

## **ABSTRACT**

**BACKGROUND:** Youth violence reduction is a public health priority, yet few studies have examined secular trends in violence among urban youth, who may be particularly vulnerable to numerous forms of violence. This study examines 10-year secular trends in the prevalence of violence-related behaviors among Philadelphia high school students.

**METHODS:** Repeated cross-sectional data were analyzed from five waves of the Philadelphia Youth Risk Behavior Survey (YRBS) from 2003-2013. Sex-specific multivariate regression models were used to examine secular trends in multiple types of violence, accounting for age, race/ethnicity, and sampling strategy.

**RESULTS:** In 2013, the most prevalent violent behavior was physical fighting among boys (38.4%) and girls (32.7%). Among girls, the prevalence of sexual assault and suicide attempts declined between 2003 and 2013 ( $\eta^2 = -.13$ ,  $p = .04$  and  $\eta^2 = -.14$ ,  $p = .007$ , respectively). Among boys, significant declines in carrying a weapon ( $\eta^2 = -.31$ ,  $p < .001$ ), carrying a gun ( $\eta^2 = -.16$ ,  $p = .01$ ), and physical fighting ( $\eta^2 = -.35$ ,  $p = .001$ ) were observed.

**CONCLUSIONS:** Whereas the prevalence of some forms of violence stabilized or declined among Philadelphia youth during 2003-2013 timespan, involvement in violence-related behaviors remains common among this population. Continued surveillance and evidence-based violence reduction strategies are needed to address violence among urban youth.

**Keywords:** youth violence; youth risk behaviors; adolescent health; firearms

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# Author Manuscript

Despite declines in the prevalence of youth violence in the United States (US) in the past 2 decades,<sup>1</sup> violence among adolescents remains a public health priority.<sup>2</sup> Youth violence is a major contributor to morbidity and mortality in the US. For example, interpersonal violence accounts for over 4000 deaths among people between the ages of 15 and 24 in the US annually and is the third leading cause of death among this age group.<sup>3</sup> Acts of self-directed violence are also highly prevalent among this age group, with suicide accounting for nearly 5000 deaths among 15-24 year-olds in 2013.<sup>3</sup> Involvement in violence-related behaviors has long-lasting health impacts beyond the direct harm induced by the violent act including increased risk of cardiovascular disease,<sup>4,5</sup> post-traumatic stress disorder,<sup>6</sup> major depression, and substance abuse.<sup>7</sup> As a means to promote innovative violence reduction interventions, *Healthy People 2020* (HP 2020) has set specific objectives of 10% reductions in physical fighting among adolescents and children's exposure to violence.<sup>2</sup>

Nationwide surveillance of youth violence provides essential information regarding broad secular trends (ie, the long-term occurrence of an outcome), and informs general violence reduction goals, such as *HP 2020*. However, these macro-level examinations may not be representative of trends in youth violence among specific populations and within specific high-risk localities. Compared to suburban youth, urban youth may be disproportionately affected by the economic, health, and academic consequences of violence given the clustering of multiple types of violence in communities, a greater overall accumulation of life stressors, and a lack of resources that promote resiliency.<sup>8,9</sup> Qualitative studies have identified the breadth and context of

common violent experiences among urban youth that are not typically captured by nationwide surveillance efforts. For example, school safety, personal victimization and neighborhood crime, violence, and death were identified as common childhood adverse exposures among low-income Philadelphia adolescents.<sup>10</sup> Further, local-level examinations of trends in youth violence may elucidate context-specific protective and risk factors for youth violence, which can be informed by the local environment. Trends in a specific type of violence may be especially striking due to a new policy or change in the physical environment within a specific geographic area.

Conducting comprehensive type- and venue-specific surveillance of violence among high risk populations, such as urban youth, is essential to identify gaps in current violence prevention programming, understand how demographic or other community-level changes may influence youth involvement in violence, and ultimately improve the health of highly-vulnerable populations.

Self-directed violence among urban, minority youth in particular, is a type of violence that is poorly understood. Suicidal behavior is traditionally thought to be uncommon in this population because of frequent misclassification of suicide as an accident, the high prevalence of protective factors such as religiosity, underreporting due to stigma,<sup>11-13</sup> and less disclosure of suicidal ideation among minority youth compared to their white counterparts.<sup>14</sup> Despite this belief that suicidal behavior is not prevalent among minority youth, evidence from the national Youth Behavior Risk Survey (YRBS) indicates that a higher proportion of black and Hispanic high school students report attempting suicide than white students.<sup>1</sup> Some local-level

examinations of urban youth have replicated these results,<sup>15,16</sup> but others have not found differences in the prevalence of suicidal behavior by race/ethnicity.<sup>17</sup> Further research is needed to understand self-directed violence among urban, minority youth and how it may be changing over time, in particular.

Sexual assault is another form of violence that has significant negative short and long-term health implications including contributing to post-traumatic stress disorder and major depression.<sup>18</sup> Nationally, sexual assault is highly prevalent among adolescents, with some estimates suggesting that adolescents are more likely than individuals of any other age group to experience sexual assault.<sup>19</sup> Among nationally-representative samples, 12% of adolescent girls and 4% of adolescent boys experience some form of sexual assault.<sup>18,20,21</sup> A few studies have suggested that the prevalence of sexual assault is even higher among urban youth than their suburban and rural counterparts.<sup>17,22-24</sup> Given these previous findings, it is especially important to identify and evaluate trends in this form of violence among urban youth to target future interventions to those youth at greatest risk of perpetration and victimization and evaluate the potential effectiveness of current prevention programs.

Given the lack of knowledge about the trends in multiple types of violent behaviors among urban youth the goal of this study is to examine 10-year secular trends in the prevalence of self-reported violence-related behaviors in schools and communities, self-directed violence, and sexual assault among 9th-12th grade students in Philadelphia. Philadelphia is a large metropolitan city with over 1.5 million residents, of which nearly one-fourth are under the age of

18 years.<sup>25</sup> It has a racially diverse population with 43% of the population identifying as African-American and 12% identifying as Hispanic. Approximately 26% of Philadelphia residents reside in poverty.<sup>25,26</sup> Several strategies have been implemented over the past decade to prevent and reduce youth violence in Philadelphia.<sup>27</sup> However, to date, there has not been a comprehensive assessment of involvement in violence among this population.

## **METHODS**

### **Participants**

The current study uses weighted data collected for the Philadelphia YRBS in 2003 (N = 1455), 2007 (N = 2360), 2009 (N = 1287), 2011 (N = 1475), and 2013 (N = 1227). Data from 2005 were excluded because weighted data are not available from the Philadelphia YRBS for that year. All students in sampled classes are eligible to participate. Parental opt out forms are sent home at least one week before survey administration. On the day of survey administration, data collectors explain the survey to the students, and those whose parents opted out or who did not want to participate were not given a survey. Thus, parental consent and child assent was obtained for each participant. In each of the data collection years, the school participation rate was 76% and, within the schools, the student response rate ranged from 73% in 2013 to 78% in 2011. Girls comprised approximately 55% of the study sample across all study years (Table 1). Approximately half of the sample was African-American (54.6% in 2003 and 46.9% in 2013) and the proportion of non-Hispanic white students ranged from 12.1% in 2011 to 15.5% in 2003.

