Cardiac Health Education and Policy Implementation: Implications for Educating the Long-Term Cardiovascular Effects of Excessive Adolescent Alcohol Consumption

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Abstract

The context of this paper is set within my life journey as a hospital worker while studying in the Master of Education program, where I had the opportunity to broaden my knowledge of cardiology and apply my graduate training. I learned that certain factors impact cardiovascular health including excessive alcohol consumption, which raises concerns about cardiovascular disease. My interest in this topic began with the rising cardiovascular health issues that I have seen in adolescent patients. The significance of this topic is the long-term cardiovascular effects of adolescent alcohol consumption. Excessive amounts of alcohol consumption increase the risk of cardiovascular disease. Key stakeholders including teachers, educational support staff, counsellors, school administration, and parents can make an impact through education. Key stakeholders need to be accountable to provide education to adolescent students about the risks associated with cardiovascular disease from alcohol consumption. I argue that ongoing cardiac health education with policy implementation can effectively reduce excessive adolescent alcohol consumption and prevent the long-term dismal outcomes of cardiovascular disease. Individuals with less education about cardiovascular health are more at risk of alcohol-related harms. Prevention programs can offer support to students struggling with alcohol abuse. Parents and teachers can be involved with community programs. Practical applications include learning the impacts of alcohol consumption on cardiac health and conveying knowledge in hospitals and communities. Policy implementation for the hospitals and communities include alcohol use and cardiac health education. I advocate for the key stakeholders to participate in education sessions about alcohol use to promote cardiovascular health and mitigate cardiovascular disease.

Keywords: cardiovascular disease, adolescents, alcohol abuse, cardiac health education, program-based intervention, policy implementation

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Chapter One: Introduction

In this chapter, I explain my interest in the topic of this paper. It is important because the contents of this chapter establish the foundation for the next chapters. The purpose of this chapter is to connect the development of my topic to my learning in the Master of Education (M.Ed.) program. This chapter will proceed by introducing my journey as a hospital worker and student, outlining the development of how I became interested in my topic, conveying the significance of cardiac health education, and presenting the argument.

My Journey as a Hospital Worker and Student

I have been passionate about studying and working in the medical field for many years. The human body is remarkable with the various organ systems working together. The cardiovascular system captured my attention as an area to pursue further studies. I was fascinated by how a small organ can sustain life for decades by the simple function of pumping blood. Throughout the M.Ed. program, I worked as a Registered Cardiology Technologist and a supervisor in the cardiac sciences department at a trauma care hospital. I perform clinical practice and serve in an educational leadership capacity. Both experiences gave me the opportunity to learn about multiple types of cardiac disorders. I was able to broaden my knowledge of cardiology through the immersion of cardiac anatomy, physiology, pharmacology, and research.

While I was studying in the M.Ed. program, I learned about research methods, which enabled me to conduct effective research by using filters and the advanced search feature. Applying these research strategies allowed me to expand my knowledge of cardiology and conduct a literature review about the long-term effects on cardiovascular health. Upon introspection, intelligent decisions can be made early in life to offset the negative cardiac effects

that increase mortality. Education can reduce the mortality rate from cardiovascular disease. The M.Ed. program gave me the tools and knowledge to perform research, learn pedagogical skills, digital technology, digital literacy, and leadership to understand the epistemological practices on reducing the risks of cardiovascular disease.

Developing my Interest in Adolescent Cardiovascular Disease

As my knowledge in cardiology advanced, I learned that certain substances such as caffeine from coffee can affect cardiovascular health. Cardiovascular disease is the leading cause of death and I wanted to investigate the reasons. My interest in this topic began with the rising cardiovascular health issues that saw in adolescent patients while performing cardiac tests. Through the M.Ed. program, I completed a literature review on the cardiovascular effects of caffeine through coffee consumption in adolescents. I chose caffeine because students I know drink a lot of coffee. I wanted to learn about the long-term cardiovascular impact of caffeine in school-aged students. From the research I conducted on the impacts of caffeine on adolescents, I considered how many school-aged adolescents consume alcohol. I then became interested about the long-term cardiovascular effects of alcohol and how students could be educated to make informed decisions regarding alcohol consumption.

Since adolescents also drink alcohol, I became interested to learn about the awareness that adolescent groups have on cardiovascular disease from excessive alcohol consumption. I wanted to discover what influences adolescents to consume alcohol, how the heart responds to excessive alcohol consumption, and the patterns of alcohol consumption. In addition to researching long-term impacts, I wanted to learn how I could integrate education and cardiac health programs. A major revision for this paper conceptualized from a quantitative study to

integrating education on how health programs and policy implementation can promote cardiac health and wellness.

In the M.Ed. program, several core courses provided me with the knowledge in developing the content of my topic. The leadership course contributed to different perspectives in leadership types including transformational leadership and distributed leadership. In a patient care environment, trust and relationship is important with vulnerable or palliative patients. The concept of distributed leadership taught me to empower department staff to become leaders and teachers. This is important in my topic with policy implementation where stakeholders and parents play a pivotal role.

The philosophy of education course helped me to recognize my teaching philosophies. I discovered how the attribute of care is essential. I also discovered that I am an experiential learner who promotes intellectual engagement. This is key for my topic as strategies and pedagogical practices need to be applied for cardiac health education. The curriculum and teaching course added value to potential strategies that I can apply towards the education sessions on cardiac health topics. The diversity course gave me a perspective that cardiovascular wellness and education is for all adolescent students. Cardiac health education would be inclusive of the community, the Indigenous students, gender and sexual minority students, and the school divisions.

Significance of Adolescent Cardiac Health Education

The significance of adolescent cardiac health education is an opportunity to educate stakeholders and adolescents about the dangers to cardiac health from excessive alcohol consumption. Support can also be available to youth struggling with alcohol to reduce mortality associated with the risks of alcohol induced cardiovascular disease. My topic became an

opportunity to bring about awareness and change with cardiovascular health associated with substance abuse. By providing cardiac health education, the community can benefit from knowledge gained about the long-term negative effects of alcohol and promote a healthy heart.

From a larger context, educating adolescents and stakeholders about the risk of alcohol induced cardiovascular disease can mitigate mortality and promote cardiac health and wellness. Educating adolescents about cardiac health can make a significant impact. As school-aged students acquire cardiac health knowledge early in life, communities can benefit. Cardiovascular risk profiles will improve when adolescents transition to adulthood, and the number of deaths caused by cardiovascular disease will be reduced.

