Capstone Project Paper:
Evidence-Based Community Interventions
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Abstract

Los Angeles County is the largest populated county in the United States and accounts for 27% of California’s overall population. Within those numbers, coronary artery disease is the leading cause of death and premature death. Interventions, based on determinants of health, can be developed to address different risk factors for coronary artery disease in order to lower overall rates in Los Angeles County. Children ages 5 to 18 years old are a target population for a variety of public school based interventions including teaching, screening, and alternative elective courses. These interventions will be proposed to the Los Angeles County School District in order to enact new health policy.

*Keywords:* LA County, CAD, CAD risk factors, children, exercise
Implementing health policy is a significant step toward improving national health. Preparing primary, secondary, and tertiary interventions (Hunt, 2013) for threats to health are vital to the fight against chronic diseases such as diabetes, hypertension, and obesity. By preventing these diseases, other conditions, such as coronary artery disease, may be avoided altogether. Evidence-based research must be reviewed in order to prepare and implement best-practice health policy within the community. In order to understand the needs of the community, a thorough investigation into a specific county’s health statistics can provide the basis for determining areas requiring intervention.

Los Angeles (LA) County is both the largest county in California and the United States. It is approximately 4,084 square miles in size; the mainland coastline of LA County is 75 miles long and borders the Pacific Ocean. It is comprised of 88 cities with both urban and rural communities. The LA County population is 9,866,194 and represents 27% of California’s overall population of 37,691,912. LA County also includes two islands off the west coast, San Clemente and Santa Catalina (“Key Indicators,” 2013; “Overview,” 2013).

LA County is the largest employer in its five-county region, providing approximately 32,000 positions in law enforcement and justice departments, 29,000 in health services, and 21,500 in social services (“Largest Employers,” 2013). Large corporations in LA County include but are not limited to: University of California Los Angeles (UCLA), University of Southern California, Target Corporate, Kroger Company, Bank of America, Cedars Sinai Medical Center, Boeing Company, and Walt Disney Company. LA County hosts a plethora of health care facilities and boasts some of the top hospitals in the nation including the Ronald Reagan UCLA
Medical Center and Cedars Sinai Medical Center (“Licensed Hospitals,” 2013; “Best Hospitals,” 2013).

In LA County, approximately 16.3% of residents live below poverty level, which is higher than the state average of 14.4%. About 76% of LA County’s constituents above the age of 25 have obtained a high school diploma, which is lower than the 80.8% state average. Households with members above the age of five that do not speak English are around 57% in LA County and 43% statewide (“State & County QuickFacts,” 2013).

In order to truly understand a county’s strengths and opportunities for success, in regards to county-related health, a thorough analysis of health indicators is essential. After systematic review of the 2013 County Health Status Profiles for the state of California, a common strength was found throughout LA County. Consistently, LA County either meets or exceeds in accomplishing Health People 2020 goals for maternal and child health. LA County leads the way with 85.9% of births within the first trimester involved in prenatal care for all races, compared to 83.3% statewide. LA County is rated below the Healthy People 2020 goals for both all-race infant mortality and low birth weight infants, 5.1 (per 1,000) and 7.2 (per 1,000), respectively (“County Health Status,” 2013).

Along with strengths come areas needing improvement. For LA County, there are three significant leaders compared to statewide averages: death caused by female breast cancer, reported AIDS/HIV cases in persons over 13 years of age, and coronary heart disease as cause of death (“County Health Status,” 2013). Female breast cancer deaths average 22.9 in LA County and 22.8 in the state of California (all values per 100,000), HIV/AIDS cases average 14.0 with a state average of 9.7, and the coronary heart disease rate is at 129.1 countywide and 117.2.
statewide. Other areas needing improvement include: chronic liver disease, diabetes, and influenza and pneumonia cases (“County Health Status,” 2013).

For this evidence-based community intervention proposal, the health indicator coronary heart disease (also known as coronary artery disease, or CAD) will be the primary focus. CAD represents 22% of deaths and is also the leading cause of death and premature death in LA County (“Mortality in Los Angeles,” 2012). Because of the significant gap between statewide and countywide numbers reported in the county health profile, it is apparent that community intervention is vital. There is extensive research regarding modifiable risk factors for CAD that can be implemented within the community. Although nonmodifiable risk factors exist in CAD, the community can still be privy to strategies that help slow or prevent CAD onset. In order to address areas that need support, the contributing factors must be identified. These factors are known as the Determinants of Health.