Approximately 20% of participants identified as multi-racial or with race/ethnicity other than African-American/black, white, or Hispanic in any given survey year. Less than 9% of the sample was Hispanic.

## **Instruments**

The YRBS is a self-reported survey of US high school students, administered biennially at the national level by the US Centers for Disease Control and Prevention (CDC) and at the local level by departments of health and education.<sup>28</sup> Students complete the computer-scan questionnaire in pencil during one class period. In Philadelphia, the survey is administered by the School District of Philadelphia and weighted results are provided to the research community if the overall response rate is at least 60%.<sup>29</sup> The surveys use a 2-stage cluster design to obtain a representative study sample after weighting. Thus, if the overall response rate is greater than 60% then the study results can be generalized to all students in grades 9-12 in Philadelphia.<sup>30</sup> Six categories of priority health-risk behaviors are monitored in the Philadelphia YRBS: behaviors relating to injuries and violence, sexual risk behaviors, tobacco use, alcohol and other drug use, unhealthy diet and physical inactivity.<sup>28</sup>

Responses to 11 total questions were examined in this study to determine prevalence of violence-related behaviors. The prevalence of recent involvement in community-based violence was assessed using 3 items: (1) “During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club?” (2) “During the past 30 days, on how many days did you

carry a gun?” and (3) “During the past 12 months, how many times were you in a physical fight?” Responses to these items were dichotomized so that any response of one or more days for carrying a weapon or gun, or one or more physical fights was coded as “yes” while reporting zero days of weapon or gun carrying, or zero physical fights, was coded as “no.”

The prevalence of school-based violence was measured using 4 items: (1) “During the past 30 days, on how many days did you carry a weapon such as a gun, knife, or club on school property?” (2) “During the past 12 months, how many times has someone threatened or injured you with a weapon such as a gun, knife, or club on school property?” (3) “During the past 12 months, how many times were you in a physical fight on school property?” and (4) “During the past 30 days, on how many days did you not go to school because you felt you would be unsafe at school on your way to or from school?” Item (4) was not asked in 2013. Responses for each item were dichotomized as “No” (reported 0 times) or “Yes” (reported 1 or more times).

Sexual assault was measured using a single dichotomous item: “Have you ever been forced to have sexual intercourse when you did not want to?” The prevalence of recent self-directed violence was assessed using three survey items: (1) “During the past 12 months, did you ever seriously consider attempting suicide?” (2) “During the past 12 months, did you make a plan about how you would attempt suicide?” and (3) “During the past 12 months, how many times did you actually attempt suicide?” Responses for each item were dichotomized as “No” (reported 0 times) or “Yes” (reported 1 or more times).



Questions that refer to the past 30 days have 5 possible responses: “0 days,” “1 day,” “2 or 3 days,” “4 or 5 days,” and “6 or more days.” Questions that refer to the past 12 months have 8 possible responses: “0 times,” “1 time,” “2 or 3 times,” “4 or 5 times,” “6 or 7 times,” “8 or 9 times,” “10 or 11 times” and “12 or more times.”

Participants’ socio-demographic characteristics including age, sex and race/ethnicity are self-reported. In the current analyses the ethnicity and race items were collapsed to generate the following categories: non-Hispanic white, Hispanic, black or African-American, Asian, and other. The “other” category was comprised of students who self-identified as more than one race, American Indian or Alaskan Native, Native Hawaiian or other Pacific Islander.

### **Data Analysis**

Statistical analyses were conducted on weighted data using SAS version 9.4. PROC SURVEY procedures (SAS Institute, Inc., Cary, North Carolina) were used to account for the complex sampling design. Sampling errors were estimated by using the primary sampling units and strata provided in the data and calculated through Taylor series linearization. Sampling weights were used to adjust for nonresponse and oversampling, and to allow for generalizability of findings to the population of high school students in Philadelphia. Univariate descriptive analyses were conducted to examine demographic characteristics of the study population. Individual multivariable regression models controlling for age, race/ethnicity, and accounting for sampling strategy were then developed to examine the prevalence of violent behaviors across the

study years (2003, 2007, 2009, 2011 and 2013). Linear and quadratic trend tests were used to identify trends in prevalence of each outcome between 2003 and 2013, and were identified as statistically significant at the  $\alpha < .05$  level. Analyses were stratified by sex due to *a priori* hypotheses regarding differences in violence prevalence and trends by sex.

## **RESULTS**

### **Trends in Community Violence**

Among high school girls in Philadelphia, in 2013, 32.7% reported being in a fight in the past year, 8.7% reported carrying any weapon in the past year, and 1.7% stated they had carried a gun in the past 30 days. No significant changes in involvement in these types of community violence were observed over the 10-year study period (Table 2; Figure 1a). Among boys, in 2013 38.4% reported being in a physical fight in the past year, 15.7% reported carrying any weapon in the past month, and 6.8% reported carrying a gun (Table 3). All of these community violence related-behaviors showed significant declines in prevalence between 2003 and 2013, with the greatest reduction observed in physical fighting (48.8% in 2003 to 38.4% in 2013;  $r^2 = -.35$ ,  $p = .001$ ; Figure 1b). A significant quadratic trend was identified for physical fighting among boys and girls.

### **Trends in School Violence**

For both boys and girls, the prevalence of involvement in violence in school remained stable over the 10-year observation period. Among girls in 2013, 15.1% reported being in a physical fight in school in the past 12 months, 4.5% were threatened with a weapon at school in the past 12 months, and 2.2% carried a weapon in school in the past 30 days. In 2011, one in 10 (10.1%) girls reported staying home from school in the past 30 days because they felt unsafe (Table 2; Figure 1c). In 2013, 18.2% of boys had been in a physical fight at school in the past 12 months, 9.2% had been threatened with a weapon in school in the past 12 months, and 3.5% of boys reported carrying a weapon to school in the past 30 days. In 2011, 8.0% had stayed at home from school because of feeling unsafe at school (Table 3; Figure 1d). A significant quadratic trend was identified for physical fighting at school among boys.