Presenting the Argument

I claim that ongoing cardiac health education with policy implementation can effectively reduce excessive adolescent alcohol consumption and prevent the long-term dismal outcomes of cardiovascular disease. Topics of focus include cardiovascular health and effects of excessive alcohol consumption. Cardiovascular disease is a chronic issue with a high mortality rate and affects public health each year. Alcohol ingested in substantial amounts causes heavier workload on the heart, which leads to increased blood pressure, a precursor to cardiovascular disease. First, there is evidence from Radisaukas et al. (2021) that excessive amounts of alcohol consumption increase the risk of cardiovascular disease. Cardiac education is needed due to the potential adverse outcomes from lack of knowledge about alcohol and cardiovascular health. Norström and Landberg (2020) acknowledge that individuals with lower education are more at risk of alcohol-related harms. Alcohol intake during adolescence increases poor cardiovascular risk profiles in adulthood (Raeside et al., 2019). Cardiac health education programs with policy implementation can assist students who are struggling with alcohol. Moreland et al. (2020) states

that prevention programs can offer support to students struggling with alcohol abuse. Tinner et al. (2022) asserts how parents and teachers can be involved with community programs, which contribute to health and cardiovascular wellness.

Overview of the Paper

In the next chapter, I present the current and contemporary literature on cardiovascular disease and the risks associated with excessive alcohol consumption on the heart. I will explain the influences of adolescent alcohol consumption, cardiac behaviours, and patterns of consumption among students. The literature review will also demonstrate how education and policy implementation can create positive change on cardiovascular health for adolescents. In the third chapter, I discuss the application of cardiac health education from my perspective as a hospital worker and an educational leader. In the fourth chapter, I provide a summary of this paper and discuss implications of cardiac health education to mitigate cardiovascular disease.

Chapter Two: Literature Review

In this chapter, I present the current and contemporary literature on cardiovascular disease, the effects of alcohol consumption, and strategies using education and policy implementation to reduce the long-term negative cardiovascular impact of excessive adolescent alcohol consumption. The purpose of this chapter is to convey the key findings of studies from several authors to support the argument. This chapter will proceed by providing an overview of cardiovascular disease, discussing the impact of alcohol consumption, and explaining how cardiac health education and policy implementation can reduce alcohol induced cardiovascular disease.

Cardiovascular Disease Overview

Cardiovascular disease develops at an early age and is caused by disorders of the heart and blood vessels. According to Murad et al. (2017), cardiovascular disease is the most significant cause of death in all age groups. The literature provides evidence that cardiovascular disease affects all people and is the leading cause of global death. Amoah et al. (2021) reported that even a less developed country like Ghana has experienced cardiovascular disease as the leading cause of death among adolescents since 2001. Elagizi et al. (2020) stated further that one third of all human deaths are from cardiovascular disease and accounts for 18 million deaths each year. Similarly, Nwokeji et al. (2021) reported cardiovascular disease as the leading cause of morbidity and mortality, accounting for more lives lost per year than those lost to cancer and chronic lung disease combined.

The severity of cardiovascular disease has a clear effect on public health. Raeside et al. (2019) acknowledged cardiovascular disease as one of the most significant public health challenges facing adolescents. Radisaukas et al. (2021) suggested that cardiovascular disease

mortality can be attributed to biological risk factors such as high blood pressure. Behaviours such as alcohol use is a precursor to high blood pressure that leads to cardiovascular disease. Raeside et al. (2019) supported the claim from Radisaukas et al. (2021) on how the changes in the blood vessels of the heart begin early in life and through adolescence from risk factors such as excessive alcohol intake. Similarly, Piano et al. (2018) found that the arterial stiffness in young adults was a biomarker that increased cardiovascular disease risk. These health challenges present effects on the heart that alter the normal cardiac physiology and workload on the heart.

Cardiac Workload and Behaviours

Contemporary findings by Amoah et al. (2021) indicated how the prevalence of cardiovascular risk factors that increase cardiac workload among adolescents has been rising. Large cohort studies have confirmed that high blood pressure is a risk factor for heart failure and atrial fibrillation. In a study by Fuchs and Whelton (2020), high blood pressure was associated with the strongest evidence for causation of cardiovascular disease due to the increased workload on the heart. The literature explains how alcohol consumption is a risk factor that increases cardiac workload and alters the behavior of the heart.

Alcohol use affects the normal physiological mechanism of the heart and leads to abnormal cardiac behavior. In a study by Obad et al. (2018), cardiovascular diseases associated with heavy drinking include cardiac arrhythmias and heart failure. A study reported by Lind et al. (2021) found that alcohol impairs the normal cardiac impulse excitability and can trigger cardiac arrhythmias. The study from Obad et al. (2018) aligned with the research from Lind et al. (2021) on how alcohol intake affects the pacemaker cells of the heart leading to cardiac arrhythmias. Among the distinct types of cardiac arrhythmias, atrial fibrillation is the most common arrhythmia. During atrial fibrillation, the cardiac pathways in the atria of the heart

where electrical impulses are generated incline to respond in an abnormal and erratic manner (Sears et al., 2021). Radisaukas et al. (2021) further supported the claim from Lind et al. (2021) that heavy alcohol use is a common cause of atrial fibrillation.

Alcohol related heart failure is correlated with multiple types of cardiac abnormalities (Obad et al., 2018). It is estimated that half a million Americans are diagnosed with heart failure each year and many of those cases were alcohol induced, supporting the need for education as stated in the argument. Fuchs and Whelton (2020) reported consistent observational evidence suggesting that long-term consequences such as heart failure are caused by high blood pressure.

The Impact of Alcohol Consumption

Chronic heavy alcohol use increases risk for cardiovascular disease by reducing the heart's ability to pump blood. Molina et al. (2014) reported that chronic alcohol abuse can aggravate cardiac injury resulting from pressure overload. Molina et al. (2014) affirmed the study from Obad et al. (2018) and reported how excessive chronic consumption of alcohol increases the risk of developing reduced cardiac function. Fernández-Solà (2020) further supported how excessive and prolonged alcohol drinking can lead to alcoholic cardiomyopathy, which is a disease of the heart due to alcohol. This syndrome is not caused by short-term alcohol consumption. According to Molina et al. (2014), alcohol abuse disrupts cardiac muscle contraction by damaging the cellular proteins, causing the heart muscle cells to self-destruct. This condition becomes a major concern for health as heart attacks and heart failure are at a greater risk of occurring. Cardiac disease remains a burden causing death in the alcoholic population.