Defined by the World Health Organization (WHO) and Healthy People 2020, the Determinants of Health model asks two questions: What makes some people healthy and others unhealthy, and how can we create a society in which everyone has a chance to live long, healthy lives? In order to answer these questions, a variety of focus areas have been narrowed down including social and economic environment, physical environment, and personal factors that influence health status. The circumstances of the individual’s life will determine the status of health. A sample selection of evidence-based determinants, published by WHO, involve transport, food and agriculture, housing, industry, and water. Considering these determinants of health, the nurse can better identify appropriate nursing interventions for the community (“Determinants of Health,” 2013; “Health Impact,” 2013).
An array of determinants contributes to CAD integrating human biology, the health systems, environment, and lifestyle. Current evidence-based research supports a genomic approach to risk factors for CAD. Within the last few years, studies have concluded a “polygenic causation” of CAD. A total of 23 loci have been discovered that link to an increased CAD risk (Padmanabhan, Hastie, Prabhakaran, & Dominczak, 2010; Roberts, Chen, Wells, & Stewart, 2011). Not only does a genetic predisposition to CAD exist, but also elevated body mass index (BMI) in ages 7 to 17 years has been linked to CAD later in life (Owen et al., 2009). Owen et al. (2009) concluded that long-term control of BMI, beginning in childhood, might be significant in reducing the risk of CAD.

Research conducted by Almeida et al. (2010) and Loucks, Almeida, Taylor, and Matthews (2011) support the proposal that childhood environment and parental emotional care during childhood are tied directly to a risk of CAD within 10 years. Almeida et al. (2010) determined quality of parental emotional care was inversely associated with CAD risk in females, but not males. It was concluded that further research was needed to determine early childhood psychosocial environment in relation to CAD risk. Loucks et al. (2011) continued this concept and concluded there was an association between family environment during childhood and a 10-year CAD risk. Contributing factors leading to a higher risk for CAD include smoking and lower high-density lipoprotein cholesterol that are influenced by a household of lower education and depression (Almeida et al., 2010; Loucks et al., 2011).

Lastly, research supports the concept that health systems and services have an impact on cardiovascular disease risk factors. A study conducted by Brooks et al. (2010) sought to compare people without health insurance, compared to those with, in regards to receiving less care for chronic conditions, and if they experienced a higher mortality rate. It was determined that
uninsured patients received less treatment and control of chronic conditions, and that increasing the number of insured patients may be a way to improve treatment and control of cardiovascular disease risk and reduce health inequalities (Brooks et al., 2010).

After thorough analysis of evidence-based research, appropriate population subgroups to target are school-age children and adolescents. Based on current journal articles and statistics, children and teenagers are the most vulnerable population in relation to developing CAD later in life. BMI has a direct correlation with potential CAD onset (Owen et al., 2009), and obesity rates for school-age children are increasing while adolescent obesity is at 18% (Hunt, 2013). When also considering genetic predisposition (Padmanabhan et al., 2010; Roberts et al., 2011) and potential home environment (Almeida et al., 2010; Loucks et al., 2011), it is apparent that children ages 5 to 18 years are a prime focus group for CAD risk factor modification intervention. In nursing diagnosis format, it can be stated that children ages 5 to 18 are at risk for CAD later in life related to elevated BMI, potential genetic predisposition, and possible negative home environment.

Primary intervention strategies for the prevention of CAD are implemented in order to avoid the initial occurrence of the disease process. Approaches can include health teaching, health promotion, and counseling (Hunt, 2013). Primary interventions for children ages 5 to 18 are health and nutrition classes, guidance counselor availability, and healthier meal choices at lunch. Eckman et al. (2012) conducted a study that determined incorporating educational programs improved disease-specific knowledge and prompted patients to become involved in self-care. These interventions are directed toward community members, public officials including school board members, and funding sources. The community (or school) nurse will
work alongside the educators and school board to develop an appropriate curriculum to be applied in the classroom.

