Adolescent Health in the Caribbean: Risk and Protective Factors

Robert W. Blum, MD, PhD, Linda Halcón, PhD, MPH, Trish Beuhring, PhD, Ernest Pate, MD, Sheila Campell-Forrester, MD, MPH, and Anneke Venema, MD

Until recently, we have known relatively little about the health status of youths residing in the Caribbean. Isolated reports, often in unpublished manuscripts, give glimpses of reproductive health concerns in one country or of substance abuse issues in another. From these snapshots, there is a cause for concern. In a study of a clinical population of young people in Jamaica, Smikle et al.1 found that the mean age at onset of sexual intercourse among males was 12.5 years; 4% of sexually active males reported using condoms consistently, and 60% reported marijuana use. Soyibo and Lee2,3 reported, among a general population of Jamaican school-attending adolescents, rates of marijuana, cocaine, and heroin use of 10.2%, 2.2%, and 1.13%, respectively; the alcohol use rate was 50.2%, and the tobacco use rate was 16.6%.

In addition, violence is on the rise among youths throughout the Caribbean.4 Soyibo and Lee, in another study involving their sample of Jamaican youths, found that 78.5% of these young people had witnessed violence in their communities; 60.8%, in their schools; and 44.7%, in their homes.5 Also, 29% reported that they had injured someone else. Suicide appears to be of increasing concern in the Caribbean as well; for example, Hutchinson and Simeon6 reported a 319% increase in the male suicide rate in Trinidad and Tobago between 1978 and 1992 (4.96 to 20.76 per 100,000).

The data just described present a very limited portrait of youth health in the Caribbean, and none of these studies have provided an understanding of the factors that protect Caribbean youths and those that predispose them to poor health and health risk behaviors. We focused on these issues in the present study.

Objectives. This study sought to identify, among youths, factors associated with characteristics such as poor health status, substance use, and suicide risk and to explore the extent to which the risk and protective factors identified cut across health-compromising behaviors.

Methods. A survey was administered to representative samples of young people from 9 Caribbean countries.

Results. Physical/sexual abuse and having a friend or relative who had attempted suicide were associated with an increased prevalence of health-compromising behaviors. Connectedness with parents and school and attendance at religious services were associated with fewer health risk behaviors.

Conclusions. When the identified risk and protective factors were compared with those seen among young people in the United States, similarities as well as important differences were found. (Am J Public Health. 2003;93:456–460)

METHODS

Instrument Development

The survey instrument used in the present study contained 87 multiple-choice questions with a total of 246 options. The items covered the following areas: school, substance use, sexual and reproductive health, physical and sexual abuse, honesty, violence, mental health, family, general health, health care and nutrition, and relationships. The initial questionnaire was primarily based on the Minnesota Adolescent Health Survey7; however, Youth Risk Behavior Survey8 provided further questions.

An initial instrument draft was developed after a meeting of maternal and child health directors from the 19 target countries of the Anglophone Caribbean. Each of these individuals reviewed the draft, and a revised version was tested among 105 school-attending adolescents in Barbados, St. Lucia, and Antigua. The instrument was subsequently revised, and the revised version was once again reviewed by the maternal and child health directors before finalization.

Sampling

We used a random sampling procedure involving school classrooms. We based our procedure on Ministry of Education rosters within each country so as to identify representative national samples of young people aged 10 to 18 years. Average classroom size was estimated at 30 pupils. In determining sample sizes, we used a power of 0.80 and 20% oversampling within each country so that we would have sufficient numbers of respondents to allow within-country comparisons by age and sex as well as aggregate analyses (Table 1).

The study required approval of multiple ministries within each participating country, as well as personnel commitment in the areas of sample design, sample selection, data collection, and data entry. Of the 19 Caribbean countries eligible for participation, 9 chose to take part. No differences were noted between participating and nonparticipating countries according to either population size or school enrollment percentage. As a result of the substantial between-country variations in population size, samples of comparable size were used to obtain better overall regional representation.

More than 16,000 youths aged 10 to 18 years participated in the survey, which took place during 1997–1998. Questionnaires missing more than one third of responses were excluded from the final sample, as were
questionnaires with more than 3 inconsistent responses, 2 or more clearly invalid responses, or endorsement of the use of bogus responses, 2 or more clearly invalid questionnaires with more than 3 inconsistent responses were deleted as a result of inconsistent responses (i.e., more than a third of responses left blank), and 2% was deleted as a result of inconsistent responses. Those failing to complete the survey were disproportionately at the young end of the age spectrum (10–12 years).

RESULTS

General Health

Nearly 20% of our Caribbean youth participants reported fair or poor health. Examination of the factors associated with poor self-assessed health status showed that the most consistent factor was having experienced physical or sexual abuse. Parental mental health problems were associated with poorer self-assessed health status among the youngest adolescents, and parental problems with violence were associated with poorer health status among those aged 13 to 15 years. By the older teen years, parental factors seemed to have a diminished influence; none were significant correlates of poor self-assessed health status. Conversely, connectedness with parents was strongly associated with a lower likelihood of rating one’s health as fair or poor. Two other factors that were protective against poor self-rated health were connectedness with other adults and trying hard in school (Table 2).