Although the literature demonstrates findings about the negative aspects of alcohol consumption, the literature has also counter-argued with evidence about the potential health

benefits of alcohol consumption. In contrast to the overall detrimental effects of alcohol on other organ systems, Molina et al. (2014) reported that low to moderate alcohol consumption is associated with a lower risk of coronary heart disease. Valerio et al. (2019) also reported how low to moderate alcohol consumption may have a beneficial effect on cardiac fatty acids, promoting cardiac health. Chagas et al. (2017) supported the research from Molina et al. (2014) and reported how the ingestion of small to moderate alcohol consumption amounts has been associated with cardiovascular protection. Emberson and Bennett (2006) discovered that people who drank light or moderate amounts of alcohol also exhibited other characteristics that are beneficial to health. As an example, cohort studies in the literature have demonstrated U (or J) shaped graph relationships between alcohol consumption and the incidence of major vascular diseases, meaning that low to moderate alcohol consumption has the potential to prolong life (Emberson & Bennett, 2006).

The literature presented clear association between alcohol consumption, high blood pressure, and cardiovascular disease. Adolescent alcohol precludes various influences where patterns of consumption affect the heart.

Influences and Patterns of Adolescent Alcohol Consumption

General findings in the literature demonstrated peer pressure as a primary influence of alcohol consumption among adolescents. Byrnes et al. (2019) reported that peer influence is noticeable during the teen years and has been linked to alcohol use. A systematic review by Leung et al. (2014) supported the study by Byrnes et al. (2019) and found that having friends who engage in alcohol use was related to individual adolescent alcohol use. Leung et al. (2014) also reported how children begin to invest in peers as the primary source of social and emotional support when entering early adolescence. With the greater emphasis on peer relations during

puberty, adolescents adopt the views of peers, to seek peer approval, and be subject to peer influence. As peer alcohol use becomes more prevalent among adolescents, peer pressure increases to conform and start drinking.

The literature has also demonstrated life stressors as an influence on adolescent alcohol consumption. Leung et al. (2014) stated how young people experience stressful and transient biological changes including appearance, height, and sex organ changes where these physical changes are coupled with shifting personal expectations and new social demands. Both physical and circumstantial stressors affected adolescents and influenced alcohol consumption. In another study by Newton et al. (2018), regular drinking emerged to cope with the increasing life stressors and demands at the adolescent stage. Newton et al. (2018) further stated that motives include drinking to cope with negative emotions such as anxiety or hopelessness, which are associated with alcohol-related harms during adolescence. A study by Grevenstein et. al (2020) affirmed the study by Newton et al. (2018) and claimed that adolescent alcohol use may be to cope with stress based on sensitivity to the circumstances of life.

Patterns of alcohol consumption levels varied amongst adolescents. De Visser and McDonnell (2011) discussed patterns of consumption where elevated levels of alcohol intake among young men reflected a tendency to have less healthy patterns of behaviour than women. Nicholls (2010) expressed widespread concern about the negative health impacts and social consequences of excessive alcohol consumption among young people, with heavy episodic drinking, referred to as binge drinking. Molina et al. (2014) reported harmful alcohol consumption levels that include consuming four to five drinks on a single occasion within a two-hour period, resulting in elevated blood alcohol concentration levels of 0.08% or higher, and chronic heavy alcohol consumption, which is seven drinks per week for women and 14 drinks

per week for men. This example of binge drinking remains the most common and expensive form of substance abuse. De Visser and McDonnell (2011) further stated that binge drinking is associated with an increased risk of alcohol poisoning, known as alcoholic cardiomyopathy. The consumption levels that were reported by Molina et al. (2014) aligned with the study from Piano et al. (2018), who reported that present-day young adults consumed six to seven drinks per binge-drinking episode, which exceeded the current binge threshold of four to five drinks per episode.

The literature provided evidence on several aspects of influence including peer influence and the life stressors. Patterns of consumption included excessive chronic alcohol intake, known as binge drinking. By educating adolescents, parents, and stakeholders, the impacts of cardiovascular disease from excessive alcohol intake can be reduced, as stated in the argument of this paper. Policy implementation can promote ongoing cardiac health education.

Cardiac Health Education Program and Policy Implementation

Contemporary literature has provided evidence on how cardiac health education can help mitigate the dismal cardiovascular outcomes of alcohol induced cardiovascular disease. Norström and Landberg (2020) acknowledged that individuals with lower education were more at risk of alcohol-related harms. Cardiac health education programs and policy implementation can reduce cardiovascular disease by educating adolescents, parents, educational stakeholders, the community, and school districts around the world. A study by Tinner et al. (2022) asserted parents and teachers should be involved with community programs that contribute to health and cardiovascular wellness.

Policy implementation can promote sustainability in cardiac health education. Newton et al. (2018) reported how substantial societal benefit can be gained from even modest reductions in

alcohol use through policy. Slade et al. (2020) reported that prevention is a key public health approach to reduce the harms associated with alcohol use. Policymakers should be implementing prevention programs toward the long-term effects of alcohol consumption among low-risk and high-risk populations. Similarly, a study by Noel (2019) determined that creating policies with the availability of alcohol, restricting alcohol marketing, increasing the price of alcohol, and developing effective warning labels can reduce adolescent alcohol consumption. Willmore et al. (2017) reported a need for public policy intended to encourage a culture of drinking in moderation. The literature provided evidence that formal programs and policies can help to reduce the effects of adolescent alcohol consumption, supporting the argument in this paper.

Goals and Objectives

Both cardiac health education and policy implementation requires planning for a strategic approach. The goals of cardiac health education involve the delivery of knowledge and opportunities for adolescents to speak, be heard, and provide feedback. Those who are struggling with alcohol abuse can receive assistance. Moreland et al. (2020) stated that prevention programs can offer support to students struggling with alcohol abuse. Educational stakeholders including teachers, educational support staff, counsellors, and school administration can all make an impact by utilizing education for cardiovascular health and wellness. Parents also play a vital role in promoting education, fostering effective communication, encouraging healthy habits, and reinforcing the health topics learned. In a study by Gilligan et al. (2019), the principles of reflective listening, empathic feedback, and reflective summary highlighting personal responsibility can be utilized in a cardiac health education program.