### **Trends in Sexual Assault and Self-directed Violence**

In 2013, 10% of girls reported that they had ever been forced to have sex; a statistically significant decline in experience of forced sex was observed among girls from 2003 when the prevalence was 14.6% ( $\chi^2 = -.13, p = .04$ ; Table 2; Figure 1e). In 2013, 16.8% of girls reported that they had considered suicide, 13.6% made a suicide plan, and 9% reported a suicide attempt in the past year. The prevalence of suicide attempts among girls significantly declined between 2003, when the prevalence was 13.7%, and 2013 ( $\chi^2 = -.14, p = .007$ ; Table 2; Figure 1g). Among high school boys in Philadelphia, 6.9% reported ever being forced to have sex; no significant change in the prevalence of forced sex among boys was observed over the 10-year study period

( $r^2 = -.12$ ,  $p = .12$ ; Table 3; Figure 1f). Reports of self-directed violence among boys in 2013 were as follows: 8.2% considered suicide, 8.4% made a suicide plan, and 10.4% attempted suicide. No significant changes in the prevalence of these outcomes were observed over the study period (Table 3; Figure 1h).

## DISCUSSION

Interpersonal and self-directed violence remains one of the leading causes of death among youth in spite of recent reductions in its prevalence on a national level.<sup>1</sup> To date, surveillance of youth violence has been largely conducted at the national and state level.<sup>1,31,32</sup> These macro-level examinations may misrepresent trends in violent behaviors at the local level, especially among low-income, minority urban youth, who may be directly or indirectly involved in multiple types of violence in their schools and communities.<sup>33</sup> Furthermore, youth violence reduction initiatives are primarily implemented at the local-level; thus, their influence on youth violence may not be captured by national surveillance, highlighting the additional need for local-level surveillance. The results from this study indicate declines in several types of violence among Philadelphia high school students over the past decade; however, involvement in violence remained common. Overall, the high prevalence of specific violent behaviors, such as physical fighting, among Philadelphia adolescents puts these youth at particularly high risk for numerous negative behavioral, academic, and health outcomes including mental health problems and substance use.<sup>34</sup>

Among Philadelphia's high school students, a decrease in the prevalence of sexual assaults was observed among girls. Over the same period, national YRBS data did not identify a significant change in the prevalence of sexual assault among youth.<sup>1</sup> This suggests that changing contexts specific to Philadelphia, including targeted sexual assault reduction campaigns, may play a role in the observed local-level reductions. For example, during the timeframe of this study, local organizations such as Women Against Abuse and Women Organized Against Rape initiated teen dating violence prevention programs in the community and Philadelphia public schools.<sup>27,35</sup> Whereas the observed declines are encouraging, the prevalence of sexual assaults among high school girls in Philadelphia remains higher than other large urban areas such as Chicago, San Diego, and Seattle,<sup>1</sup> indicating that additional prevention and intervention programs are needed if these reductions are to continue.

Significant decreases in the prevalence of suicide attempts by high school girls were observed, which is consistent with overall trends from national data over the past 20 years.<sup>1</sup> With these declines, the prevalence of suicide attempts among boys and girls in Philadelphia are now nearly equal, but suicidal ideation is still more prevalent among girls. Historically, the prevalence of suicide attempts and ideation among girls is consistently higher than among boys.<sup>1,36</sup> Furthermore, girls who attempt suicide are more likely than boys who attempt suicide to have experienced sexual abuse, family dysfunction, anxiety disorders, low self-esteem, and dating violence.<sup>37,38</sup> This suggests that suicide prevention programming in schools should be sensitive to potential sex differences in suicide risk factors if they are to be effective. With the passage of

Act 71 in Pennsylvania in 2014,<sup>39</sup> which requires schools to adopt a youth suicide awareness and prevention policy as of 2015-2016, it is possible that local surveillance mechanisms can detect greater declines in youth self-directed violence following its implementation.

One of the most prevalent violent behaviors among girls and boys during the study period was physical fighting in the community and at school. The prevalence of physical fighting among girls and boys in Philadelphia is the third and fourth highest in the nation among youth in major cities, respectively.<sup>1</sup> Compared to boys, there are few evidence-based intervention approaches to specifically address physical fighting among girls, which represents an important gap in public health initiatives.<sup>40</sup> Given the high prevalence of fighting in school and the community observed in the current study, and the significant proportion of youth who report skipping school due to fear of violence, further research is needed to identify effective ways to improve students' safety in school and the larger community.

Despite the high prevalence of physical fighting among boys, declines were observed in all types of community violence among boys during the study period. This finding is consistent with national trends, which demonstrate significant decreases in these 2 types of violent behavior over the past 20 years.<sup>1</sup> Reducing violence among adolescent boys has been a key objective for Philadelphia during the timeframe of this study, especially in the African-American community, which has a disproportionately high homicide rate.<sup>27,41</sup> Specifically, the city initiated the "Blueprint for a Safer Philadelphia" in 2004 and expanded the Youth Risk Violence Reduction Partnership – an intervention program for high-risk youth – to additional neighborhoods, with a

focus on young male African Americans.<sup>42-44</sup> The results of this study suggest that these initiatives along with other efforts across the city may be achieving some success in reducing violent behaviors in this group. Philadelphia intends to further decrease the prevalence of community violence by fully implementing additional evidence-based intervention programs such as Ceasefire, which has reduced gun violence among youth in other major cities.<sup>27,45,46</sup> Continued monitoring of violence among male adolescents in Philadelphia would help elucidate the success of consistently and newly implemented initiatives and highlight areas in need of additional intervention.

A high proportion of adolescent boys reported being forced to have sex and the prevalence of this violent behavior did not significantly change during the time frame of this study; yet, this problem receives little attention. Adolescent boys are likely to underreport experiencing sexual abuse due to feeling stigmatized for not meeting social norms and expectations for them to be independent and skilled in interpersonal relationships.<sup>47-49</sup> Thus, we hypothesize that the prevalence of forced sex reported in the current study is an underestimate of the true level of sexual assault experienced by adolescent boys. Study findings highlight that sexual abuse prevention and intervention strategies designed specifically for boys are needed in schools, especially in urban areas, to reduce violence involvement as well as the stigma surrounding this problem and improve health outcomes for victims.

## **Limitations**

Although this study had numerous strengths, including a sampling strategy that allows for generalizability of study findings to all Philadelphia high school students and inclusion of several types of violent behaviors across multiple locations, some study limitations exist. Results from this analysis are subject to the methodological limitations of the YRBS survey including the use of self-reported, single-item measures to assess behavior. For example, behaviors categorized as community-based violence could have occurred in schools, as these questionnaire items do not specify the location of the behavior. In addition, the prevalence of violent behaviors may be underestimated because youth who engage in violent behaviors may not attend school consistently or may have dropped-out of high school. Whereas for almost all questions, the prevalence of missing data was low (~3%), a large proportion of students (~20%) did not complete the survey item regarding attempting suicide. It is likely that stigma or fear of reporting this behavior contributed to students skipping this question, and therefore the prevalence of this outcome may be higher than observed in this study. Despite these limitations, the high prevalence of self-reported involvement in violence among Philadelphia youth demonstrates the pressing need for ongoing research and intervention.