Tobacco, Alcohol, and Other Substance Use

As do their peers elsewhere, teens in the Caribbean live in cultures that often celebrate the use of tobacco, alcohol, marijuana, and other substances. When we examined the factors associated with increased use of substances and those associated with diminished involvement, a few factors stood out. Across all age groups, both parental substance abuse and parental mental health problems were associated with increased substance use. In addition, rage, abuse, parental violence, and having a family member or friend who had attempted suicide were found to correlate with higher levels of substance use among teens in most of the age groups studied (Table 2).

Emotional Well-Being

Suicide attempts. Although generally happy, approximately 15% of our respondents reported significant emotional distress, and about 12% reported ever having attempted suicide. Among the risk factors associated with ever having attempted suicide, history of a friend or family member’s suicide was the strongest across all age groups, followed by rage and history of physical abuse, sexual abuse, or both. Across all age groups, girls were consistently more likely than boys to report suicide attempts. Conversely, parental connectedness was strongly protective against suicide attempts in all of the age groups (odds ratios between 0.33 and 0.42). No other factors were found to be protective (Table 2).

Rage. The rage variable was based on an item in which respondents were asked whether they were sufficiently angry some or most of the time that they “could kill someone.” This feeling was shown to be rel-

### TABLE 1—Unweighted and Weighted Sample Sizes: Caribbean Youth Health Survey, 1998.

<table>
<thead>
<tr>
<th>Country</th>
<th>Final Sample, No. (%)</th>
<th>Weighted % of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antigua</td>
<td>2,158 (13.7)</td>
<td>1.5</td>
</tr>
<tr>
<td>Bahamas</td>
<td>1,787 (11.4)</td>
<td>5.6</td>
</tr>
<tr>
<td>Barbados</td>
<td>1,819 (11.6)</td>
<td>6.5</td>
</tr>
<tr>
<td>British Virgin Islands</td>
<td>400 (2.5)</td>
<td>0.4</td>
</tr>
<tr>
<td>Dominica</td>
<td>2,719 (17.3)</td>
<td>1.9</td>
</tr>
<tr>
<td>Grenada</td>
<td>1,255 (8.0)</td>
<td>2.4</td>
</tr>
<tr>
<td>Guyana</td>
<td>1,396 (8.9)</td>
<td>17.6</td>
</tr>
<tr>
<td>Jamaica</td>
<td>2,635 (16.8)</td>
<td>60.7</td>
</tr>
<tr>
<td>St. Lucia</td>
<td>1,526 (9.7)</td>
<td>3.5</td>
</tr>
<tr>
<td>Total</td>
<td>15,695 (100)</td>
<td>100</td>
</tr>
</tbody>
</table>
There is mounting concern in many countries about the relatively high rates of emotional distress and violence among those older than 16 years. Emotional distress was protective against violence: in the youngest group (12-15 years of age), respondents who reported emotional distress were more likely to report involvement in violence (odds ratios ranged from 2.44 for the 10-12-year group, 2.96 in the 13-15-year group, and 3.03 in the 16-18-year group). Male respondents were more likely to report involvement in violence (odds ratios ranged from 2.44 for the 10-12-year group, 2.96 in the 13-15-year group, and 3.03 in the 16-18-year group). Parental connectedness, religious beliefs, and attending religious services were also observed between both types of abuse and depression as well as rage (Table 3).

Examination of the factors related to emotional distress showed a very strong association with abuse. Specifically, whereas 91% of young people who did not indicate ever having attempted suicide (23.1%) who had experienced sexual abuse also reported having done so. Similar relationships were observed for physical abuse. Strong associations were also observed between both types of abuse and depression as well as rage (Table 2).
associated with lower rates of violence (Table 2).

**Sexual Intercourse**

Early initiation of sexual intercourse is of mounting concern in the Caribbean because of pregnancy risks as well as the rising prevalence of HIV among young people. Male respondents were more than twice as likely as their female counterparts to report having had sexual intercourse. Both rage and physical or sexual abuse experiences were associated with early sexual intercourse among all of the age groups. As was true for violence and substance abuse, there was a strong association between early initiation of sexual activity and skipping school.

Regarding factors associated with delay of sexual activity, connectedness to parents was strongly protective among teenagers younger than 16 years. Among respondents who were 13 years or older, attendance at religious services was associated with a lower rate of reporting ever having had intercourse than the rate among those who did not attend services (Table 2).