The objectives of a cardiac education session include the ability for adolescents to consult with adults and engage in conversation. Gilligan et al. (2019) further reported how counselling

sessions focus on personal responsibility, exploration of motivation for drinking, and review of potential negative consequences that can be applied for cardiac education sessions. Gilligan et al. (2019) also considered integrating personalized normative feedback and anticipating barriers to accomplishing goals as part of the program.

Research indicates that adolescents would benefit from cardiac health education including Indigenous students, gender minority students, and sexual minority students. In a study by Komro et al. (2022) on Indigenous adolescents, prevention activities included public education, social norm campaigns, training to schools and other community organizations, and individual, family, and group counselling. Gender and sexual minority students would also benefit with cardiac health education to reduce alcohol consumption impacts. Goodin et al. (2019) stated that LGB youth who had an opportunity to communicate to an adult decreased the risk of negative mental health outcomes and unsafe behaviours with alcohol use.

Parents and Stakeholder's Role

Parents and educational stakeholders play a key role towards cardiac health education and policy implementation. The literature demonstrated how family-based interventions and school-based interventions reduced alcohol consumption. In a study by Petrie et al. (2007), active parental involvement was an important feature of successful interventions. The ability to empower parents precluded intervention. Gilligan et al. (2019) reported several attributes to empowering parents such as encouraging parents to take greater responsibility for family functioning and enhancing parenting skills. Gilligan et al. (2019) also stated other attributes that could empower parents including communication skills, problem-solving skills among all family members, and connecting the family to other systems like school, church, and community activities. Positive parental role models for children makes a significant impact. Byrnes et al.

(2019) stated that less parent drinking may reduce the modeling of drinking behavior, which is important as parent drinking may motivate teen drinking. Byrnes et al. (2019) also reported strong parental disapproval of substance use reduced the risk for heavy drinking. Parental monitoring was identified as a key influence on teen drinking. Bahr and Hoffmann (2010) reported how parenting style also showed importance, as the authoritative parenting style with high responsiveness and warm demeanor proved to be protective for teen drinking. Byrnes et al. (2019) claimed that family-based approaches to preventing adolescent alcohol use can be effective throughout adolescence.

The literature has also demonstrated several findings of school-based interventions by educational stakeholders to help reduce adolescent alcohol consumption. Newton et al. (2018) claimed that school-based prevention programs were effective in reducing the onset and escalation of alcohol use. In the study by Komro et al. (2022), an alcohol-focused school and community-based preventive intervention with delivery at the school reduced alcohol use among adolescents. Doumas and Esp (2019) reported how school-based interventions were appropriate for high school seniors because programs offered in the school setting can reach adolescents who may not seek treatment elsewhere. Similarly, Gersh et al. (2019) suggested that integrating normative feedback regarding peer alcohol use is a promising approach in adolescent focused school interventions.

Technology can play a role in school-based interventions. Studies examining the effectiveness of technology-based interventions reduced alcohol use among adolescents. In the study by Doumas and Esp (2019), computer-based alcohol interventions appealed to youth and represented a promising approach for high school seniors because of the game-like appearance. Technology-based interventions showed efficacy in reducing alcohol use among adolescents.

Both family-based and school-based interventions with policy implementation require strategic approaches to ensure a successful outcome. In a study by Komro et al. (2022), potential actions focused on reducing easy access of alcohol to youth. This included educational campaigns, behavioral supports, drug take-back initiatives, strategies to reduce social sources of drugs, and collaborations with law enforcement and other community institutions. In a meta-analysis study by Gesualdo and Pinquart (2021), an expectancy challenge intervention strategy was developed with high school students that placed a strong focus on increasing media literacy to determine the validity of alcohol advertisement. This intervention strategy eradicated media portrayals about alcohol consumption and reduced alcohol use (Gesualdo & Pinquart, 2021).

Another strategy by Gilligan et al. (2019) involved parents, youth, and counsellors to create a summary statement focusing on supporting the adolescent's self-efficacy about alcohol-related goals. This intervention strategy provided an opportunity for follow-up after six weeks to reinforce motivation for reaching goals (Gilligan et al., 2019). Newton et al. (2018) utilized two approaches to substance use prevention including universal prevention and selective prevention. Universal prevention focused on skill development and normative education. Selective prevention involved targeting programs to specific populations, such as individuals at greatest risk for developing problems with alcohol (Newton et al., 2018).

Questionnaires can be an effective strategy for adolescents. In one study, Gersh et al. (2019) suggested a questionnaire consisting of inquiries about alcohol use in comparison to age and gender specific norms, personal motives for substance use, and consequences of substance use. Prompts to address discrepancies between adolescent goals and alcohol use, and strategies to reduce alcohol use were also integrated in the questionnaire (Gersh et al., 2019). In a study by Kemp et al. (2021), inquiry and discussion activities described real-life scenarios relating to teen

drinking highlighted physical and social consequences of drinking, signs of alcohol poisoning, refusal skills, and indicators of problem drinking.

The study by Komro et al. (2022) emphasized tangible steps to apply evidence-based policies, programs, and practices, and how to motivate and create family and local citizen action for alcohol prevention. The six-stage organizing process included assessment of community conditions and practices, building family and citizen involvement in prevention, enhancing knowledge, and building skills for taking preventive actions, developing action steps, implementing prevention actions, and assessing initial results, celebrating accomplishments, and refining planned next steps for maintaining effort and institutionalizing changes (Komro et al., 2022).

Cardiac health education with policy implementation can be effective in reducing the long-term negative impacts of cardiovascular outcomes from alcohol consumption, as outlined in the argument of this paper. Tangible examples of health programs aimed at reducing alcohol consumption and cardiovascular disease demonstrated efficacy with education and intervention. Programs involving cardiac health education would be inclusive of adolescents including the Indigenous population, and gender and sexual minority students. The literature showed value with utilizing family-based interventions, which encompassed parent involvement through parental monitoring, follow up, and care. School-based interventions comprised of stakeholder and community involvement, and evidence-based practices. Technology and questionnaires were utilized as effective tools that reduced alcohol use.

