Census Bureau, 2005-2009 American Community Survey, 5-year estimates.)](image)

Educational Attainment
Educational attainment among Filipino-Americans shows that there are many who graduate from high school and go on to attend college when compared to other ethnicities and the general population. In the 2007-2009 American Community Survey conducted by the U. S. Census Bureau, Filipino-Americans
ranked 7th among 16 ethnic groups with 92% achieving a high school diploma while 46% getting a bachelor’s degree or higher.

Filipino-American Workforce
Terrazas & Batalova (2010) highlighted gender differences in the workforce when compared to other immigrants. Filipino-born women who were 16 and older were more likely to participate in the civilian labor force (76.5%) than foreign-born women overall (57.1%). They further explain that Filipino-born men were less likely to be in the civilian labor force (69.9%) than foreign-born men overall (80.5%). The American Community Survey (2008) showed that among the 491,000 employed Filipino-born male workers who were 16 and older, 15.5 percent reported working in health-care support occupations and 14.5 percent in construction, extraction, and transportation. It was also interesting that of the 666,000 Filipino-born female workers who were 16 and older, 22.9 percent reported working as registered nurses and 16.8 percent in sales.

Acclimating from the Philippines to the U.S. workforce presents challenges. Choy (2010) described the life and work of Filipino-American nurses to reconceptualize nursing biography in an international framework that is attentive to issues of migration, race, gender and colonialism. Hayne, Gerhardt, and Davis (2009) performed a descriptive study and examined strategies to facilitate the cultural adaptation, job satisfaction, and perception of role and social support of a group of recruited Filipino nurses. Results indicated that the investment in promoting the well-being of recruits in both social and work contexts positively benefits job satisfaction and extends into related areas of satisfaction and positive adaptation.

Poverty and Filipino-Americans
Along with workforce data, it is important to look at income to determine the resources and programs needed to help communities in poverty. Figure 2 shows that Filipino-Americans have the lowest poverty rates (6%) compared to other ethnic groups.

Poverty rates by ethnic group. (From U.S. Census Bureau, 2007-2009 American Community Survey, 3-Year Estimates)

Health Status of Filipino-Americans
Part of the assessment of the Filipino-American community is a scrutiny of their pressing health issues and trends. It is essential to determine causes of illnesses and identify factors that lead to the spread of disease. This will facilitate the identification and planning of strategies to prevent and address these
health concerns to help improve their quality of life. Filipino-Americans share the same issues as other Asian-American groups, including the lack of data about the population and increased incidence of certain disease conditions such as cancer, hypertension, diabetes, and mental health, as well as factors affecting their acculturation.

The Myth of the Model Minority
Like most Asian-Americans living in the United States, Filipinos also have to contend with the myth of being the model minority, despite the preponderance of health disparities. Chen & Hawks (1995) sought to demystify the perceptions and portrayals of the healthy Asian American and Pacific Islanders (AAPI) in order to understand existing health disparities in these communities. Their study presented three main reasons why the AAPI community is disadvantaged in comparison to other populations. These factors include the rapid increase in the AAPI population, lack of adequate data to describe the uniqueness in the various heterogeneous AAPI communities (respecting ethnic and gender differences), and the influence of media and societal factors in promoting the myth of the model AAPI. The Filipino-American population has grown rapidly since the 1980s (Terrazas & Batalova, 2010) and specific data about the population has not been adequate. Klatsky & Tekawa (2005) explained that, until recently, health status information has been generally reported only for other AAPI communities such as the Japanese and Chinese and available data suggested these groups to be generally in good health (p. 753).

Holland and Palaniappan (2012) maintain that “data on Asian American health, particularly for the Asian subgroups, are scarce and many health disparities for this population remain unknown.” They explain that errors in collecting data on Asian subgroups include omission, aggregation and extrapolation. Because of this lack of data, funding for research and interventions for Asian American health issues are consequently inadequate. Ghosh (2010) points out that “only 0.2% of federal grants involved Asian American and Pacific Islander health directly or tangentially” during the period 1986 – 2000 (p. 1381).

Beyond looking at Asian Americans based on ethnicity, it is vital to disaggregate data based on demographic and socioeconomic factors that are associated with health trends and behaviors. These factors are not exclusive as they relate to Filipino-American health and often appear in a combination of causes that add to the complexity in identifying issues and planning interventions.

Common Health Problems of Filipino-Americans
A literature search regarding the health of Asian Americans reveals common diseases, health behaviors, and issues within the Filipino-American population, including certain cancers, cardiovascular disease, diabetes, addictive behaviors and mental health concerns (Barnes, Adams, & Powell-Griner, 2008; Klatsky & Tekawa, 2005; dela Cruz, McBride, Compas, Calixto, & Van Derveer, 2002).

Age and Health
Many studies focus on the health status of adult populations. Javier, Huffman, & Mendoza (2007) examined health disparities as these relate to Filipino-American children. The authors summarize:

Filipino children are underrepresented in medical research. Studies that compare Filipino children and adolescents with white children or children of other Asian Pacific Islander subgroups suggest disparities with regard to gestational diabetes, rates of neonatal mortality and low birth weight, malnutrition in young children, overweight, physical inactivity and fitness, tuberculosis, dental caries and substance abuse (p. 1).

