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# Why Girls? The Importance of Developing Gender-Specific Health Promotion Programs for Adolescent Girls

*Tracy R. Nichols, PhD and Amanda S. Birnbaum, PhD, MPH*

Advances in gender-based research have begun to elucidate women's unique risk factors for the major causes of morbidity and mortality in the United States.<sup>1</sup> Women's health issues are distinct from men's due to biological, social and economic differences and although a woman's life expectancy is greater than a man's, women experience greater morbidity throughout their lifespan.<sup>1</sup> In addition, women act as agents of change for health promotion in the home and as primary healthcare decision-makers for their families.<sup>1</sup> In this article, we argue for the importance of developing gender-specific health promotion programs for adolescent girls using the following reasoning: 1) in western societies, a large share of morbidity and mortality are attributable to lifestyle health behaviors (e.g., substance use, diet, physical activity), 2) there is evidence that the health consequences of lifestyle behav-

iors are worse in some groups of women than in men, 3) life transitions, particularly during early parts of the life course, create windows of opportunity for shaping and habituating lifetime health behaviors, 4) many existing health behavior interventions have differential effectiveness by gender and 5) effective girl-focused programs will have broader implications through women's roles in shaping families' health behaviors and practices.

Adolescence is a time when many girls begin to develop unhealthy behaviors that can affect myriad short- and long-term health outcomes across their lifespan.<sup>2</sup> There is evidence that smoking, physical activity and diet are habituated during adolescence, and some physiologic processes of adolescence, such as peak bone mass development, have direct effects on future health.<sup>3-4</sup> Establishing healthy practices, beliefs and knowledge among adolescent

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girls will decrease morbidity and mortality among adult women and potentially affect the health of men and children through women's role as healthcare agents. This paper provides a brief review of lifestyle health behaviors among women and girls and argues for the importance of developing gender-specific health promotion programs. The paper focuses around three behaviors: substance use, diet and physical activity. We chose these behaviors because they are commonly targeted in school- and community-based programs and are most often implemented in co-educational settings that de-emphasize gender. Many other health behaviors also affect morbidity and mortality, most notably those related to sexual behaviors as well as intentional and unintentional injury. Although some of our conclusions may be relevant to those behaviors as well, our primary focus is on the lifestyle behaviors described below.

## **Drug Use Among Women and Girls**

Although overall rates of drug use are higher among men than women, the gender gap has been decreasing, especially among younger age groups and users of specific drugs such as tobacco and prescription drugs.<sup>5-8</sup> These patterns are pronounced in adolescents: marijuana use is still slightly higher among boys but the rate of illicit drugs other than marijuana is slightly higher among girls, mostly due to girls' higher rates of inhalant, amphetamine and tranquilizer use.<sup>5</sup> In addition, diet pill use among girls is dramatically higher than boys, with 25% reporting some use and 9% reporting use in the

last month.<sup>5</sup> National data shows lifetime smoking amongst girls to be 28% in the 8th grade, increasing to 52% in the 12th grade; boys show similar rates with 28% reporting cigarette use in the 8th grade and 54% by 12th grade.<sup>5</sup> Girls' alcohol use has also increased in recent years, becoming comparable with boys' use: 46% of both boys and girls report lifetime alcohol use in the 8th grade and 77% in the 12th grade. Levels of drunkenness are also high with 21% of 8th grade and 56% of 12th grade girls reporting lifetime episode of drunkenness (boys' rates are 19% in 8th grade and 60% by 12th grade).<sup>5</sup> The consequences of this acceleration in girls' and women's substance use include a shift in the burden of disease and patterns of morbidity and mortality by gender. For example, despite the overall decline in lung cancer deaths in the United States and other developed countries, deaths due to lung cancer have increased over 600% among women and lung cancer, surpassing breast cancer as the leading cause of cancer death among American women.<sup>9</sup>

Research has begun to identify health disparities in the consequences of drug use for women, with women demonstrating greater health consequences at the same level of behavior as men.<sup>10-12</sup> For example, female alcoholics have more drinking problems and higher death rates than male alcoholics and women are more susceptible to brain damage, cardiac problems and liver disease as a result of their drinking compared to men.<sup>11-12</sup> Evidence is also accumulating which indicates that early adolescence is a period of heightened risk for health consequences for young girls who begin substance use, such as an increase in the risk of breast cancer among women

who began smoking in adolescence and a greater vulnerability among girls, relative to boys, to the effect of smoking on lung function.<sup>13-14</sup>