Summary

In this chapter, several studies were examined to investigate the current and contemporary literature on cardiovascular disease, the effects of alcohol consumption, and the

strategies using cardiac health education and policy implementation to reduce the long-term negative cardiovascular impact of alcohol consumption in adolescents.

In the next chapter, I discuss the application and how the argument applies in a practical context with my experiences as a hospital worker and an educator. Through my experiences as a hospital worker, I explain how the argument applies within my professional work. For my experiences as a healthcare educational leader, I develop a model for how I believe the argument could best be applied in a community setting. Connections will be made from the literature review to my experiences. I will also integrate my hero journey to my M.Ed. journey.

Chapter Three: Application of Cardiac Education and Policy Implementation

In this chapter, I discuss the application and how the argument applies in a practical context. Through my experiences as a hospital worker, I explain how the argument applies within my professional work. As an educational leader, I develop a model for how I believe the argument could be applied in a community setting. This chapter will proceed with a background of my educational journey, apply cardiac education in the hospital pediatric emergency department, and define a community cardiac education model as an educational leader. Connections will be made from the literature review to my experiences.

My Experiences as a Hospital Worker

Prior to working in the hospital, I achieved little education in Vancouver, BC and worked hard with long hours in retail management. I was engaged in various sports with a dream to become a sports superstar. I thought education was not needed because I could just play sports and earn a lot of money. I enjoyed competing as I found sports to be stimulating. After several years of attempting to become a sports superstar, I did not get very far and lost a significant amount of money. I came to the sad reality that my dream of becoming a multimillionaire from playing sports would not happen. There had to be more to my life than playing sports and working in retail management. I needed knowledge and training. It was at that moment when I realized that education was the answer.

When I began my educational journey, my life changed rapidly in a way I never imagined. I have always wanted to work in the field of medicine and healthcare. In its complexity, the human body fascinated me. After a ten-year break from attending school, I completed a human biology upgrade course. The cardiovascular system captured my attention and became an area for me to pursue further studies. Following the completion of all my upgrade

courses, I applied and was accepted into the Cardiology Technology program at the British Columbia Institute of Technology (BCIT). After a few semesters into the program, I was ready for the ten-week practicum. I was not approved for time off from my retail management job to complete my practicum. I was left with two choices: I could either give up my education and stay working in retail management or quit my retail management position to pursue my education. I was looking for more in my life and decided to pursue my education. That was the greatest decision I made in December 2011.

The option to complete my practicum was available for me outside of British Columbia after I learned that there were opportunities in Manitoba. I moved and started the practicum component in my hometown of Winnipeg, Manitoba in March 2012. There was a demand in the field of Cardiology Technology in Winnipeg. I was hired as a casual staff member in the first week of practicum and worked and studied at the same time. After completing the Cardiology Technology program in July 2013, I passed the national registration and certification exam in September 2013. I earned more income than my previous retail management job with much less effort and had a stable schedule rotation. I then decided to pursue a Bachelor of Health Sciences degree (BHSc) at Thompson Rivers University (TRU) in November 2013. I graduated in the BHSc program at TRU in June 2018. In the same year, I applied and got accepted into the M.Ed. program at TRU in August 2018.

The topic of cardiovascular health is important to me because of the significant impact that cardiovascular disease has on the general population. Since cardiovascular disease is the leading cause of global death (Nwokeji et al., 2021), I wanted to investigate the reasons. The adolescent population is also important to me because children are the future. Alcohol abuse is negatively affecting cardiac health (Fernández-Solà, 2020). I want to make an impact by

educating people about alcohol induced cardiovascular disease to reduce the long-term negative impacts of this morbid disease. Teaching the adolescent population can have a ripple effect to help mitigate the number of deaths due to cardiovascular disease and excessive alcohol use. By positively impacting the adolescent population, adolescent cardiovascular risk profiles would improve during the transition to adulthood (Raeside et al., 2019).

In my role as a hospital worker, I perform non-invasive cardiac tests on patients with chest pain, shortness of breath, or any conditions affected by the heart. I also work in an educational leadership capacity to teach staff and new students about cardiac procedures related to diagnostic imaging training. When I work in the clinical environment, I respond to various calls in the general hospital including those in the pediatric emergency department and inpatient child health units. I have seen many adolescent substance abuse patients where the results of the electrocardiogram show significant changes compared to a normal heart.

By utilizing education in the hospital setting, topics about cardiac health can be conveyed to parents, caregivers, and adolescents. Many patients come to the trauma hospital where I work, as it is the largest tertiary care hospital in Manitoba. As moderate to high acuity patients arrive to the emergency department, triage staff register these patients. Following initial vital checks, diagnostic imaging tests including electrocardiograms are requested. After the electrocardiogram is performed, I hand the results to the nurse or place it on the patient's chart and move on to the next call. I believe more can be done for the patient from an educational perspective. When adolescent patients who have overdosed on alcohol come to the emergency room, there is opportunity at that moment to provide cardiac health education by involving other stakeholders. Patients receive routine medical care by coming to the emergency room and communicate reasons for the hospital visit. The doctor prescribes medication and patients are either sent home

or admitted as inpatients. These routine activities are limited from an educational perspective. Education can be applied using questionnaires about alcohol consumption. Pamphlets about heart health can be given to parents or caregivers. Follow up visits can then be scheduled.

Intervention programs that include questionnaires have demonstrated efficacy in helping to reduce alcohol use (Gersh et al., 2019). This concept can be applied in a hospital-based environment. I would work in partnership with my manager, director, and child health stakeholders to empower the pediatric nurses and physicians to distribute cardiac health information. By following concepts from family-based interventions (Gilligan et al., 2019) and applying these concepts to a hospital setting, excessive alcohol consumption and negative cardiovascular effects can be reduced. As an example, questionnaires can be given to the parent or caregiver. Questions will consist of the amount of alcohol the adolescent consumed that caused the hospital visit, the type of alcoholic beverage that was consumed, the frequency of alcohol consumption, the patterns of alcohol consumption, and what influenced the adolescent to consume alcohol. There would also be questions about the adolescent's height, weight, age, and gender for future research. Questionnaires given to parents or caregivers will have the cardiac and pediatric department contact number, information to consent for voluntary participation, and assurance that privacy will be respected.