## **Conclusions**

The prevalence of involvement in violence by adolescents has stabilized and, for some outcomes, declined in Philadelphia from 2003 to 2013. However, the prevalence of many types of violence remains higher among Philadelphia youth than among youth state or nationwide.



Local, culturally-specific efforts to reduce youth violence as well as larger initiatives and changes in community characteristics and resources may be contributing to the declines in violence prevalence observed in the current study. The findings from this study support prioritizing specific violent behaviors as intervention targets, such as physical fighting among girls and sexual violence victimization among boys, which have been less of a focus of violence reduction efforts to date. Furthermore, continued local-level, comprehensive surveillance in Philadelphia and other areas of high risk is needed and contributes to our larger understanding of the etiology and outcomes of youth violence.

## **IMPLICATIONS FOR SCHOOL HEALTH**

Some declines in youth violence were observed in this study, specifically community violence-related behaviors perpetrated by boys and suicide attempts and sexual assaults experienced by girls. However, the school violence-related behaviors examined in this study remained stable for both boys and girls. To decrease the prevalence of these behaviors, evidence-based youth violence reduction initiatives that have demonstrated effectiveness in the community may need an enhanced presence in schools. For example, Ceasefire programming could be translated to schools to expand their reach and potentially reduce youth violence in schools. Given limited resources available to many school districts, including Philadelphia, greater involvement from charitable organizations may be needed to support effective trainings for teachers, such as the United Way's funding of a Childhood Trauma Studies certificate offered by

Philadelphia University.<sup>50</sup> These trainings, coupled with evidence-based programs like Youth Mental Health First Aid<sup>51</sup> and Helping Traumatized Children Learn,<sup>52</sup> could create safer school environments for both students and staff by mitigating the association between adverse childhood experiences and engaging in violent behaviors.

The prevalence of violence among youth is still high, especially for behaviors that are not typically the focus of prevention and intervention, such as sexual assaults experienced by boys. To improve these outcomes, continued surveillance and development of novel, cost-effective, and evidence-based violence reduction initiatives are needed in schools. Comprehensive programs like Safe Dates have been shown to cost-effectively reduce these violent behaviors in other US schools and should be empirically tested in Philadelphia schools.<sup>53,54</sup>

### **Human Subjects Approval Statement**

The Temple University Institutional Review Board approved this study.

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July 29, 2015.

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Table 1. Demographic Characteristics of the Participating High School Students, Philadelphia Youth Risk Behavior Survey, 2003–2013

	2003			2007			2009			2011			2013		
	*Count	Weighted Estimate (SD)	%	*Count	Weighted Estimate (SD)	%	*Count	Weighted Estimate (SD)	%	*Count	Weighted Estimate (SD)	%	*Count	Weighted Estimate (SD)	%
<b>Total</b>	1455	54972 (4734)	--	2360	45267 (2948)	--	1287	42452 (4356)	--	1475	41870 (1801)	--	1227	33837 (3588)	--
<b>Sex</b>															
Female	805	27718 (2758)	55.3	1305	25441 (1992)	55.3	717	21903 (2391)	55.7	787	21135 (1218)	53.4	670	16786 (1997)	54.7
Male	650	27254 (2625)	44.7	1055	19826 (1472)	44.7	570	20549 (2301)	44.3	688	20734 (1194)	46.7	557	17051 (1985)	45.4
<b>Age, y</b>															
d14	166	9011 (2221)	11.4	199	4045 (724)	8.4	71	3304 (779)	5.5	153	4398 (785)	10.5	96	3223 (864)	7.8
15	321	14812 (2049)	22.1	624	11557 (1642)	26.4	288	11432 (2030)	22.4	355	10395 (1217)	24.1	271	8272 (1461)	22.1
16	403	14472 (1644)	27.7	718	12807 (1227)	30.4	407	11447 (1538)	31.6	378	10952 (1136)	25.6	382	9103 (1117)	31.1
17	380	11074 (1502)	26.1	583	11710 (1410)	24.7	362	9438 (1198)	28.1	341	8938 (917)	23.1	287	7403 (1104)	23.4
e18	185	5603 (1041)	12.7	236	5147 (792)	10.0	159	6831 (1643)	12.4	248	7186 (1009)	16.8	191	5836 (1072)	15.6
<b>Race/Ethnicity</b>															
African American	795	36092 (3935)	54.6	1333	24565 (1661)	56.5	700	27511 (2961)	54.4	795	25591 (1445)	53.9	576	19412 (2761)	46.9
Non-Hispanic White	225	9054 (1577)	15.5	307	5851 (980)	13.0	157	5415 (1016)	12.2	178	5517 (677)	12.1	163	4921 (1153)	13.3
Asian	96	1373 (329)	6.6	207	3865 (728)	8.8	97	1820 (358)	7.5	139	2231 (253)	9.4	124	2099 (435)	10.1
Hispanic	211	6326 (924)	14.5	164	3847 (723)	6.9	113	2684 (547)	8.8	110	2721 (372)	7.5	101	2169 (420)	8.2
Other	128	2126 (311)	8.8	349	7139 (710)	14.8	220	5022 (666)	17.0	253	5810 (582)	17.0	263	5236 (660)	21.4

Note.

SD=Standard Deviation

\*Unweighted Count

Table 2. Self-Reported Violence-Related Behaviors among Female High School Students, Philadelphia Youth Risk Behavior Survey, 2003–2013<sup>a</sup>

Variable	2003, % (SE)	2007, % (SE)	2009, % (SE)	2011, % (SE)	2013, % (SE)	<sup>2</sup> estimate (P <sub>df=104</sub> )
<b>Community Violence</b>						
Carried any Weapon in Past 30 Days	11.1 (0.01)	11.4 (0.01)	10.8 (0.01)	9.9 (0.01)	8.7 (.009)	-0.09 (0.08)
Carried a Gun in Past 30 Days	2.1 (.005)	1.7 (.005)	2.0 (.007)	1.5 (.005)	1.7 (.005)	-0.01 (0.58)
Physical Fight in Past 12 months	33.3 (0.02)	41.1 (0.02)	41.5 (0.02)	38.2 (0.02)	32.7 (0.03)	-0.05 (0.65) <sup>b</sup>
<b>School Violence</b>						
Carried Weapon in School in Past 30 days	3.2 (0.006)	2.8 (0.005)	2.9 (0.007)	2.7 (0.007)	2.2 (0.005)	-0.03 (0.19)
Threatened with Weapon in School in Past 12 months	5.6 (0.01)	7.0 (0.007)	5.9 (0.01)	8.0 (0.01)	4.5 (0.01)	-0.02 (0.57)
Physical Fight in School in the Past 12 months	14.0 (0.02)	16.0 (0.01)	15.3 (0.02)	16.6 (0.02)	15.1 (0.02)	0.03 (0.62)
Missed School Because Felt Unsafe in Past 30 days	10.1 (0.01)	9.1 (0.01)	9.9 (0.01)	10.1 (0.01)	--	0.01 (0.86)
<b>Sexual Assault</b>						
Ever Forced to Have Sex	14.6 (0.01)	10.7 (0.01)	12.8 (0.01)	11.6 (0.01)	10.0 (0.02)	-0.13 (0.04)
<b>Self-Directed Violence</b>						
Considered Suicide in Past 12 months	18.8 (0.02)	18.0 (0.01)	18.5 (0.02)	17.3 (0.01)	16.8 (0.02)	-0.07 (0.33)
Made a Suicide plan in the Past 12 months	16.1 (0.01)	14.6 (0.01)	16.0 (0.02)	12.7 (0.01)	13.6 (0.02)	-0.09 (0.22)
Attempted Suicide in the Past 12 months	13.8 (0.02)	12.2 (0.01)	14.4 (0.02)	13.0 (0.01)	9.0 (0.01)	-0.14 (0.007)

Note.