Brim, Rudd, Funk, and Callahan (2008) conducted a study to ascertain the prevalence of asthma among US children in racial minority subgroups who have been historically underrepresented in the pediatric asthma literature. These subgroups include American Indian & Alaskan, Chinese, Filipino and Asian
Indian children. Data from the 2001–2005 National Health Interview Survey of children aged 2 to 17 years were aggregated and analyzed to estimate the prevalence of current asthma, lifetime asthma, and asthmatic attacks according to race and place of birth. They found that children born in the United States had higher rates of reporting current asthma than those who were foreign born.

Filipino-American children share similar disparities with the adult population and need specific interventions that are age-appropriate in order to effectively prevent, manage, and intervene with health issues in this age group.

On the other side of the spectrum, health issues also affect the elderly Filipino-American population. Kim et al. (2010) explored the physical and mental health status in five subcategories of Asian Americans aged 60 and older, including Chinese, Japanese, Korean, Vietnamese and Filipino populations using data from the 2007 California Health Interview Survey (CHIS). The study revealed that Filipinos and Vietnamese have the poorest health status, generally having more physical and mental health problems than the Chinese, Japanese and Koreans. The results also showed the overall health status of the different older adult populations with higher rates of high blood pressure (68%), heart disease (21%) and psychological distress among Filipinos.

Disability exacerbates the effects of diseases among older adults and it is important to account for the rates and effects of disability in order to improve the lives of the elderly population. In a study by Fuller-Thomson, Brennenstuhl, and Hurd (2011), the 2006 American Community Survey results were used to assess the prevalence of four types of disability in the older AAPI subpopulations. Filipinos and Asian Indians were found to have higher odds of functional limitations (p. 96).

When elderly Filipinos get sick, their roles as caregivers within their respective families are likewise affected. Kataoka-Yahiro, Ceria, & Yoder (2004) examined this important role in a qualitative study where participants explained their caregiving role as an inherent element in grandparenting. This role is viewed less of a burden wherein families take on responsibilities as part of cultural practices, beliefs, and values such as pakikisama, utang na loob and authoritarianism. The participants defined pakikisama as family unity and closeness and utang na loob as mutual reciprocity or “the give and take” and obligation in relationships (p. 113).

Cancer among Filipino-Americans

Asian Americans in the United States are burdened with different types of cancers, which lead to health disparities when compounded with the lack of disaggregated data collection among this heterogeneous population. According to Chen (2005), the Asian American cancer burden is unique, unusual and unnecessary. He explains that it is unique because cancer is the leading cause of death for Asian Americans compared to all other races and ethnicities; it is unusual because of the infectious origins and the effects of acculturation; and it is unnecessary because of the missed opportunities for prevention through screening and education (p. 2897).

Liver cancer is among the top five leading diagnoses in the United States for male Chinese, Filipinos, Koreans and Vietnamese and the top causes of cancer deaths for male Chinese and Filipinos, but it does not appear among the top five diagnoses or causes of cancer deaths for non-Hispanic white males (Chen, 2005). McCracken et al. (2007) summarized available information on cancer incidence, mortality, risk factors and screening among Asian Americans, with special focus on 5 of the largest populations including Chinese, Filipinos, Vietnamese, Koreans and Japanese. They found that Filipinos have the highest morbidity and mortality rates from prostate cancer and the highest death rate from female breast cancer (p. 195).
Cancer and Nativity
Redaniel et al. (2009) examined the relationship between nativity and cancer as they compared the cancer survival rates between the Philippines and the United States. According to the researchers, this is the first comprehensive comparison of cancer survival of Filipino-American cancer patients with both cancer patients from the Philippines who have the same ethnicity, and Caucasians in the United States who share a similar societal environment and the same health care system. Researchers obtained 5-year relative survival rates for 9 common cancers using the Surveillance Epidemiology and End Results (SEER), database for Filipino-American data and databases from the Manila and Rizal Cancer Registries in the Philippines.

The study showed that survival estimates were much higher for Filipino-Americans than the Philippine resident population, with particularly large differences (more than 20–30% units) for cancers with good prognosis when diagnosed and treated early (colorectal, breast and cervix), or those with expensive treatment regimen (leukemia). Filipino-Americans and Caucasians showed very similar survival for all cancer sites except stomach cancer (30.7 vs. 23.2%) and leukemia (37.8 vs. 48.4%) (p. 859). This highlights the importance of screening and access to resources for early detection and interventions, which most developing countries do not have.

Cancer and Gender
The relationship between gender and disease is seen in breast cancer as it affects Filipino-American women. In a study by Ooi, Martinez, and Li (2011), data from population-based cancer registries in the Surveillance, Epidemiology, and End Results (SEER) program were used to evaluate the relationships between race & ethnicity and breast cancer stage, hormone receptor status, treatment and mortality. They found that Filipino women in general had the poorest outcomes compared to the other Asian subgroups in that they were more likely to present with advanced stage and with estrogen receptor (ER)/progesterone receptor (PR) related breast cancer (p. 735).