In addition to questionnaires, pamphlets will also be distributed that address cardiovascular disease and alcohol consumption. Key information from current and contemporary literature will include the impact of cardiovascular disease on public health with an explanation about the impact of alcohol consumption on the heart. Statistics about cardiovascular disease and steps that parents can take would also be included. This aligns with the research from Petrie (2007) on how parental involvement is an important feature of

successful interventions. Conversations will take place between the child health stakeholders to the parents or caregivers about effective communication with the adolescents. Topics of discussion include behaviours associated with drinking, demonstrating positive parental roles to the adolescents, and connecting the family to other systems like church and community activities (Gilligan et al., 2019). These activities have shown promising results to reduce alcohol consumption in adolescents.

After six weeks from the hospital visit, a scheduled follow up with the parent or caregiver and adolescent would occur. Representatives of the cardiac and pediatric department would meet with the parent or caregiver and adolescent to answer any questions or discuss any concerns. During this meeting, cardiac health topics and impacts of alcohol consumption on the heart will be emphasized. This meeting would be an opportunity for the adolescent to be heard and given the option to share concerns and experiences with alcohol abuse. This aligns with Goodin et al. (2019) where youth who had an opportunity to communicate to an adult decreased the risk of negative mental health outcomes and unsafe behaviours with alcohol use. All responses will be kept confidential.

In addition to cardiac health education, policy implementation would be considered. Key stakeholders including directors, managers, supervisors, nursing educators, and physicians from the cardiac and pediatric departments would discuss strategies to create policy for ongoing education about cardiac health. Hospitals will provide cardiac education to foster cardiac care and reduce the long-term cardiovascular effects of excessive alcohol consumption. This supports the research from Newton et al. (2018) that society would benefit from even modest reductions in alcohol use through policy. Strategic decisions aimed at prevention is a key public health approach to reduce the harms associated with alcohol use (Slade et al., 2020). Policy would be

created in the hospital by compiling a list of key stakeholders and the designations from both the cardiology department and child health department. An initial meeting would be scheduled to discuss plans of policy implementation, topics to consider, and address any concerns. Follow-up meetings would be scheduled prior to the start date. Drafts of the policy would be available for feedback and review at each stage of development. Policy topics under consideration include prompt triage registration and care for adolescent alcohol overdose patients, non-invasive cardiac testing including electrocardiograms, and regular nursing checks with documentation. Furthermore, distribution of questionnaires and pamphlets outlining cardiac education with a scheduled follow up visit after six-months would be considered.

Hospital-based cardiac education with policy implementation aims to provide care for adolescent alcohol abuse to mitigate the negative effects of cardiovascular disease. Research has indicated positive outcomes of prevention programs and policy implementation to reduce excessive alcohol use. By using questionnaires, pamphlets, and scheduled appointments for follow up, this program will give opportunities for gaining knowledge and a deeper understanding about the heart and impacts of alcohol consumption to reduce cardiovascular disease. Policy implementation with strategic planning will provide ongoing health education and care for adolescents who have experienced alcohol abuse.

Similar concepts with education programs can be applied at the community level to affect change to a larger context. Practical application using cardiac health education can reach out to the community by providing workshops to individuals struggling with alcohol abuse. Cardiac health education can also provide instruction to citizens that want to learn more about cardiac wellness, the impact of alcohol on the heart, and effective approaches to reduce and prevent the long-term cardiovascular effects of alcohol induced cardiovascular disease in adolescents.

My Experiences as an Educational Leader

In my role as an educational leader, I would like to develop a model for a curriculum in the community to teach about the association between cardiovascular health and alcohol consumption. This program would be open to parents, adolescents, educational stakeholders, and anyone in the public interested in learning about cardiac health. I aspire to present acquired knowledge to the public about cardiac health and wellness to reduce cardiovascular disease. This program would consist of a one-day, instructor-led workshop that teaches simple concepts about the cardiovascular system, cardiovascular disease, the impact of alcohol consumption on the heart, and cardiovascular health and wellness through reduction and prevention of excessive alcohol consumption.

Practical steps can be applied from evidence-based programs to motivate and create local citizen action for prevention of alcoholic misuse (Komro et al., 2022). An instructor-led workshop aligns with the concept from Komro et al. (2022) and can be available to anyone interested in learning more about adolescent induced cardiovascular disease with steps to reduction and prevention. The title of the workshop would be, “Cardiac health and excessive alcohol consumption: Strategies to reduce and prevent the long-term dismal outcomes of cardiovascular disease.”

The objectives of this workshop consist of four elements. At the end of the workshop, learners will:

- Gain a deeper understanding of the cardiovascular system.
- Recognize the impact of alcohol consumption on the heart.
- Understand strategies to prevent alcohol induced cardiovascular disease.
- Integrate knowledge to design a personal plan to reduce cardiovascular disease.

The first segment of the workshop consists of a short lecture that covers the basics of the cardiovascular system including simple concepts on cardiac anatomy and physiology. Anatomy will cover the location of the heart, the four chambers of the heart, the valves in the heart, and the major vessels and coronary arteries. Cardiac physiology will cover direction of blood flow, basic concepts in cardiac electrical pathways, and the electrocardiogram. Instructional videos will utilize distribution platforms such as YouTube using the Creative Commons filter. Furthermore, succinct readings from open text resources will be used to supplement the short lecture. Creative Commons and Open Text resources will address any copyright implications.

Following cardiac anatomy and physiology, the next segment will cover alcohol consumption, how alcohol impacts the heart, heart failure, and cardiac arrhythmias. Video demonstrations on how alcohol destroys cardiac muscle cells (Molina et al., 2014) will examine the impact of alcohol consumption from a visual perspective. Heavy alcohol use is a common cause of cardiac arrhythmias, including atrial fibrillation (Radisaukas et al., 2021). Instructional videos can illustrate the electrical activity in the atria of the heart during a chaotic rhythm like atrial fibrillation (Sears et al., 2021). Terms such as binge-drinking (Nicholls, 2010) and alcoholic cardiomyopathy (Fernández-Solà, 2020) will be defined. Further discussions will occur about the impact of alcohol consumption on public health, which will be supported by statistical examples.

Prior to the next topic on cardiac education, reduction, and prevention, there will be time for learners to complete a self-assessment to check understanding of cardiac anatomy, cardiac physiology, and the impact of alcohol on the heart. Multiple choice questions will refer to cardiac anatomy, cardiac physiology, and definition of terms. The answers will be self-checked

as each question is reviewed. There will also be opportunities to ask further questions and have class discussions.