SE=Standard Error

<sup>a</sup>Model adjusted for students' age, race/ethnicity, and complex sampling strategy

<sup>b</sup>A significant quadratic trend was noted for this outcome

**Table 3. Self-Reported Violence-Related Behaviors among Male High School Students, Philadelphia Youth Risk Behavior Survey, 2003–2013<sup>a</sup>**

<b>Variable</b>	<b>2003, % (SE)</b>	<b>2007, % (SE)</b>	<b>2009, % (SE)</b>	<b>2011, % (SE)</b>	<b>2013, % (SE)</b>	<b><sup>2</sup> estimate (P<sub>df</sub>=104)</b>
<b>Community Violence</b>						
Carried any Weapon in Past 30 Days	23.8 (0.02)	27.3 (0.02)	19.3 (0.02)	20.2 (0.02)	15.7 (0.02)	-0.31 ( $<.001$ )
Carried a Gun in Past 30 Days	11.0 (0.02)	11.4 (0.01)	10.3 (0.02)	8.1 (0.01)	6.8 (0.01)	-0.16 (0.01)
Physical Fight in Past 12 Months	48.8 (0.02)	50.4 (0.02)	49.0 (0.03)	46.2 (0.03)	38.4 (0.02)	-0.35 (0.001) <sup>b</sup>
<b>School Violence</b>						
Carried Weapon in School in Past 30 days	4.3 (0.007)	4.4 (0.008)	5.7 (0.01)	3.6 (0.008)	3.5 (0.007)	-0.03 (0.36)
Threatened with Weapon in School in Past 12 months	9.9 (0.01)	13.5 (0.01)	9.3 (0.01)	8.9 (0.01)	9.2 (0.02)	-0.07 (0.29)
Physical Fight in School in the Past 12 months	18.6 (0.02)	22.1 (0.02)	22.8 (0.02)	20.2 (0.02)	18.2 (0.02)	-0.03 (0.71) <sup>b</sup>
Missed School Because Felt Unsafe in Past 30 days	9.3 (0.01)	9.6 (0.01)	6.6 (0.01)	8.0 (0.01)	--	-0.06 (0.20)
<b>Sexual Assault</b>						
Ever Forced to Have Sex	10.5 (0.02)	8.7 (0.01)	10.7 (0.02)	8.8 (0.01)	6.8 (0.01)	-0.11 (0.12)
<b>Self-Directed Violence</b>						
Considered Suicide in Past 12 months	9.3 (0.01)	10.2 (0.01)	9.9 (0.02)	10.9 (0.01)	8.2 (0.01)	-0.03 (0.57)
Made a Suicide plan in the Past 12 months	9.5 (0.01)	11.9 (0.01)	7.4 (0.01)	9.1 (0.01)	8.4 (0.01)	-0.06 (0.26)
Attempted Suicide in the Past 12 months	10.1 (0.02)	11.4 (0.02)	8.0 (0.02)	9.1 (0.01)	10.4 (0.02)	-0.01 (0.83)

Note.

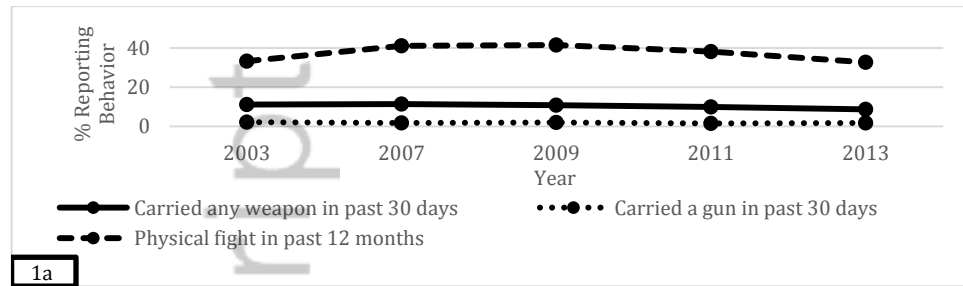
SE=Standard Error

<sup>a</sup>Model adjusted for students' age, race/ethnicity, and complex sampling strategy

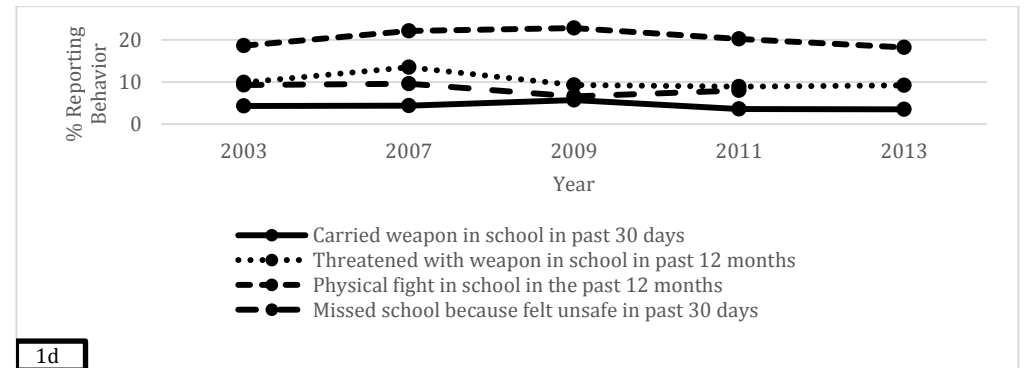
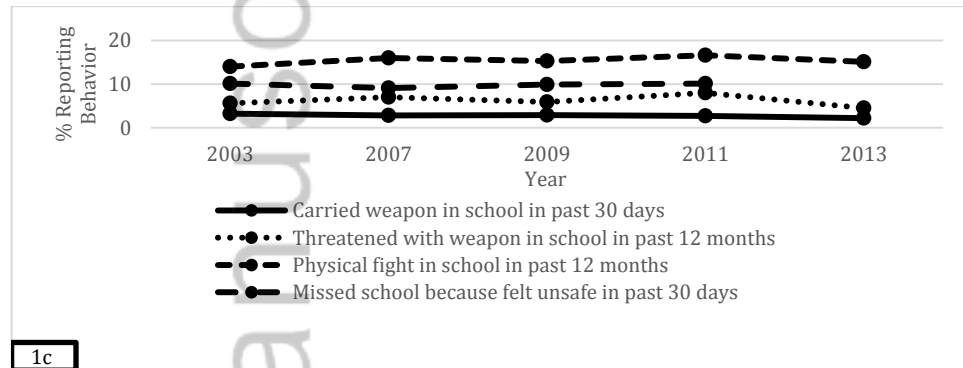
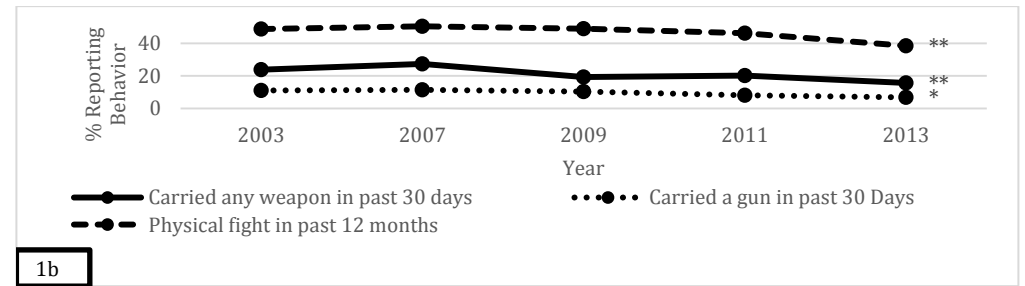
<sup>b</sup>A significant quadratic trend was noted for these outcomes