Early detection and screening are important in the prevention and management of breast cancer. Wu, Guthrie, & Bancroft (2005) described high rates of breast cancer diagnosed among Chinese, Filipino and Korean women and identified factors from the literature that lead to adherence with breast cancer screening. They found three studies that showed Filipino women being more likely to be examined for breast cancer if they have lived longer in the U.S. (Maxwell, Bastani, & Warda, 2000), had friends or relatives who favored breast cancer screening (Wu, Guthrie, & Bancroft, 2005), and that provider recommendation being the strongest predictor for screening (Maxwell, Bastani, Warda, 1997).

Hospice care at the end of life for cancer patients provides the resources and support for patients and families to assure that the patient’s experience during the terminal stage is as dignified and comfortable as possible. Ngo-Metzger, Phillips, and McCarthy (2008) performed a retrospective study of patients aged 65 and older who were dying with lung, colorectal, breast, prostate, gastric, or liver cancer in order to evaluate the use of hospice and length of stay in hospice of Asian American and Pacific Islander (AAPI) adults. They found that, overall, AAPIs had low rates of enrollment in hospice while Filipino-Americans had a longer median length of stay (32 days) compared to white patients (26 days) (p. 142).

Cardiovascular Issues
Another area of health concern for Filipino-American is cardiovascular disease, including hypertension, stroke, and heart disease. In a study by Holland, Wong, Lauderdale, & Palaniappan (2011), the prevalence of coronary heart disease (CHD), stroke and peripheral vascular disease (PVD) across Asian-American subgroups (Asian Indian, Chinese, Filipino, Japanese, Korean and Vietnamese) and non-Hispanic white (NHW) was compared. The challenges with obtaining data in the Asian American population were again reiterated. Researchers found that Filipinos and Asian Indians generally diverge from the other Asian subgroups, with both groups showing increased risks for CHD and Filipino women showing higher risks over-
all for stroke (p. 611). In an earlier study, Klatsky and Tekawa (2005) found similar patterns with Filipino women having higher rates of cardiac dysrhythmias, while Filipino men had higher heart failure risks than the Chinese, and Filipinos, in general, having the highest risks for Coronary Artery Disease (CAD).

**Mental Health Concerns**

Health issues can be attributed to stressors stemming from everyday discrimination in the Asian American population. Gee, Spencer, Chen, & Takeuchi (2007) examined the effects of self-reported everyday discrimination on chronic health conditions among Asian American subgroups that included Chinese, Filipino and Vietnamese participants. Each of these racial groups faced discrimination in the course of settling in the United States. Filipinos were found to be more likely to report discrimination and explaining the reasons to be related to race, ancestry or skin color. Overall, discrimination was found to be associated with indicators of heart disease, pain, and respiratory illnesses.

Napholz and Mo (2010) conducted a study to determine levels of role commitment, role conflict, depression, self-esteem, and life satisfaction among a community-based sample of working Filipino women. It was reaffirmed that the perception that Filipino working women as a model minority with few mental health concerns is a myth. The authors also identified significant relationships between type of role commitment, self-esteem, and depression. They found participants who were equally or more committed to work than relationships had significantly higher depression scores, self-esteem scores, and levels of education than participants who were committed primarily to relationships. In addition, researchers found that having a lower income contributed to higher depression scores regardless of relationship commitment (p. 190).

In order to further examine the mental health issues among Asian Americans, Sorkin, Nguyen, & Ngo-Metzger (2011) compared the prevalence rates of mental distress for Chinese, Filipino, South Asian, Japanese, Korean and Vietnamese older adults (aged 55 and older) to that of non-Hispanic whites. They also examined subgroup differences in utilization of mental health services. Their findings revealed that Filipinos and Koreans were more likely to report mental distress and were among the least likely to seek medical attention or take prescription medications.

In a similar study, Nguyen (2010) examined the way mental health needs affect physician contacts among older Asian Americans. The results of this study showed that respondents had seen a doctor an average of five times in the previous 12 months and 7% of the total respondents perceived that they had a mental health need. Perceiving a mental health need was associated with a decreased number of physician contacts for Filipino and Korean Americans. There is a concern that the decrease in physician visits leads to unmet medical problems, thereby exacerbating mental health issues (p.335).

The elderly have mental health issues that stem from living in the United States. Mui & Kang (2006) examined the association between acculturation stress and depressive symptoms in six groups of Asian immigrant elders including Chinese, Korean, Indian, Filipino, Vietnamese and Japanese. Findings suggest that about 40 percent of the sample were depressed, indicating a significant rate of depression. Further analysis indicated that acculturation stress caused by the elders’ perception of a cultural gap between themselves and their adult children was associated with high depression levels. Other predictors of depression were poor perceived health, stressful life events, religiosity, proximity of children, assistance received from adult children, and length of residence in the United States (p. 249).

**Filipino-Americans and Type 2 Diabetes**

Another chronic illness that affects the health of millions in the U.S. population is diabetes. According to the American Diabetes Association (2013), Type 2 diabetes affects millions of Americans and many are unaware they even have the disease. They explain that certain races are at higher risk of getting Type 2 diabetes, including African Americans, Latinos, Native Americans, Asian Americans, Native Hawaiians
and Pacific Islanders. While being overweight or obese usually increases the likelihood of having Type 2 diabetes, Asian Americans do not have to be overweight to be at risk. Being Asian and overweight significantly increases that risk for getting type 2 diabetes. Filipinos and Asian Indian subgroups have the highest prevalence rate of Type 2 diabetes.