In the next section, cardiac education will be discussed, and the initial topic will be on the effects of positive parental influence. Byrnes et al. (2019) claimed that family-based approaches to preventing adolescent alcohol use can be effective throughout adolescence. Topics of discussion involving parents will be about modelling behaviours. This aligns with the research from Gilligan et al. (2019) on empowering parents to support healthy behaviours and model examples, which has shown efficacy to reduce alcohol consumption. By initially raising awareness to parents, knowledge can be passed on to the children. One of the key features of this concept is setting a good example for children. For instance, a model for parents is to emphasize good behavior in front of adolescents and to practice low to moderate consumption of alcohol, which has shown positive health benefits (Valerio et al., 2019). In addition, parental attitudes towards alcohol use can reduce alcohol consumption, which aligns with Byrnes et al. (2019) where strong parental disapproval of substance use reduced the risk for heavy drinking. Parents will learn behavioural concepts to reduce alcohol induced cardiovascular disease. Role-play sessions will occur that demonstrates effective communication between parents and adolescents showing disapproval for heavy alcohol drinking. This aligns with Bahr and Hoffmann (2010) on how parenting style showed importance, as the authoritative parenting style with high responsiveness and warm demeanor proved to be protective for teen drinking.

Following parental modelling behaviours, concepts from the multi-stage organizing process (Komro et al., 2022) can be applied, as it has shown efficacy on community intervention. These stages include assessment of community conditions and practices, building family and

citizen involvement in prevention, enhancing knowledge with building skills for taking preventive actions, and implementing prevention actions (Komro et al., 2022).

The first stage in assessment of community conditions and practices examines the current state of adolescent alcohol consumption in the community to understand the severity of alcohol overdose cases. Statistical information can provide an informative outlook on the impact of alcohol on adolescents. Both high-risk and low-risk populations can be identified in the community.

The second stage involves building family and citizen involvement in alcohol prevention. An open discussion on tangible action provides collaboration among the learners in the community. Reflective practice can occur on the responsibilities of parents, educators, and adolescents to reduce the impacts of excessive alcohol consumption. Discussions will also incorporate the influence of media, which aligns with research from Gesualdo and Pinquart (2021) that placed a strong focus on increasing media literacy to determine the validity of alcohol advertisement. This strategy eliminated media portrayals about alcohol consumption and reduced alcohol use (Gesualdo & Pinquart, 2021).

The third stage involves enhancing knowledge and building skills for taking preventative actions. Discussions will occur on the positive effect of engaging adolescents in healthy activities. Newton et al. (2018) utilized an approach to substance use prevention involving universal prevention, which focused on skills development and normative education. The efforts of maintaining active lifestyles among adolescents that are occupied with recreational activities, teamwork, activities that stimulate the mind, and accomplishments that build self-esteem are forms of intervention that can help offset the urge to consume alcohol (Newton et al., 2018).

The fourth stage and final segment of the workshop outlines the preventative action steps that learners can apply at the community level. This stage will assess how plans can work to mitigate excessive alcohol use. There will be an opportunity for willing learners to share individual experiences with alcohol abuse. Learners will integrate knowledge from this workshop and create a personal plan for reducing alcohol consumption. This activity consists of writing down goals for behaviors and actionable tasks. Parents can list examples such as drinking in moderation, promoting lifestyle changes, or becoming firmer with conversations to adolescents about alcohol use. Setting goals allows for personal accountability to learners and establishes the stage for success.

There will be an opportunity for open class discussions following the formal program schedule. Class dialogues allow for learners to engage in collaborative discussion with the aim of reducing alcohol use and cardiovascular disease. At the end of the workshop, learners will be given a feedback sheet to provide insights in enhancing and improving the workshop.

Further to my community education program model, I would like to train and lead other instructors to teach this workshop and conduct multiple sessions in different areas of the city. I welcome educators who have experienced adolescent alcohol abuse to lead sessions, share individual experiences, and convey strategies to reduce and prevent alcohol abuse. An orientation session can provide guidance to the details of the program. By training and equipping several instructors, change can be promoted by impacting multiple communities.

I would also like to see policy implementation in the community as a compulsory feature of the curriculum where adolescent students learn about cardiac health and alcohol consumption. As similar campaigns have occurred to raise awareness to mitigate bullying, cardiac health education and alcohol consumption can raise awareness to mitigate cardiovascular disease.

Policy topics can incorporate basic knowledge of the heart, promote healthy activities, and describe the impacts of alcohol consumption and cardiovascular disease. Technology can be utilized as a medium for audio, video, and interactive media distribution, which is appealing to the youth (Doumas & Esp, 2019).

The M.Ed. program at TRU allowed me to acquire the knowledge and skills in research, educational technology, and curriculum development. My experiences as a hospital worker have allowed me to reflect on the gaps where cardiac education can be applied to convey cardiac health information and help reduce cardiovascular disease. My community education model can affect change to a larger context to mitigate the deaths from cardiovascular disease. A sense of urgency is needed to provide knowledge and training to the community. As I experienced from my personal journey, education is the answer.

Summary

In this chapter, I discussed the application and how the argument applied in a hospital setting with the pediatric emergency department. I also defined a community model to promote change by utilizing cardiac health education to a larger context. I described my educational journey before and during my M.Ed. program. I made connections from the literature review to my experiences.

In the next chapter, I will conclude the paper and restate the argument. I will summarize the three preceding chapters and show how the chapters are connected to each other and to the argument. I will also explain the success of the paper, including implications of the research from the literature review and application.

Chapter Four: Conclusion

In this chapter, I conclude the paper and restate the argument. I claim that ongoing cardiac health education with policy implementation can effectively reduce excessive adolescent alcohol consumption and prevent the long-term dismal outcomes of cardiovascular disease. This chapter will proceed by summarizing the three preceding chapters and describe how the chapters are connected to each other and to the argument. I explain the success of the paper, including implications of the research from the literature review and application.

In Chapter one, I introduced the events that led to the development of my topic on cardiovascular disease. I became interested in studying and working in the field of health care early in life. My passion developed when I returned to school following a ten-year break. I was amazed by the complexity of the human body. After I completed a biology upgrade course, I decided that the cardiovascular system was an area to pursue further studies. The heart sustains life for many years; however, the heart is vulnerable to disease. When I learned that cardiovascular disease was the number one cause of global death, I became even more passionate to study the heart and investigate the reasons for cardiovascular deaths. I wanted to learn how cardiovascular deaths could be reduced and prevented.