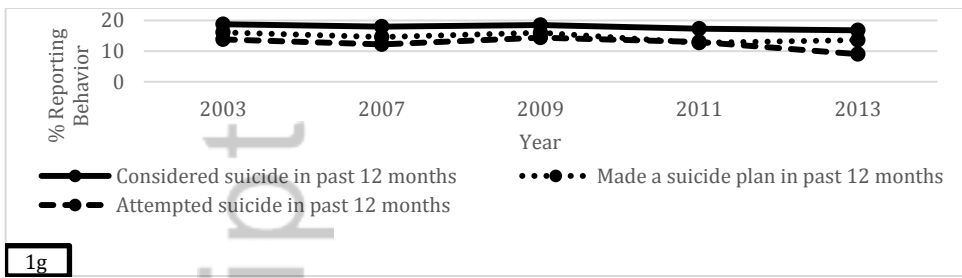
Figure 1.

Violence Trends Among Philadelphia High School Students Girls, 2003-2013



Violence Trends Among Philadelphia High School Boys, 2003-2013





\*p < .05 \*\*p < .01

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Office for Human Subjects Protections  
Institutional Review Board  
Medical Intervention Committees A1 & A2  
Social and Behavioral Committee B  
Unanticipated Problems Committee

Student Faculty Conference Center  
3340 N Broad Street - Suite 304  
Philadelphia, Pennsylvania 19140  
Phone: (215) 707-3390  
Fax: (215) 707-9100  
e-mail: [irb@temple.edu](mailto:irb@temple.edu)

### Certification of Approval for a Project Involving Human Subjects

Protocol Number: 21251  
PI: Patterson, Freda  
Review Type: EXPEDITED  
Approved On: 06-Mar-2014  
Approved From: 06-Mar-2014  
Approved To: 05-Mar-2015  
Committee: A1 - MEDICAL INTERVENTION  
School/College: HEALTH PROFESSIONS (0900)  
Department: CHP:PUBLIC HEALTH (09100)  
Sponsor: SCHOOL DISTRICT OF PHILADELPHIA  
Project Title: Youth Risk Behavior Survey, Philadelphia

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The IRB approved the protocol 21251.

If the study was approved under expedited or full board review, the approval period can be found above. Otherwise, the study was deemed exempt and does not have an IRB approval period.

Before an approval period ends, you must submit the Continuing Review form via the eRA module. Please note that though an item is submitted in eRA, it is not received in the IRB office until the principal investigator approves it. Consequently, please submit the Continuing Review form via the eRA module at least 60 days, and preferably 90 days, before the study's expiration date.

Note that all applicable Institutional approvals must also be secured before study implementation. These approvals include, but are not limited to, Medical Radiation Committee ("MRC"); Radiation Safety Committee ("RSC"); Institutional Biosafety Committee ("IBC"); and Temple University Survey Coordinating Committee ("TUSCC"). Please visit these Committees' websites for further information.

Finally, in conducting this research, you are obligated to submit modification requests for all changes to any study; reportable new information using the Reportable New Information form; and renewal and closure forms. For the complete list of investigator responsibilities, please see the Policies and Procedures, the Investigator Manual, and other requirements found on the Temple University IRB website: <http://www.temple.edu/research/regaffairs/irb/index.html>

Please contact the IRB at (215) 707-3390 if you have any questions



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***Journal of School Health***  
**April 2017**  
**Volume 87 Number 4**

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Ten-year secular trends in youth violence: results from the Philadelphia Youth Risk Behavior Survey 2003-2013

**JOSH-12-15-RA-490.R2** (Raun)

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**JOSH-06-15-RA-205.R3**

Demographic differences in district-level policies related to school mental health and social services – United States, 2012

Zewditu Demissie, PhD, MPH (Corresponding Author)  
Senior Research Scientist  
Centers for Disease Control and Prevention  
Division of Adolescent and School Health  
1600 Clifton Rd. NE; Mailstop E-75  
Atlanta, Georgia 30329  
Phone: (404) 718-8138  
Fax: (404) 718-8010  
Email: [izj5@cdc.gov](mailto:izj5@cdc.gov)

Nancy Brener, PhD  
Lead Health Scientist  
Centers for Disease Control and Prevention  
Division of Adolescent and School Health  
1600 Clifton Rd. NE, Mailstop E-75  
Atlanta, Georgia 30329  
Phone: (404) 718-8133  
Email: [nad1@cdc.gov](mailto:nad1@cdc.gov)

Author

**JOSH-07-15-RA-257.R2**

Association of self-perceived physical competence and leisure-time physical activity in childhood – a follow-up study

Lotta Hamari, PT, MHSc (Corresponding Author)

Doctoral candidate

Department of Nursing Science, 20014 University of Turku, Finland

Phone: (+358) 40 7555344

Email: [anloka@utu.fi](mailto:anloka@utu.fi)

Olli J. Heinonen, MD

Professor

Paavo Nurmi Centre & Department of Physical Activity and Health, University of Turku, Finland

Kiinamylynkatu 10, 20520 Turku, Finland

Email: [olli.heinonen@utu.fi](mailto:olli.heinonen@utu.fi)