Diet is a major factor in the prevention and management of Filipino health issues like Type 2 diabetes. First, the Filipino diet contains a lot of salt. *Patis* (fish sauce) is one of the most common ingredients in the Filipino diet. *Bagoong* (shrimp paste), anchovies, and anchovy paste and soy sauce are also popular ingredients. Despite the fact that Filipinos believe that eating less salt is better for their blood pressure and health in general, they are not likely to reduce their salt intake. Second, traditional Filipino foods include ingredients from a variety of cultures. Common Chinese ingredients such as oyster sauce are regularly used in Filipino cooking. vinegar, coconut milk, lime, tamarind, garlic, ginger, onion, and pepper are also key ingredients. The presence of Filipino and Asian supermarkets in American neighborhoods with large number of immigrants assure the availability of ethnic Filipino ingredients. Third, traditional Filipino dishes such as fried fish, roasted pork, pancit, lumpia, adobo, and desserts rich in sugar and starch are typical of the Filipino menu (Department of Health and Human Services, 2000).

**Filipino-Americans and Obesity**

Obesity is a high-risk health factor that leads to diabetes, cardiovascular disease, and stroke. When combined with other risk factors like smoking, alcohol, and sedentary lifestyles, obesity increases the likelihood of chronic disease (Centers for Disease Control and Prevention, 2012). According to the Office of Minority Health, Filipinos are 70% more likely to be obese compared to the overall Asian population (2012).

Novotny, Williams, Vinoya, Oshiro, and Vogt (2009) examined the effects of acculturation on diet and obesity in Asian and Pacific Islander hotel workers where 42% of the sample was Filipino. They found that 57% were overweight or obese (Body Mass Index >25). They highlighted that Asian and Pacific Islanders those born in the United States were 1.3 times more likely to be obese because of dietary changes brought about by acculturation. The longer a person stayed in the U.S., their intake of meat and sweet drinks became positively associated with the increased BMI.

**Tobacco and Alcohol Use among Filipino-Americans**

Dependence and addiction to substances afflict many people. Smoking and alcohol consumption is a health issue among Filipino-Americans. Maxwell, Bernaards, & McCarthy (2005) report the prevalence rates of cigarette smoking among a population-based sample of Chinese and Filipino-American adults together with rates found in other racial/ethnic groups. Filipino males were among the highest in prevalence compared to other Asian American groups, while Filipino females had a higher prevalence rate than Asian American females in general (p. 695).

Tang, Shimizu, & Chen (2005) used the 2001 California Health Interview Survey (CHIS) data to correlate English proficiency with smoking among Asian American adults. They found that the prevalence of smoking by Asian American males was three times that of females, with the highest rates seen in Korean and Vietnamese males. English proficiency seemed to have the effect of reducing smoking prevalence rates among Asian males but had just the opposite effect among Asian females (p. 2986). Despite the high English proficiency rates found in Filipino-Americans, the prevalence of smoking in their population leaves much to be improved.

Maxwell, Garcia, & Berman (2007) interviewed 318 Filipino-American men aged 40–75 in the Los Angeles County to gain a better understanding of their tobacco use as a first step toward developing a smoking cessation program. They found that many began smoking during their teenage years for various reasons, such as an effort to gain or show social status, for pleasure, to look mature and responsible, to
imitate others, and to pass away time. Respondents also blamed the strong presence and influence of the tobacco industry in the Philippines.

Alcohol is another common substance used socially that can readily lead to abuse and dependency. Kim, Kim, & Nochajski (2005) compared correlates of the 12-month prevalence of alcohol use disorders (AUD) between Filipino-Americans who currently drink alcohol and live in San Francisco or Honolulu. Results revealed that current drinkers from the two regions substantially differed in age, years of education, age at first drink, religiosity, ethnic identity, psychological distress, nativity status, as well as the prevalence of AUD. Further analysis showed that AUD risk factors were different for San Francisco current drinkers (higher psychological distress, U.S.-born, and lower religiosity) compared to Honolulu drinkers (more years of education and lower emotional support) (p. 214).

**Programs Addressing Filipino-American Health Issues**

In order to address issues in the Filipino-American community, ongoing data collection in disaggregate Asian American groups have to be supported and funded at all levels. As more trends and issues specific to Filipino-Americans are identified, community programs have been established in various locations to deal with these health issues.

The Bayanihan Clinic is a local example of a volunteer organization serving the Filipino-American community. In February of 2002, a group of four University of California Davis undergraduates recognized the need for a free clinic catering to the Filipino community, specifically the Filipino World War II Veterans. During the following months, a name was chosen, a mission statement was drafted, a major fundraiser was held and a physical site was chosen for the clinic. In August of 2002, the clinic was designated a non-profit organization. The Bayanihan Clinic is volunteer-run and operated and provides a variety of services including preventative services, referrals, social support and health education.

