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INTRODUCTION

Gender, a social construct, can intersect with other social determinants shaping cardiovascular health starting prenatally and extending across the lifespan.¹⁻³

What are we missing in public health and medicine? Despite our scientific progress:

- In 2016 the U.S. was ranked as low - 43rd in the world for life expectancy

Unless we make significant changes, the United States is projected to rank even lower:

- 64th in the world for life expectancy by the year 2040⁴

It is imperative to move beyond a 'sick-care' system that focuses primarily on the symptoms that bring people into the doctor's office, but instead invest in creating a health-care system that starts in our early years.

This brief presents empirically-based data regarding the powerful roles that social determinants of health (SDoH) play in the health and well-being of women and girls, specifically related to the increased gender-based risk for cardiovascular disease (CVD). This brief reviews the literature, highlights problematic health outcomes, and makes recommendations for practitioners, policymakers and community members to reduce risks and increase healthy outcomes.

SOCIAL DETERMINANTS OF HEALTH

As social status *decreases*, morbidity and mortality *increases*⁵ across a range of health conditions, including CVD. The Social Determinants of Health approach is broadly utilized in public health to understand how psychosocial and contextual factors impact health outcomes such as CVD.⁶ SDoH are "the conditions in the environments where people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks."⁷

Gender overlays these general SDoH categories, multiplying the adverse impacts on the cardiovascular health of women and girls.



Figure 1: Social Determinants of Health in the U.S.⁷

GENDER AND LIFE COURSE CONTEXT

In the United States, CVD is responsible for one-third of all deaths, due to adverse social conditions.¹² These social conditions can appear early in life contributing to disease risk and impact developmental trajectories well into adulthood.¹²

Gender plays a compelling part. It is socially produced and shapes the ways that one navigates social norms, roles, rights, behaviors, and relationships.¹ Gender roles reflect society's behavioral expectations for how one should act, look, and manage emotional experience and its expression.¹³ Gender interacts with other social determinants and influences cardiovascular health throughout childhood, adolescence, and into adulthood.¹

PHYSICAL INACTIVITY


Through the traditional modes of socialization, boys are taught to be more physical than girls. Sedentary lifestyles, and physical inactivity are both risk factors for CVD across the lifespan.¹ As early as six to eight years old, girls are identified as more sedentary than boys.¹⁴ As adolescents, girls' activity levels are reduced by up to 83%, with most girls participating in little more than required gym classes.¹⁵ Furthermore, young girls and women become alerted to threats to their sexual and physical safety, and are less likely than men to exercise at night or ride bikes through cities, which consequently greatly reduce their capacity to be as freely active as men are in public spaces.¹⁶


CIGARETTE SMOKING

One of the most profound risk factors for CVD is the smoking of cigarettes. In the United States, women smoke at similar rates to men.¹⁷ Girls have increased smoking rates during adolescence (a developmental time frame that can include rapid weight gain) in part as a strategy to battle body image issues, and control weight.¹⁸ Of girls in the U.S. who frequently smoked, 46% reported doing it to control their weight, claiming that they were too fat.¹⁹

PSYCHOSOCIAL STRESS

Adverse childhood experiences (ACEs) are strong predictors of later CVD and early mortality among adults.²⁰⁻²¹ A report from the landmark Adverse Childhood Experiences study found that participants who reported experiencing:

 or more ACEs have a **two-fold higher** risk of developing CVD compared to individuals without ACEs.²²

 or more ACEs died nearly **20 years** earlier (mean of 60.6 vs 79.1 years) compared to individuals without ACEs.²²

There are different types of ACEs that can increase health risk behaviors over time (see Table 1).²²

ACES DOMAINS	CATEGORIES	EXAMPLES
ABUSE	PSYCHOLOGICAL ABUSE	Insult; swear; menace of physical violence
	PHYSICAL ABUSE	Push; grab; slap; hit (with or without physical injuries)
	SEXUAL ABUSE	To be touched or forced to touch someone in a sexual way; attempted or successful forced sexual intercourse
HOUSEHOLD DYSFUNCTION	SUBSTANCE USE	Living with someone with alcohol problems or who consumes illicit drugs
	MENTAL ILLNESS	Living with someone with mental illness or depression or who attempted suicide
	MOTHER TREATED VIOLENTLY	Physical violence or threat of violence against mother (or stepmother)
	CRIMINAL BEHAVIOR IN THE HOUSEHOLD	Someone in the household sent to prison.
NEGLECT	PARENTAL SEPARATION OR DIVORCE	Separation from father, mother, or both (e.g. parental divorce, death, or being placed in a children's home)
	EMOTIONAL NEGLECT	Do not feel loved or cared by family members; do not have the family as a source of strength or support
	PHYSICAL NEGLECT	Not taken to a physician when needed; do not have enough to eat (even when food was available); had to wear dirty clothes; parents too drunk or high to care for the children