Minna Aromaa, MD

Head of Department

Children and Adolescents Out-patient Clinic, City of Turku/ Department of Public Health, University of Turku, Finland

Department of Public Health, 20014 University of Turku

Email: [minna.aromaa@turku.fi](mailto:minna.aromaa@turku.fi)

Riitta Asanti, PhD

Department of Teacher Education, Turku Unit, University of Turku, Finland

Assistentinkatu 5, 20014 University of Turku, Finland

Email: [riiasa@utu.fi](mailto:riiasa@utu.fi)

Leena Koivusilta, MSc, PhD

Professor

University Consortium of Seinäjoki, School of Health Sciences, University of Tampere, Finland

Kampusranta 9C, 60320 Seinäjoki, Finland

Email: [leena.koivusilta@uta.fi](mailto:leena.koivusilta@uta.fi)

Pasi Koski, PhD

Professor

Department of Teacher Education, Rauma Unit, University of Turku, Finland

PL 175, 26101 Rauma, Finland

Email: [pasi.koski@utu.fi](mailto:pasi.koski@utu.fi)

Camilla Laaksonen, PhD

Senior Lecturer

Turku University of Applied Sciences, Health and Well-being, Finland

Ruiskatu 8, 20720 Turku, Finland

Email: [camilla.laaksonen@turkuamk.fi](mailto:camilla.laaksonen@turkuamk.fi)

Jaakko Matomäki, MSc  
Biostatistician  
Turku University Hospital, Clinical Research Centre, Finland  
PO Box 52, FI-20521, Turku, Finland  
Email: [jaamat@utu.fi](mailto:jaamat@utu.fi)

Katja Pahkala, PhD  
Adjunct Professor and Senior Scientist  
Paavo Nurmi Centre & Department of Health and Physical Activity, University of Turku,  
Finland / Research Centre of Applied and Preventive Cardiovascular Medicine, University of  
Turku, Finland  
Kiinamyllynkatu 10, 20520 Turku, Finland  
Email: [katpah@utu.fi](mailto:katpah@utu.fi)

Anni Pakarinen, RN, MHSc  
Doctoral Candidate  
Department of Nursing Science, 20014 University of Turku, Finland  
Email: [ankorh@utu.fi](mailto:ankorh@utu.fi)

Sakari Suominen, MD, PhD  
Clinical Lecturer  
Department of Public Health, University of Turku, Finland / University of Skövde, Sweden  
Department of Public Health, 20014 University of Turku, Finland  
Email: [suominen@utu.fi](mailto:suominen@utu.fi)

Sanna Salanterä, PhD  
Professor  
Department of Nursing Science, 20014 University of Turku, Finland  
Email: [sansala@utu.fi](mailto:sansala@utu.fi)

Autho

**JOSH-09-15-RA-352.R2**

Ten-year secular trends in youth violence: results from the Philadelphia Youth Risk Behavior Survey 2003-2013

Andrew C. Pool, MSc (Corresponding Author)  
Doctoral Candidate  
Temple University  
Center for Obesity Research and Education (CORE)  
3223 N. Broad Street, Suite 175  
Philadelphia, PA 19140  
Email: [andrew.pool@temple.edu](mailto:andrew.pool@temple.edu)

Freda Patterson, PhD MS  
Assistant Professor  
University of Delaware  
College of Health Sciences  
Department of Behavioral Health and Nutrition  
26 Carpenter Sports Building  
Newark, DE 19122  
Email: [fredap@UDel.edu](mailto:fredap@UDel.edu)

Ingrid Y. Luna, MPH  
Graduate Student  
Temple University  
College of Public Health  
Department of Social and Behavioral Sciences  
1301 Cecil B Moore Avenue, 966 Ritter Annex  
Philadelphia, PA 19122  
Email: [ingrid.luna227@gmail.com](mailto:ingrid.luna227@gmail.com)

Bernadette Hohl, PhD, MPH  
Instructor  
Rutgers University  
School of Public Health  
Department of Epidemiology  
683 Hoes Lane West  
Piscataway, NJ 08854  
Email: [bernadette.hohl@rutgers.edu](mailto:bernadette.hohl@rutgers.edu)

Katherine W. Bauer, PhD MS  
Assistant Professor  
Department of Nutritional Sciences  
University of Michigan School of Public Health  
1415 Washington Heights  
Ann Arbor, MI 48109  
Email: [kwbauer@umich.edu](mailto:kwbauer@umich.edu)

**JOSH-12-15-RA-490.R2**

Analyzing who, when and where: data for better targeting of resources for school-based asthma interventions

Loren H. Raun, PhD (Corresponding Author)

Research Faculty

Rice University

6100 Main Street

Houston, Texas 77005

Email: [raun@rice.edu](mailto:raun@rice.edu)

Laura A. Campos, BA

Research Scientist

Rice University

6100 Main Street

Houston, Texas 77005

Email: [lac3@rice.edu](mailto:lac3@rice.edu)

Elizabeth Stevenson, MPH

Health Educator

2778 Foster Ridge Road

Atlanta, GA 30345

Email: [echstevenson@gmail.com](mailto:echstevenson@gmail.com)

Katherine B. Ensor, PhD

Professor

Rice University

6100 Main Street

Houston, Texas 77005

Email: [ensor@rice.edu](mailto:ensor@rice.edu)

Gwen Johnson, RN

Manager, Health and Medical Services

Houston Independent School District

4400 W. 18th St Houston 77092

Houston, Texas 77005

Email: [gjohns10@houstonisd.org](mailto:gjohns10@houstonisd.org)

David Persse, MD

EMS Physician Director and Public Health Authority

City of Houston Emergency Medical Services

600 Jefferson Suite 800

Houston, Texas 77002

Email: [David.Persse@houstontx.gov](mailto:David.Persse@houstontx.gov)

**JOSH-04-16-RA-148.R2**

Sexuality and HIV education in charter schools: an exploratory study with principals in San Diego County, California

Eric R. Walsh-Buhi, MPH, PhD (Corresponding Author)

Associate Professor

San Diego State University, Division of Health Promotion and Behavioral Science

Graduate School of Public Health

San Diego, CA, USA 92182-4162 Email: [ebuhi@sdsu.edu](mailto:ebuhi@sdsu.edu)

Brandon Dao, BA, BS

Student Assistant

San Diego State University, Division of Health Promotion and Behavioral Science

Graduate School of Public Health

San Diego, CA, USA 92182-4162 Email: [brandondao10@gmail.com](mailto:brandondao10@gmail.com)

Linda Salgin, MPH, CPH

CHIP Program Supervisor, HIV Department

San Ysidro Health Center

San Diego, CA USA 92154 Email: [linda.salgin@syhc.org](mailto:linda.salgin@syhc.org)

James Marshall, PhD

Professor

San Diego State University, Department of Educational Leadership

San Diego, CA USA 92182-1190 Email: [marshall@mail.sdsu.edu](mailto:marshall@mail.sdsu.edu)

Rachel Miller, MEd

Program Coordinator/Resource Teacher

San Diego Unified School District, Sexual Health Education Program

San Diego, CA USA 92103 Email: [rmiller@sandi.net](mailto:rmiller@sandi.net)

Doug Fisher, PhD

Professor

San Diego State University, Department of Educational Leadership

San Diego, CA USA 92182-1190 Email: [dfisher@mail.sdsu.edu](mailto:dfisher@mail.sdsu.edu)

Margaret Walsh-Buhi, MPH, PhD

Evaluation Manager

Academy for Professional Excellence

San Diego State University, School of Social Work

San Diego, CA USA 92120 Email: [mwalsh@mail.sdsu.edu](mailto:mwalsh@mail.sdsu.edu)

**JOSH-01-16-RA-030.R2**

Aggressive and violent behavior and emotional self-efficacy: is there a relationship for adolescents?