The Mabuhay Health Center opened to provide free health services and education to the underserved community in the South of Market (SoMA) District in San Francisco in December 2009. It was formed in partnership with the South of Market Health Center, the Bayanihan Community Center, and the University of California San Francisco. Their mission is to provide culturally-sensitive care to the community, specifically focusing on Filipino-Americans in need of health services. Free clinic services include health screenings, vaccinations, medication therapy management, health, and individualized patient care. With a lack of published health data about Filipino-Americans, the Mabuhay Health Center also conducts research studies in order to better examine health issues and chronic diseases affecting the Filipino-American community.

Aguilar et al. (2010) describe the formation of Kalusugan Coalition (KC), a Filipino-American health coalition based in New York City. Their website carries a description of the Kalusugan Coalition as a multidisciplinary collaboration dedicated to creating a unified voice to improve the health of the Filipino-American community in the New York/New Jersey area through network and resource development, educational activities, research, community action, and advocacy.

Ho, Muraoka, Cuaresma, Guerrero, & Aghbayani (2010) describe the Asian American Network of Cancer Awareness, Research, and Training (AANCART) with the goal of addressing cancer disparities in the Asian American population. The program was broad based but targeted breast cancer awareness efforts directed towards Filipino women. The initiative included involving the media, training of key community leaders, and the development of partnerships with health organizations with similar missions.

Addressing health issues of the Filipino-American youth is also a vital part of preserving the health of the community. Javier et al. (2010) describe the partnership between the Filipino Youth Coalition in San Jose, CA and Stanford University School of Medicine’s Pediatric Advocacy Program to address adolescent pregnancy prevention in the community. Their work highlights the importance of engaging unique
aspects of Filipino culture in building trust among stakeholders and participants to address the pregnancy issue. These factors include the importance of religion, acknowledging cultural values, and addressing intergenerational conflict between parents and teens into the program’s initiatives.

**Conclusion**

Filipino-Americans come from a diverse country with multiple languages, cultures, and beliefs. Filipino immigration to the United States can be described as a combination of triumph and tribulations as many Filipinos struggle to settle and assimilate in different communities to fulfill their dreams and build a future for their families. Filipino-Americans have health disparities, including growing rates of cancer, diabetes, cardiovascular disease, obesity and mental illness. Demographic and socioeconomic factors such as age, gender, and level of education emphasize the need for disaggregated data about Filipino-Americans. This is relevant in order to conduct more appropriate research and come up with meaningful and population-specific strategies to improve the health of this community. There are now some programs such as the Bayanihan Clinic and AANCART that focus on the health needs of the Filipino-American population. More of the same initiatives should be established. Filipino-Americans need to actively participate in more data collection to help capture the level of their health status and needs, and be able to contribute in the analysis and planning of more targeted and focused health programs.

**References**


Health beliefs and practices among urban adolescents: A pilot study
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Abstract

Introduction: Adolescence is a critical stage for the development of health promoting behaviors that impact and shape current and future health status. The adoption of positive health practices (PHP) by adolescents occurs in an environmental context heavily influenced by the sociocultural milieu.

Objective: A pilot study was conducted to identify and examine factors contributing to the health behaviors of urban adolescents. The purpose of this pilot study was twofold: (1) to evaluate the feasibility of performing a research study in this setting by assessing recruitment, enrollment, and survey administration strategies; (2) to evaluate the reliability of five tools to measure hypothesized relationships between health practices, social support, self-esteem, perceived stress, and optimism in urban youth.

Methods: A descriptive correlational research design was implemented. A convenience sample of youth from a high-poverty urban community completed five measurement tools: the Personal Lifestyle Questionnaire (PLQ), the Personal Resource Questionnaire (PRQ), Rosenberg Self-Esteem Scale (RSE), Perceived Stress Scale (PSS), and the Life Orientation Test (LOT). Descriptive statistics, tests for reliability, and correlational statistics were used to analyze the data.

Results: The pilot study demonstrated that a larger study would be feasible with modifications to recruitment, enrollment, and survey administration strategies. Four of the tools tested—PLQ, PRQ, RSE, and PSS—are reliable in this population (Cronbach’s α .681-.872) while the LOT requires further analysis to determine reliability. Relationships were identified between PHP and self-esteem (r=.470, p<.05), PHP and stress (r=-.486, p<.05), and stress and self-esteem (r=-.556, p<.01).

Conclusion: The feasibility study suggested areas for improving participation and survey administration. Four tools were found to be reliable in the pilot study. While relationships were identified among the variables, the sample size was limited and the data will be used to inform a larger study with adequate power.

Keywords: health promotion, urban adolescents, positive health practices
Introduction
The Centers for Disease Control and Prevention (CDC) addresses six critical types of adolescent health behavior that research shows contribute to the leading causes of death, disability, and social problems among adults and youth in the United States. These health behaviors are: (1) tobacco use; (2) unhealthy eating; (3) inadequate physical activity; (4) alcohol and other drug use; (5) sexual behaviors that may result in HIV infection, other sexually transmitted diseases (STDs), and unintended pregnancy; and (6) behaviors that contribute to unintentional injury and violence. Usually established during childhood, these behaviors persist into adulthood, are inter-related, and preventable. These harmful trends are of concern since adolescence, which is characterized by transitioning to independence and the adoption of decision-making skills, signifies a unique time in the development of long-term behaviors. During adolescence, individuals establish behavior patterns and make lifestyle choices that affect both their current and future health (CDC, n.d.). Helping adolescents develop life skills that promote healthy habits is essential to improving their health and longevity well into adulthood. Obtaining a better understanding of the factors influencing health practices in adolescence is a necessary first step in designing effective interventions to increase their knowledge and promote the development of positive health practices (Ayres, Mahat, Atkins, & Norris, 2013).