Interventions based on the secondary level of prevention intend to serve as early identification and treatment of the disease process to limit harm to the individual (Hunt, 2013). In order to detect CAD risk factors early, the nurse will perform health assessments and screenings including blood pressure and BMI. Both hypertension and obesity are risk factors for CAD (Hall & Lorenc, 2010) and early identification can direct individuals to appropriate lifestyle modifications. Stakeholders involved in this particular intervention include the community members and health care providers.

The final level of prevention, tertiary, means to return the individual to an ideal state of health after illness (Hunt, 2013). After review of individual’s screening results, a more hands-on approach can be taken with those who are at risk for CAD. Research supports exercise and diet modification as having a positive effect on weight loss (Fröhlich, Pott, Albayrak, Hebebrand, & Pauli-Pott, 2011; Gueugnon et al., 2012). Based on current evidence-based research, a more tailored exercise class can be offered to those at risk. The physical education teacher, nurse, and school board can determine a suitable curriculum that monitors compliance, treatment effects, and prevents further negative impacts on students’ health. Many individuals are stakeholders in this intervention, including community members (students and families), public officials, and health care providers. The nurse will follow-up after course completion to determine the effectiveness on individual health status.

These health policies can have a positive impact on public health and healthcare (Brownson, Seiler, & Eyler, 2010). There are multiple advancements in public health that are due to policy, for example, seat belt laws and regulations regarding workplace exposure to hazardous
materials (Brownson et al., 2010). Guidelines are put in place based on current evidence-based practices, similar to a nurse’s responsibility to seek out best practice research in order to improve his or her patient care. Extending this concept and applying it to LA County health can have positive influences.

Considering research supports the proposal that the most vulnerable population, regarding risk for CAD, is children 5 to 18 years of age, health policy should look to influence both public schools and public youth programs (Almeida et al., 2010; Loucks et al., 2011; Owen et al., 2009; Padmanabhan et al., 2010; Roberts et al., 2011). Although primary and secondary interventions are important in the fight against CAD, tertiary interventions must also be put in place for children with the highest risk for the development of the chronic condition.

The tertiary intervention proposal is an elective physical education course that is offered to only those meeting the eligibility requirements. Based on evidence-based research, children at risk are those with an elevated BMI and hypertension (Hall & Lorenc, 2010), possible genetic predisposition (Padmanabhan et al., 2010; Roberts et al., 2011), and an unsupportive home environment (Almeida et al., 2010; Loucks et al., 2011). Because genetics and home environment cannot be appropriately and adequately measured, students meeting the BMI and hypertension values would be eligible for this particular elective course. Physical education instructors, school board members, and school nurses would be involved in developing course curriculum in order to meet students’ needs. The course would include athletics that can be extended to a lifestyle that is easily achieved. Activities like walking, jogging, basketball, or tennis will be introduced and developed within the student population. By targeting this group, the aim is to intervene before CAD develops.
The goal of this curriculum is to lower both BMI and hypertension values through exercise (Fröhlich et al., 2011; Gueugnon et al., 2012) and help students develop healthy and active lifestyles outside of school. By addressing risk factors early in life, it stands to reason that CAD in later life will either cease to develop or slow in its progression. CAD is the most prevalent cause of death in LA County (“Mortality in Los Angeles,” 2012), and it should be a primary target for community health.

Opposing factors must be attended to in order to successfully enact health policy. While developing curriculum, all parties must address funding sources for this program. Educators for the course must be appointed, any outside sources and supplies should be established, and extenuating circumstances should be anticipated. Support from the school board and community would also be beneficial in proposing this specific tertiary intervention. Once fully developed, the new course will be proposed to the LA County school district and then put into action for the following year.

This specific tertiary intervention is a first step in addressing risk factors for CAD in children. In order to defeat CAD as a leading cause of death, it must be stopped at the beginning stages. Children’s health is a priority in LA County, but that strength should not stop at infancy. Protection and prevention must carry through an individual’s entire life, and children are the future of California. Strides must be taken to begin to improve health in LA County if the rates of CAD as a cause of death are to be lowered. Many interventions may come to pass in the future, but the time for a healthier LA County is now.
References