Robert F. Valois, MS, PhD, MPH. (Corresponding Author)  
Department of Health Promotion, Education & Behavior  
Arnold School of Public Health  
Department of Family & Preventive Medicine  
School of Medicine  
University of South Carolina  
Columbia, SC 29208  
[rfvalois@sc.edu](mailto:rfvalois@sc.edu)

Keith J. Zullig, MSPH, PhD  
Department of Social & Behavioral Sciences  
School of Public Health  
West Virginia University  
Morgantown, WV 26506

Asa A. Revels, MPH  
Department of Health Promotion, Education & Behavior  
Arnold School of Public Health  
University of South Carolina  
Columbia, SC 29208

Author Manuscript



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Cost-effectiveness of ready for recess to promote physical activity in children

Hongmei Wang, PhD (Corresponding Author)

Assistant Professor

Department of Health Services Research and Administration

College of Public Health

University of Nebraska Medical Center

984350 Nebraska Medical Center

Omaha, NE 68198-4350

Email: [hongmeiwang@unmc.edu](mailto:hongmeiwang@unmc.edu)

Co-Tao Li, MD, PhD

Assistant Professor

School of Social and Behavioral Health Sciences

College of Public Health and Human Sciences

Oregon State University

Corvallis, Oregon 97331-6406

Email: [Tao.Li2@oregonstate.edu](mailto:Tao.Li2@oregonstate.edu)

Mohammad Siahpush, PhD

Interim Chair and Professor

Department of Health Promotion, Social & Behavioral Health

College of Public Health

University of Nebraska Medical Center

Omaha, NE 68198-4365

Email: [msiahpush@unmc.edu](mailto:msiahpush@unmc.edu)

Li-Wu Chen, PhD MHSA

Professor and Chair

Department of Health Services Research and Administration

College of Public Health

University of Nebraska Medical Center

Omaha, NE 68198-4350

Email: [liwuchen@unmc.edu](mailto:liwuchen@unmc.edu)

Jennifer Huberty, PhD

Associate Professor

Exercise Science and Health Promotion

School of Nutrition and Health Promotion

College of Health Solutions

Arizona State University

Phoenix, AZ 85004

Email: [Jennifer.Huberty@asu.edu](mailto:Jennifer.Huberty@asu.edu)

**JOSH-12-15-RA-492.R2**

Lessons learned from the implementation of Brighter Bites: a food co-op to increase access to fruits and vegetables and nutrition education among low-income children and their families

Shreela Sharma, PhD, RD, LD (Corresponding Author)  
Associate Professor, Department of Epidemiology  
Michael & Susan Dell Center for Healthy Living  
University of Texas School of Public Health  
1200 Herman Pressler Dr.  
Houston, Texas 77030  
Phone: 713-500-9344  
Email: [Shreela.V.Sharma@uth.tmc.edu](mailto:Shreela.V.Sharma@uth.tmc.edu)

Joanne Chow, MPH, RD  
Research Assistant, Department of Epidemiology  
University of Texas School of Public Health  
Houston, Texas 77030  
Email: [Wai.Yee.Chui@uth.tmc.edu](mailto:Wai.Yee.Chui@uth.tmc.edu)

Michael Pomeroy, MPH.  
Senior Program Director, Brighter Bites  
Houston, Texas 77029  
Email: [mike.pomeroy@brighterbites.org](mailto:mike.pomeroy@brighterbites.org)

Margaret Raber, MPH  
Graduate Research Assistant  
University of Texas School of Public Health  
Houston, Texas 77030  
Email: [Margaret.p.raber@uth.tmc.edu](mailto:Margaret.p.raber@uth.tmc.edu)

David Salako, MS  
Graduate Research Assistant  
University of Texas School of Public Health  
Houston, Texas 77030  
Email: [David.O.Salako@uth.tmc.edu](mailto:David.O.Salako@uth.tmc.edu)

Christine Markham, PhD  
Associate Professor, Department of Health Promotion Behavioral Sciences  
University of Texas School of Public Health  
Houston, Texas 77030  
Email: [Christine.Markham@uth.tmc.edu](mailto:Christine.Markham@uth.tmc.edu)

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Fulfilling the common core standards and meeting students' needs for depression education: adolescent depression awareness program (ADAP)

Mary Beth Beaudry, RN, MSN, MPH  
Research Nurse Manager  
Johns Hopkins University School of Medicine  
600 N. Wolfe Street, Meyer 3-136  
Baltimore, MD 21287  
Email: [mbeaudr1@jhmi.edu](mailto:mbeaudr1@jhmi.edu)

Lisa Townsend, PhD  
Assistant Professor  
Johns Hopkins University School of Medicine  
Baltimore, MD 21287  
Email: [ltownse8@jhu.edu](mailto:ltownse8@jhu.edu)

Kathryn Heley, MPH  
Graduate Student  
Johns Hopkins University Bloomberg School of Public Health  
Baltimore, MD 21287  
Email: [kheley1@jhmi.edu](mailto:kheley1@jhmi.edu)

Emma Cogan, BA  
Research Program Coordinator  
Johns Hopkins University School of Medicine  
600 N. Wolfe Street, Meyer 3-181  
Baltimore, MD 21287  
Email: [ecogan1@jhmi.edu](mailto:ecogan1@jhmi.edu)

Nicholas Schweizer, MS, CAGS, LCPC, LCADC  
CO Substance Abuse Therapy Supervisor  
Johns Hopkins University School of Medicine  
Baltimore, MD 21287  
Email: [nschwei1@jhmi.edu](mailto:nschwei1@jhmi.edu)

Karen Swartz, MD (Corresponding Author)  
Associate Professor  
Johns Hopkins University School of Medicine  
600 N. Wolfe Street, Meyer 3-181  
Baltimore, MD 21287  
Email: [Kswartz1@jhmi.edu](mailto:Kswartz1@jhmi.edu)