Background
Health practices are influenced by numerous social and environmental factors. Individuals living in disadvantaged conditions such as high-poverty neighborhoods are affected by health disparities defined as “a particular type of health difference that is closely linked with social, economic, and/or environmental disadvantage” (United States Department of Health and Human Services [HHS], Healthy People 2020, 2011). Health disparities result from a complex interaction of multiple but preventable factors and disproportionately affect underserved urban communities (Fiscella & Williams, 2004). The cumulative effects of social, economic, and environmental disadvantage, combined with limited resources and access to care, lead to poorer health outcomes throughout the lifespan (Gould Ellen, Mijanovich, & Dillman, 2001).

Health practices of the adolescents are also influenced by multiple developmental stressors that are exacerbated when living in poor conditions (Vacek, Coyle & Vera, 2010). Adolescents in distressed environments such as high-poverty urban communities are adversely affected by limited access to health care, carry a greater disease burden, and have a higher risk of injury (Atkins, Bluebond-Langner, Read, Pittsley & Hart, 2010; Fiscella & Williams, 2004). The role and impact of social, economic, and environmental factors must be studied and understood to improve the health promoting behaviors of adolescents (Atkins, Bluebond-Langner, Read, Pittsley & Hart, 2010; Fiscella & Williams, 2004; Ompad, Galea, Caiaffa & Vlahov, 2007).

Health practices as defined by Pender (2006) includes “activities motivated by the desire to increase well-being.” Health promotion emphasizes behavioral change to reduce disease risk and burden, and reflects a positive approach to healthful living. Adolescents’ health promoting behaviors are affected by numerous individual and environmental factors and must be considered in the youth’s social and cultural context (He et al., 2004; Pender, Murdaugh & Parsons, 2002). For example, social support, optimism, self-esteem, and stress, along with eight other attributes, have been identified as predictors of positive health practices in a meta-analysis conducted by Yarcheski et al. (2004). In addition, factors such as language, interpersonal behavior, cultural background, and barriers to health care impact individual perceptions and behavior (Srof & Velsor-Friedrich, 2006).

Study Purpose
Recognizing that research in a high poverty urban environment would be confronted by unique challenges, a pilot study was designed and implemented to evaluate the feasibility of conducting a larger
study that would identify and examine factors contributing to the health behaviors of adolescents living in a high poverty urban community. Specifically, the aim of this pilot study was twofold: (1) to evaluate the feasibility of performing a research study in an urban community summer program by assessing recruitment, enrollment, and survey administration strategies; (2) to evaluate the reliability of five tools to measure hypothesized relationships between health practices, social support, self-esteem, perceived stress, and optimism in urban youth.

Specifically, the research questions in this pilot study included:

1. What are the barriers to recruitment and how can they be addressed?
2. What are the barriers and facilitators to subject’s participation in the study?
3. What measures for each variable demonstrate adequate reliability?
4. What response burdens are associated with each measure?

Pilot Studies
Stewart (2007) indicates that an important objective of a pilot study is to obtain effect size data for a power analysis to estimate sample size and appropriately inform the strength of the relationships. However, this pilot study will not guide power calculations for a proposed larger study because estimates of population effect sizes based on very small samples are known to be biased. Since pilot study effect size is an inaccurate estimate of true effect size, using inaccurate pilot study effect size could have two results: (1) the true effect size will often be understated and the main study aborted even when the true effect size is clinically significant; (2) the inaccurate pilot study effect size that justifies the main study may overestimate the true effect size underestimating the sample size for the main study and under powering the study (Kraemer et. al., 2006). Therefore, an estimation of effect size was not obtained due to the purpose of this feasibility study and the size of the sample.

Methods
A descriptive correlational research design was implemented to address the research questions. Following approval of the university’s institutional review board and the community partner, a convenience sample of 20 low-income urban youth participating in a six week urban summer program was recruited to participate. Recruitment of participants began upon receipt of approval by the university’s Institutional Review Board and continued until the day of data collection. In preparation for the study, the researchers participated in several informational sessions with the students. The purpose of the study was discussed as well as the eligibility criteria for potential participation. Students who met the delimitations of the study (individuals between the ages of 10 and 15 with the ability to read and write English and in attendance on the days of distribution and collection) were given parental consent and student assent forms to take home for parental permission. A total of 245 youths were given information packets that included information about the study, a parental consent form, and student assent form. The researchers attended numerous information sessions with the students to discuss the study, answer questions, and collaborate with program staff.

After obtaining their completed consent and assent forms, students were given a packet of five questionnaires and a demographic form. Students completed the survey questionnaires in the meeting area and returned them to the investigators.