Various substances like alcohol affect the heart. Education provides guidance to parents, stakeholders, and adolescents to promote cardiac health and wellness. Implementing policy promotes the ongoing and sustainable education to positively impact communities. I recognized the core courses from the M.Ed. program that provided me with knowledge and training and helped me to develop the argument. Cardiac education can reduce excessive alcohol use in adolescents and prevent the long-term negative impacts on the heart.

In Chapter two, I described how the literature supported the argument. I provided an overview of cardiovascular disease as the leading cause of global death. The literature stated that high blood pressure was a precursor to cardiovascular disease and alcohol consumption led to high blood pressure. The impact of alcohol consumption also led to cardiac arrhythmias, heart failure, and self-destruction of cardiac muscle cells. Patterns of consumption included binge drinking. Alcohol cardiomyopathy was defined with examples. The influences of adolescent alcohol consumption included peer pressure and life stressors. Peer pressure was among the top influences for adolescent alcohol use. The stressors of life contributed to adolescent influence on alcohol use from increased sensitivity to life circumstances.

The second section of Chapter two outlined the benefits of cardiac health education and policy implementation to reduce excessive alcohol consumption and prevent cardiovascular disease. The literature provided evidence on how education reduced the risk of alcohol-related harms. Formal programs included family-based interventions and school-based interventions that reduced excessive alcohol consumption. Parents and educational stakeholders supported the reduction of adolescent alcohol use. Family-based interventions identified parents as the central focus for modelling behaviours that demonstrated strong disapproval for excessive alcohol use. School-based interventions showed reduction of alcohol consumption through educational campaigns and questionnaires. Technology proved to be an effective educational distribution platform to youth. The literature review from Chapter two connected to the argument from Chapter one. Scholarly work provided evidence on the association of education with the reduction of adolescent alcohol consumption and prevention of cardiovascular disease, which supported the claims in the argument.

In Chapter three, I discussed the application and how the argument applied in a practical context. I described my journey before and during the M.Ed. program. My experiences as a hospital worker allowed me to determine the needs for cardiac health education. The first setting was in the hospital environment and how cardiac education can be applied in the pediatric emergency department. My engagement of routine patient care helped me to identify the gaps where cardiac health education can be applied to reduce excessive alcohol consumption. Hospital-based cardiac education required strategic planning with the efforts of multiple stakeholders. Questionnaires and pamphlets conveyed cardiac health education to parents, caregivers, and adolescents. Follow up appointments reinforced cardiac health information and emphasized beneficial practices for reducing excessive adolescent alcohol consumption. Policy implementation within the hospital promoted sustainable education that prioritized prompt triage registration for alcohol overdose patients, regular nursing care, cardiac education, and follow up.

In the second part of Chapter three, I described my experiences as an educational leader in developing a community model for cardiac health education that impacted a larger population. This model was an instructor-led workshop that taught community members about cardiac health for reduction of alcohol use and the prevention of cardiovascular disease. The objectives of this community-based course focused on education and integrated knowledge toward excessive alcohol consumption. Collaboration among learners in the workshop promoted the reinforcement of knowledge and support. Developing a program to affect multiple communities required additional trained instructors. Policy implementation can be applied in this context to promote awareness of cardiovascular disease in the educational curriculum. Chapter three is connected to Chapter two by integrating scholarly work toward practical applications of program-based interventions in the hospital environment and in the community.

I believe this paper has successfully advanced the argument as the literature showed how evidence-based programs and interventions utilizing education were effective in reducing alcohol consumption and preventing cardiovascular disease. The impact of this morbid disease on public health prompts a sense of urgency for action to mitigate the number of deaths caused by cardiovascular disease.

The conversation from a larger context involves affecting change in multiple communities through cardiac health education to parents, stakeholders, and adolescents. More instructors can lead workshops to affect change around the world. As cardiovascular disease impacts the number of global deaths, education also needs to affect beneficial change from a global context. The paper contributes to that conversation through the strategic application of evidence-based programs and interventions with policy implementation to reduce adolescent alcohol use and prevent global deaths from cardiovascular disease.

Based on the findings in the literature, I am convinced that cardiac health education for parents, adolescents, educational stakeholders, and members of the community, with policy implementation can reduce adolescent alcohol use and prevent the long-term negative impacts of cardiovascular disease.

Summary and Implications

In this chapter, I restated the argument by claiming how sustainable cardiac health education with policy implementation can effectively reduce excessive adolescent alcohol use and prevent the long-term dismal outcomes of cardiovascular disease. This chapter summarized the three preceding chapters and described the connection to each other and to the argument. Each chapter became the foundation for the next chapter. As an example, Chapter one explained the development of the argument. Chapter two examined current and contemporary literature to

support the argument. Chapter three elaborated practical applications in the hospital environment and in the community. Chapter four provided a conclusion of the preceding chapters. I also stated evidence on the success of this paper that integrated the literature in a practical context.

Implications in a practical setting describe the changes that I would like to see happen in the world because of this paper. Cardiac health education needs to become a priority compulsory feature of the curriculum for adolescent students. With cardiovascular disease as the leading cause of global death, education can change that outcome. Campaigns have occurred to raise awareness to mitigate bullying. Similarly, cardiac health education with knowledge about excessive alcohol consumption can raise awareness to mitigate cardiovascular disease. These initiatives can be school-based campaigns, family-based interventions, hospital-based interventions, and community-based interventions, which can affect change. Evidence from the literature demonstrates effectiveness in programs and interventions for reducing alcohol consumption and preventing cardiovascular disease. Multiple campaigns and intervention programs can affect change to a larger context and reach communities around the world.

Implications for policy implementation needs to be developed for sustainable cardiac health education. Evidence-based campaigns and intervention programs for reducing excessive alcohol consumption can occur, but without strategic development and utilization of policy, campaigns and programs will be transient applications. The literature states how policy can promote beneficial change to society. Parents, educational stakeholders, adolescents, and community members need to be involved in cardiac education. Coupled together, cardiac health education and policy implementation can reduce excessive adolescent alcohol use, prevent the negative cardiovascular outcomes, and affect global change to mitigate the number of deaths from cardiovascular disease.

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