Women's drug use also has unique costs to both the individual and society given their role in reproduction. The highest prevalence of use among women, regardless of substance, occurs during childbearing years.<sup>6</sup> In fact, alarming numbers of adult women and adolescents continue to use alcohol, tobacco and other drugs during pregnancy.<sup>6-7</sup> The negative effects of smoking, alcohol and other drug use on fetal health and development are well established and include low birth weight, pre-term birth, fetal alcohol syndrome and a variety of birth defects and developmental delays.<sup>15</sup> In addition, prenatal maternal smoking has been associated with adolescent children's smoking and this effect is stronger for daughters than sons.<sup>16</sup> Scientific evidence is also accumulating on effects of prenatal smoking on behavioral problems, including conduct disorder, in both toddlers and adolescents.<sup>17-18</sup>

Given that girls are either catching up to or have caught up to boys in terms of drug use rates, and the unique health consequences drug use holds for women both individually and for subsequent generations, it is easy to see why drug use has become one of the most important public health concerns for women.<sup>5</sup>

### **Women, Physical Inactivity and Poor Diet**

Physical inactivity and poor diet are also critical health behaviors contributing to substantial morbidity and mortality. De-

spite a wealth of evidence that physical activity confers substantial physical and mental health benefits, national data indicate that in 2003, only 22% of women and 32% of men met recommended levels of vigorous physical activity, and 45% of women and 50% of men met recommended levels of moderate physical activity.<sup>19</sup> Data from the same national survey indicate that 27% of women and 18% of men consumed the recommended five or more daily servings of fruits and vegetables, but estimates from another national survey placed estimates at 37% of women and 59% of men, respectively.<sup>19-20</sup> That survey also indicates that 23% of women and 35% of men met recommendations for fat consumption ( $\leq 30\%$  calories from total fat), and 16% of women and 39% of men met recommendations for dietary fiber ( $\geq 20$  grams/day).<sup>20</sup> Diet and physical activity patterns are of increasing importance as their role in contributing to the leading causes of death and disability is better understood.

These patterns have their roots in youth. Data clearly indicate that physical activity levels decline with age, and the transition from childhood to adolescence is a period of marked decrease in physical activity in both girls and boys.<sup>21</sup> However, boys generally engage in more physical activity at each age, and there is a particularly sharp decline among teenage girls.<sup>22-23</sup> According to the most recent Youth Behavior Risk Surveillance Survey (YRBSS), 40% of high school girls and 27% of boys reported insufficient physical activity in the past seven days, and 13% of girls and 10% of boys reported no vigorous or moderate activity at all.<sup>24</sup> One of the few large-scale physical activity intervention studies conducted with

young adolescents underscores the gender discrepancy. In that study, conducted in <sup>24</sup> middle schools, investigators found that boys were more active than girls both during physical education (PE) classes and on school grounds during non-PE times, and after 2 years of intervention, significant increases in physical activity were detected among boys but not girls.<sup>25-27</sup>

Gender differences in diet vary by type of food or nutrient. Fruit and vegetable intake is inadequate but comparable among girls and boys, with the 2003 YRBSS indicating 20% of girls and 24% of boys meeting recommendations. In contrast, milk consumption is also low among all youth but markedly more so in girls than boys, of whom only 11% and 23%, respectively, met the recommendations ( $\geq 3$  glasses/day).<sup>24</sup> Calcium intake during adolescence is particularly important for girls, and milk intake is a strong correlate of total dietary calcium intake.<sup>28</sup> Maximizing peak bone development in adolescence through increased calcium intake and reasonable levels of physical activity have been identified as strategies to reduce risk developing osteoporosis in adulthood, a condition that disproportionately affects women.<sup>29</sup>

Clearly efforts to change health behaviors, such as smoking, diet and physical activity, among women and girls are a critical step towards improving the health of the nation.