Instruments
The Personal Lifestyle Questionnaire
The Personal Lifestyle Questionnaire (PLQ) is a 24-item self-administered instrument used to measure the positive health practices of individuals (Brown et al., 1983). The PLQ consists of six subscales
including exercise, less substance use, nutrition, relaxation, safety, and general health promotion. The PLQ is a 4-point summated rating scale with a total range of possible scores from 19 to 76; higher scores reflect the practice of more positive health behaviors. Each subject responded to a total of 19 items on the PLQ. Studies using this instrument demonstrated appropriate coefficient alphas as a measure of reliability. In addition, the findings of those studies have been consistent with the theoretical literature (Ayres, 2008; Ayres, Atkins, & Lee, 2010; Ayres, Atkins, & Mahat, 2010; Ayres, Mahat, Atkins, & Norris, 2013; Ayres & Mahat, 2012). For example, coefficient alphas ranging from .72 to .82 were reported by Mahon, Yarcheski, and Yarcheski (2002), Ayres, Mahat, Atkins & Norris (2013) and Ayres, Atkins, & Lee (2010) for the PLQ when used with adolescents. In the present sample, the coefficient alpha was .68.

Rosenberg’s Self-Esteem Scale (RSE)
Developed by Rosenberg (1965), the Rosenberg Self-Esteem Scale is a 10-item instrument that measures self-esteem. The self-administered instrument has a 4-point Likert-type scale with possible scores ranging from 1 (strongly agree) to 4 (strongly disagree); the higher the score, the higher the self-esteem. Studies using this instrument demonstrated appropriate coefficient alphas as a measure of reliability (Ayres, Atkins, & Mahat, 2010; Mahat & Scoloveno, 2001; McNicholas, 2002). In the present sample, the coefficient alpha was .79.

The Personal Resource Questionnaire 85-Part 2
The Personal Resource Questionnaire (PRQ85-Part 2) (Brandt and Weinert, 1981) is a self-administered 25-item instrument that measures relational provisions in Weiss’s (1974) definition of social support with subscales representing intimacy, social integration, nurturance, worth, and assistance. This questionnaire has a 7-point Likert-type scale with possible scores ranging from 25 to 175; higher scores indicate higher perceived social support. Studies using this instrument demonstrated appropriate coefficient alphas as a measure of reliability. In addition, the findings of those studies have been consistent with the theoretical literature (Ayres, 2008). Previous research (Ayres, Atkins, & Mahat, 2010; Ayres, Mahat, & Atkins, 2012; Ayres & Mahat, 2012; Ayres, 2008; Mahat & Scoloveno, 2001; Mahat et al., 2002; Mahon et al., 2004; Yarcheski, Mahon, & Yarcheski, 2001) has reported coefficient alphas ranging from .76 to .92 for the PRQ85-Part 2 in adolescents. In the present sample, the coefficient alpha was .87.

Perceived Stress Scale
The Perceived Stress Scale (PSS), developed by Cohen and Williamson (Cohen & Williamson, 1988) is a ten item self-report tool that assesses an individual’s perception of stress and their view of life’s events as stressful. The PSS is a commonly used tool that has demonstrated correlations with various risk and health promoting behaviors. The 10 items measure the level of currently experienced stress and the individual’s perception of the unpredictability and uncontrollability of life events. The tool has a range of scores from 0-40; higher scores indicate higher levels of perceived stress. The PSS was initially developed as a 14-item instrument and was tested in three samples with coefficient alphas ranging from .85 to .87 (Cohen, Karmack, & Merzelstein, 1983). In the present sample, the coefficient alpha was .79.

The Life Orientation Test
The Life Orientation Test (LOT) is a 12-item (including four filler items) self-report instrument that assesses dispositional optimism defined as generalized outcome expectancies conceptualized by Scheier and Carver (1985). The five-response format has a range of scores from 0 to 32; higher scores indicate higher levels of optimism. Within the past decade, numerous studies have been performed using this instrument demonstrating appropriate coefficient alphas as a measure of reliability. In addition, the findings of those studies have been consistent with the theoretical literature (Ayres, 2008). For example, Goodman, Knight, and DuRant (1997) and Mahon and Yarcheski (2002) reported coefficient alphas ranging from .58 to .78 in samples of adolescents. In the present sample, the coefficient alpha was .19.
Results

Feasibility Study

This pilot study’s findings are based on a small sample size that, while sufficient to address the research questions, provided data with limited generalizability. Participants consisted of 20 urban youths aged 10-15 years. The pilot study demonstrated that a larger study would be feasible with modifications to recruitment, enrollment, and survey administration strategies. Several barriers to a larger study were identified in the feasibility component of this pilot.

Barriers to recruitment included the spontaneous nature of a summer program, the limited time available for recruitment efforts due to extensive off site programming, and the need for continual reinforcement with staff to follow through on-site.