<table>
<thead>
<tr>
<th>Type of Emotional Distress</th>
<th>No Abuse, %</th>
<th>Physical Abuse, %</th>
<th>Sexual Abuse, %</th>
<th>Both Types of Abuse, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression (50.4%)</td>
<td>45.7</td>
<td>65.4</td>
<td>61.9</td>
<td>69.7</td>
</tr>
<tr>
<td>Rage (40.1%)</td>
<td>37.8</td>
<td>54.7</td>
<td>53.5</td>
<td>51.2</td>
</tr>
<tr>
<td>Suicide attempt (12.1%)</td>
<td>9.1</td>
<td>20.1</td>
<td>23.1</td>
<td>28.9</td>
</tr>
</tbody>
</table>

*Percentage of total sample reporting.*

**DISCUSSION**

When we look across risk behaviors—whether in the form of violence, substance use, or early sexual intercourse—certain factors are associated with much lower rates of involvement, whereas other factors are associated with significantly higher rates. Specifically, youths who report rage, having experienced physical or sexual abuse, or having a friend or family member who has attempted or completed suicide are at significantly greater risk than their peers of reporting involvement in health risk behaviors and experiences of emotional distress. In addition, many of these same young people report skipping school more frequently than their peers.

Conversely, young people who report connectedness to their parents are much less likely than others to report involvement in or experiencing of these negative health outcomes. Likewise, attendance at religious services is associated with less involvement in a range of risk behaviors. The same is true for school connectedness (as measured via “trying hard in school”), which we found to be associated with better self-assessed health status and less sexual intercourse among youths aged 13 to 15 years. When these risk and protective factors are compared with those seen among young people in the United States, a number of similarities as well as important differences arise.

For example, in the Caribbean, as in the United States, family is central to the health and well-being of young people. Specifically, in both the Caribbean and the United States, young people are at increased risk for negative health outcomes and emotional distress when they have a family history of suicidal thoughts and attempts. In addition, in both regions violence has been found to be associated with a history of family suicide, as have adolescent emotional distress and suicidality.9

Conversely, family connectedness has been shown to be associated with lower risk involvement, better self-assessed health status, and fewer reported suicidal attempts. Borowsky et al.10 in their study of US adolescents, found that parent/family connectedness was protective against suicidality across both sexes and across all ethnic groups examined. This result was consistent with Borowsky et al’s findings among Native American youths and Guiao and Esparza’s findings for Mexican American teenagers. In terms of violence involvement, Blum and Rinehart11 reported positive parent/family relationships to be associated with lower rates of violence among all of the groups of adolescents they studied except White females. Although important differences in family structure can be found between the Caribbean and the United States, it is clear that, in both contexts, family matters.

School matters in both settings as well. Specifically, in both the United States14 and the Caribbean, school connectedness is associated with significantly fewer reported instances of emotional distress, suicidality, and early sexual intercourse. Resnick et al.15 found such associations in a population of youths residing in Minnesota, and Steinberg16 and Hawkins et al.17 suggested that creating bonds with the school is critically important to positive youth outcomes. The current findings suggest that this North American association is not unique.

Finally, in terms of factors specific to individuals, physical abuse and sexual abuse have consistently been found to produce devastating effects in both the Caribbean and US contexts. In the United States, abuse has been associated with increased rates of tobacco use, interpersonal violence, and emotional distress and suicidality among almost all groups of adolescents.15 Similar associations have been revealed in the Caribbean.

A characteristic that seems to be less consistent between the 2 settings is rage. In our study, 2 of every 5 respondents endorsed an item related to feeling homicidal rage some or nearly all of the time. There was a clear sex bias, with males more likely to report experiencing such rage; however, there was a comparable sex bias in regard to interpersonal violence. Few data are available on the prevalence of rage among US adolescents. However, the factors shown to be associated with lower rates of reported rage in the Caribbean context (e.g., parent connectedness) and those that seem to exacerbate such emotions (parental violence, physical/sexual abuse) would presumably be similar in the United States.

**CONCLUSIONS**

A number of serious health issues are faced by young people in the Caribbean.
What is clear, however, is that many of the factors associated with lower rates of participation in risk behaviors in the United States are the same in the Caribbean. This similarity is not surprising, in that many of the factors identified relate to the establishment of human bonds. What this finding does suggest, however—if US experiences provide any guide—is that interventions that strengthen the protective factors present in the lives of young people tend to be more effective than those focused on risk reduction alone. We must apply our understanding of risk and protective factors to developing interventions that improve the outcomes experienced by all young people.

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Contributors

R W. Blum was the principal investigator on this study and the lead author. L. Halcón wrote sections of the article and coordinated the data analysis. T. Beuhring developed the sampling frame, participated in the country training, and worked with national-level statisticians to ensure the representativeness of the samples. E. Pate conceptualized the original study, coordinated the nine countries collaborating in the project, and wrote sections of the article. S. Campbell-Forrester had a key role in instrument development, participated in ensuring support from the participating countries’ ministries of health, and reviewed the article. A. Venema coordinated the sample selection, oversaw data entry and management at the country level, and reviewed the article.

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Human Participant Protection

The consent protocol followed community standards requiring passive notification of parents by the school principal or senior administrator, who sent letters home by mail or with the students. The study was approved by the institutional review board of the University of Minnesota.

References