## Vulnerability of Adolescent Girls

The role of gender in adolescent health behaviors is evident but not fully understood. The complicated relationships

females have with their bodies begin or deepen during adolescence, as pubertal changes occur in a social context of gender-based messages about body shape, size and normative behaviors. At the same time, the naturally occurring changes associated with puberty include a 20% increase in body fat.<sup>30</sup> Adolescent girls report an increased concern with body weight and increased dieting practices, with 62% of girls reporting that they were trying to lose weight in the past month.<sup>24</sup> Girls are also more likely than boys to think they are overweight.<sup>24</sup> A three-year qualitative study of adolescent girls' health behaviors found an overwhelming use of "fat talk" or conversations that centered on issues of dieting and weight control.<sup>31</sup> Gender differences appear especially salient for physical activity. Girls report more barriers to physical activity than do boys, including both social/appearance preoccupations and access issues.<sup>32-33</sup> Girls also report lower self-efficacy for overcoming barriers to physical activity than do boys.<sup>34</sup> Drug use among adolescent girls has also been tied to their greater concerns regarding weight and body image, as well as the sharp declines in self-esteem that occurs among girls between the ages of 12 and 15, and the way women are portrayed in the media.<sup>35-36</sup>

Marketing approaches targeted to adolescent females can play a large role in changing social norms about the acceptability of health behaviors among women.<sup>7</sup> While cigarette ad campaigns designed to promote the concept of the thin and independent woman (i.e., "You've come a long way, baby" - Virginia Slims) have received a great deal of attention over the years, less attention has been paid to recent marketing of alcohol to teenage girls.<sup>7,36</sup>

“Alcopops” are low-calorie, sweet-flavored malt beverages that are being promoted by liquor companies to adolescent girls in an effort to increase underage drinking.<sup>37</sup> Less research has focused on commercial marketing of unhealthy eating and poor physical activity to girls, in part because advertisements do not explicitly promote such behaviors. However, messages conveying norms and expectations regarding preoccupation with weight and dieting, for example, are embedded in advertisements and promotions for a range of commercial products, and are often directly involved in plot or character development in popular adolescent movies and television shows. Moreover, female role models for healthy activity and eating are limited, tending towards images of elite athletes and highly idealized body types. Images of females with varied, “realistic” body sizes and shapes either eating balanced meals or engaging in physical activity and being regarded positively for doing so are scarce in both the media and community settings.<sup>38</sup>

While it is critical to examine the content of messages sent to girls from peers, parents, the media and society at-large, with regard to health behaviors, it is equally, if not more important, to explore the meaning, emotion and perceptions of social relations that these messages evoke in girls. In addition, we also need to examine how those meanings are understood in conjunction with parallel messages girls receive during adolescence. How do girls interpret the messages they receive with regard to health behaviors in the context of the messages they receive about femininity, responsibility, identity, independence and appearance? Understanding the context of health within the female lifespan and what

specific health behaviors mean for women and girls is crucial for developing effective prevention strategies.

Reproductive changes such as puberty, pregnancy and menopause, are important transitional periods for women and have been identified as optimal times to intervene for health behavior changes.<sup>39</sup> Early adolescence is marked by multiple transitions: onset of puberty, transition to middle school, rapid developmental growth, shifts in familial and social relationships, and increasing autonomy and choice.<sup>2</sup> The timing of reproductive transitions, specifically whether a transition occurs around the same time as the rest of a cohort or off time (earlier or later than their cohort), is also an important area of study especially in terms of puberty and health behaviors among girls. A convergence among recent studies finds that early maturation in girls is linked to greater alcohol, tobacco and/or substance use, earlier initiation and possibly faster progression from cigarette and alcohol use to other drugs and higher rates of substance abuse disorder by mid-adolescence.<sup>40-42</sup> Several of these studies also find evidence for early maturing girls having higher rates of depression and conduct disorders than other girls. Understanding how health behaviors and attitudes change during key transitional periods is vital for developing effective interventions.