Barriers to participation included a lack of exposure to community health research among the adolescents and families, logistical difficulties within the program, inconsistent attendance, and limited time for participation in the study during the summer program schedule. The information sessions at the summer program served to demystify the research process and familiarize the youths with the investigators. Recognizing the sporadic nature of attendance at the program, the investigators collaborated with staff to facilitate the distribution and collection of consent forms in four days distributed over the course of two weeks with the intention of providing the youths with multiple opportunities to participate. At each of these sessions, the youths were given another packet to take home if the initial one was lost. Repeated efforts to increase participation were only somewhat effective. Of the 245 youths recruited to participate, 21 returned the completed consent and assent forms; one of the participants withdrew from the summer program the next day leaving a total of 20 students eligible to participate.

Multiple barriers also affected the process of data collection. Due to the impact of numerous pre-scheduled activities, the investigators were only able to engage in data collection on a single day. To facilitate the collection of data, the investigators visited three separate locations during times that were convenient for the participants and staff. To minimize fatigue and response burden, questionnaires were intentionally ordered with the longest one administered last and participants were encouraged to work at their own pace. To allow for minimal impact on programming, the questionnaire packets required less than 30 minutes to complete.

Tool testing

Descriptive statistics for the study variables of positive health practices, self-esteem, social support, stress, and optimism are presented in Table 1. Four of the tools tested, the PLQ, RSE, PRQ, and PSS were shown to be reliable in this sample (Cronbach’s $\alpha$ .681-.872) while the LOT requires further analysis to address the tool’s reliability in this population.

<table>
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<th>Study variables</th>
<th>Possible scores</th>
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<th>SD</th>
<th>$\alpha$</th>
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<td>18.80</td>
<td>6.68</td>
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<tr>
<td>Optimism</td>
<td>0-40</td>
<td>23-38</td>
<td>20.00</td>
<td>2.94</td>
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</table>

Table 1: Descriptive statistics for the study variables of positive health practices, self-esteem, social support, stress, and optimism
The results of the pilot study indicate that the 19 item PLQ would reliably measure positive health practices in a larger study (Cronbach’s α=.73). The PLQ subscale items of physical activity, less substance use, nutrition, relaxation, safety, and general health promotion were not analyzed as separate measures in this pilot.

The RSE used to measure the variable self-esteem was shown to be reliable (Cronbach’s α=.79). Scores of 15-25 and greater are considered normal self-esteem; the mean score in this sample was 20.3 (SD=4.60).

The PRQ-85 Part 2, which was selected to measure the variable social support, was shown to be a reliable instrument in this sample (Cronbach’s α=.87). The PRQ subscale items of intimacy, social integration, nurturance, worth, and assistance were not analyzed as separate measures in the pilot.

Analysis of the PSS, a measure of perceived stress, demonstrated reliability in this sample (Cronbach’s α=.79). However, the tool used to measure optimism—the 12 item LOT— was not found to be a reliable (Cronbach’s α=.19). Further analysis of the tool is required to interpret the data; the difficulty level of questions, use of several filler questions, and reverse scoring may have increased the response burden.

**Additional Findings**

Pearson correlations were used to test hypothesized relationships between positive health practices, social support, self-esteem, perceived stress, and optimism in urban youth. Given the small sample size of the pilot study, the correlational analysis primarily functioned to identify areas for exploration in a full study. Results are presented in Table 2.

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<th>Correlation Matrix of Study Variables (N=20)</th>
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*p<.05, one-tailed  
**p<.01, one tailed

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<th>Table 2: Correlational Matrix of Study Variables (n=20)</th>
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Positive correlations were found between positive health practices and self-esteem (r=.470, p<.05), self-esteem and optimism (r=.386, p<.05), and social support and optimism (r=.506, p<.05). Negative correlations were found between positive health practices and stress (r=-.486, p<.05), and stress and self-esteem (r=-.556, p<.01).

These relationships are consistent with findings reported in previous research. Several studies have
identified positive relationships between positive health practices and self-esteem in adolescents (Ayres, Atkins & Mahat, 2010; Yarcheski & Mahon, 1989; Yarcheski, Mahon & Yarcheski, 2003) and adults (McNicholas, 2002); self-esteem and optimism in adolescents (Ayres, Atkins & Mahat, 2010; Puskar et al., 2010); and social support and optimism in adolescents (Ayres, Atkins & Mahat, 2010; Ayres & Mahat, 2012) and adults (McNicholas, 2002). Previous research has identified negative relationships between positive health practices and stress among adolescents (He et al., 2004) and stress and self-esteem (Wilburn & Smith, 2005).

**Conclusions**

The pilot study considered the feasibility of undertaking research in an urban summer program for adolescents and evaluated the reliability of selected tools to measure hypothesized relationships among study variables. Strengths and weaknesses in the procedures of recruitment and enrollment were identified. The investigators encountered a broad range of barriers to implementing research in this setting. Strategies for facilitating a larger study were identified. Five tools were tested in the measurement of the variables of positive health practices, self-esteem, social support, stress, and optimism. Four tools—PLQ, PRQ, RSE, and PSS—were found to be reliable in the pilot study. Data on the fifth tool—the LOT (optimism)—indicate a need for further testing. While relationships were identified among variables, the sample size was limited; the data will be used to inform a larger study with adequate power. The findings, while limited in generalizability, indicate that the tools tested in this sample are reliable for future research.

**References**


Health beliefs and practices among urban adolescents: A pilot study


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