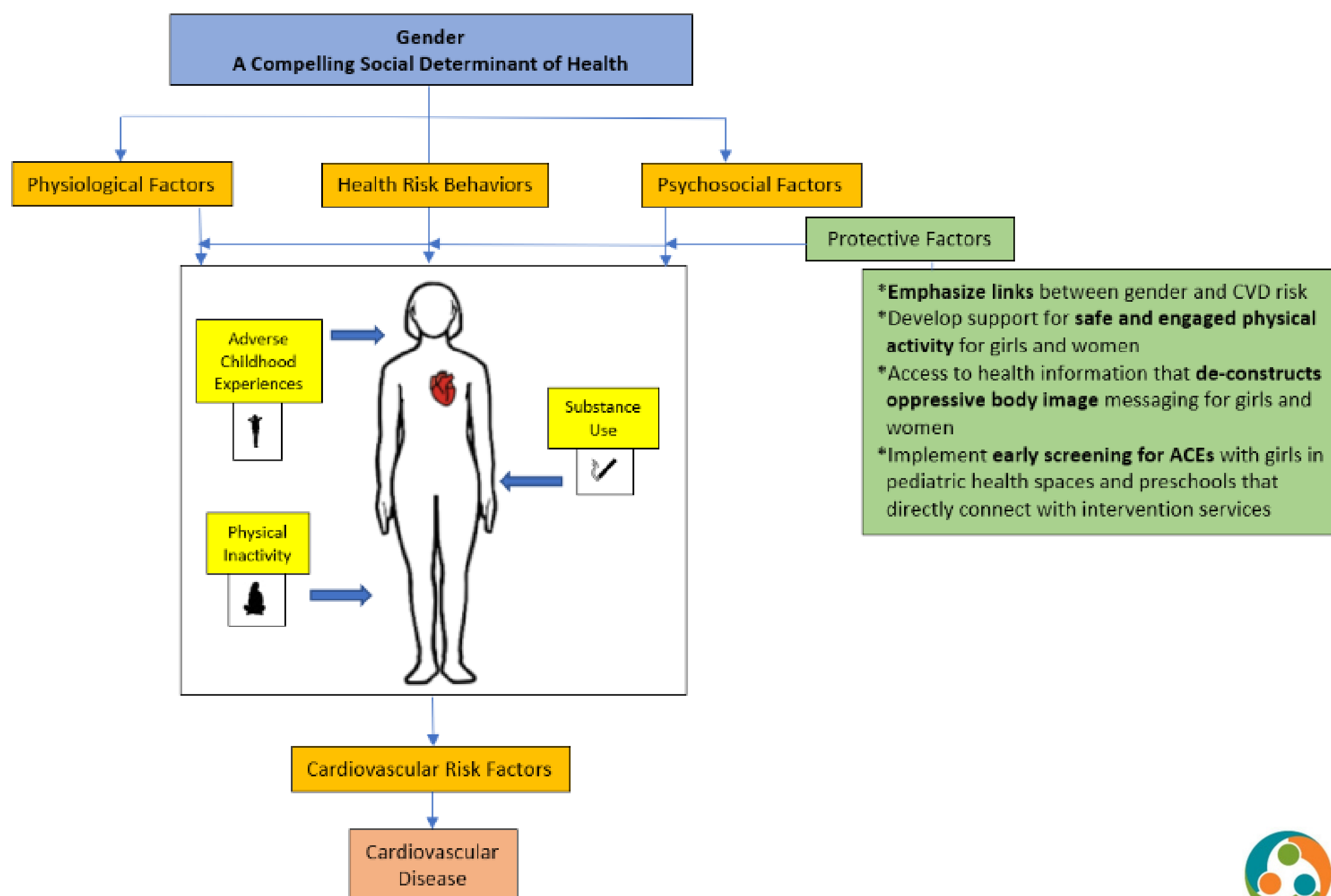
Child sexual abuse is one of the more harmful and destructive of ACEs that children suffer.²³ Unfortunately, one in three girls will experience sexual abuse before they turn 18 years old and their health and well-being are negatively impacted, leaving them feeling ashamed, confused, scared or angry.²³ Trauma experienced early in life (especially before age 16) is a potent predictor of CVD later during adulthood.¹

Table 1: Adverse Childhood Experience (ACE) domains²²

RECOMMENDATIONS

Future directions of research and practice must be re-evaluated to directly eliminate adverse social determinant influences on health outcomes. Mechanisms by which gender affects health are not well understood, and is a significant research opportunity. The following recommendations (see Figure 2) can assist families, practitioners, policymakers, and researchers in implementing simple steps that will improve CVD health outcomes for women and girls:

Figure 2: Gender as a Compelling Social Determinant of Health (Adapted from Godoy et. al.)²⁵



FIRST:

Our communities continue to **lack education** regarding CVD risk factors.²⁴ This is a prevention barrier that can be eliminated by:

- ▶ Awareness campaigns, school curricula, and free community-based health programs emphasizing links between gender and CVD
- ▶ Public Service Announcements that include gender as a social determinant and educate our communities about risk factors.
- ▶ Include information about:
 - ◆ physical inactivity
 - ◆ smoking behaviors
 - ◆ psychosocial stress

THIRD:

We must question and re-construct the ways in which girls and boys are socialized regarding gender.

- ▶ Policy development is needed that (modeled after high gender-equality nations) includes paid maternity leave, lactation spaces, and egalitarian values in the workplace.
- ▶ Starting at home, in schools, and throughout our communities, programs readily available to families and teachers that counter rigid and oppressive body image messaging for girls, and encourage discussion regarding freedom of choice. Critical topics should include domestic and labor participation, family roles, leadership positions, and personal power.

SECOND:

Women and girls need to have access to safe spaces for exercise and physical activity.

- ▶ Like on many campuses, state or locally mandated installation of 'blue-light stations' at each major intersection and frequently-used community areas so that all community members, including women and girls can have safety networks in place.
- ▶ Increased availability of self-defense classes that are free to the public and are accessible in rural and urban areas, so that when women and girls are out, they know they have acquired skills that provide themselves protection

FOURTH:

Identifying and creating change in early childhood will transform the health outcomes of CVD in later life.

- ▶ Practitioners and policymakers must work together to develop and implement an early screening instrument that performs a dual purpose. It should be informed regarding gender as a SDoH, and should specifically measure ACEs for young girls.
- ▶ Design and implementation of clearly defined network of supports and resources that address girls' developmental health needs that is easily accessed by families and health care systems.
- ▶ Discovering adverse experiences early on and connecting girls directly with needed services will offer supports to reduce or eliminate CVD risk and increase their ability to thrive.

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