Gender socialization intensifies during puberty, with many girls experiencing negative reactions to the adult female roles they are expected to assume.<sup>43-44</sup> These gender socialization processes often convey a norm for passive or “nice” behavior and leave little room for expressing any anger girls may be experiencing. Interestingly, this is less true among African-Ameri-

can girls, who are more often socialized to exhibit both feminine and masculine traits.<sup>45-46</sup> The societal norm of the “good girl” is often in direct opposition to the assertive behaviors taught in many effective prevention programs.<sup>46</sup> Role expectations at home and in society, the importance of relationships and the stress of physical appearance are just some of the concerns for girls that are left out of current prevention programs.<sup>46</sup>

According to the Theory of Meanings of Behavior adolescents bestow health-related behaviors such as smoking and eating, with affective and personal meanings; when these meanings are activated, rational cognitive decision-making processes are bypassed.<sup>47</sup> Health behaviors may be less influenced by cognitive processes and instead be triggered by heightened emotions, including excitement, anger, depression and stress, yet the majority of drug prevention strategies focus solely on cognitive-behavioral techniques and ignore the meaning and context of these behaviors in girls’ lives.<sup>48-49</sup> It is critical to incorporate the contexts in which adolescent girls live their lives into the design and evaluation of health promotion programs, and to include within these contexts differences by race, ethnicity, culture and social class.

## Developing Gender-Specific Programs

The past twenty years have shown a proliferation of research on the effectiveness of prevention strategies among adolescents, with several programs demonstrating consistent positive findings when implemented completely and with fidelity.<sup>50</sup> While a

variety of school-based, family-based and community-based programs have been effective at changing adolescent health behaviors, little is known on the effectiveness of these strategies by gender or on how programs can be tailored to be more gender-sensitive or gender-specific. The few studies that have examined gender differences directly have found mixed results, with some showing effects among girls not boys and others showing effects for boys not girls.<sup>27,51-54</sup>


The majority of health promotion programs are described as gender-neutral even though they are primarily based on the experiences and developmental tasks of adolescent boys.<sup>43</sup> Self-in-Relation theory posits that gender differences exist in how adolescents form their identities, with girls developing their definitions of themselves through connections with significant others, and boys developing their identity through separation and individuation, yet most programs emphasize issues of individuation over connection.<sup>55-56</sup> Many disseminated programs also include activities such as competitive games, that are more appealing to boys than girls, thereby potentially affecting recruitment issues as well as salience.<sup>57</sup> The field of health promotion would benefit from studies employing a gender-based analytic approach.<sup>43</sup> This type of analysis examines the socially-constructed characteristics of men and women (gender), along with their biological characteristics (sex). A gender-based analysis goes beyond entering sex as a control variable or interaction term and instead incorporates an exploration of social roles and expectations of behavior by gender, as well as opportunities to engage in specific behaviors, into the research design.<sup>58</sup> Gen-

der-based analytical approaches are critical in understanding women's health behaviors and developing effective intervention strategies for women and girls. Applying this approach to the development of health promotion programs would help ensure that critical influences and implications of health behaviors for women are included in program design.

Gender-based analytic approaches also allow for an assessment of the critical components of an effective intervention. For example, Wechsberg and colleagues compared a standard and proven-effective HIV prevention intervention with an intervention developed to be woman-focused.<sup>59</sup> The woman-focused intervention included a component that incorporated the personal social contexts of participants' lives into program delivery. While both interventions were found to be effective in reducing crack use and sex-risk behaviors relative to a delayed-treatment control group, the woman-focused intervention showed greater improvement in decreasing unprotected sex and increasing other factors such as employment and housing that are associated with improved health outcomes.

### **Recommendations**

In sum, adolescence is an important time in the development of health behaviors, especially for girls, and it intensifies the already complex relationships girls have with their bodies. Due to women's biological role in reproduction and their social role as healthcare agents within families, developing effective gender-specific health promotion programs for girls would improve the

health of both women and girls, as well as the health of the nation. Gender-specific prevention programs should include opportunities for relationship building between girls and adult female role models; they should strengthen family functioning; incorporate the everyday realities of women's and girls' lives; include interactive skills training (i.e., assertiveness), and provide opportunities for girls to debunk societal pressures to engage in health compromising behaviors. In addition, effective gender-specific programs should be culturally-tailored to address the unique needs of girls and women from varying races, ethnicities and social classes.<sup>60-61</sup> 

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