and behavior surveys,24 items from exist-

ing standardized scales25 and several new
items. We pilot-tested the survey with 25
young people who were not members of a
Project IMPPACT group at two schools in
the same school districts as the Project
IMPPACT schools, and followed this with a
focus-group discussion. Sample scale
items and reliability coefficients (Cron-
bach’s alpha) are summarized in Table 1.
Alphas for the scales were moderate to
high (.64–.87) for all but two scales. The
Parental Sex Attitudes scale, which
consisted of only two items, had an alpha
of .54, and the pregnancy attitudes scale,
which consisted of four items, had an alpha
of .58. Thus, findings related to these two scales must be interpreted with caution.

Sexual activity and sexual behavior
questions were modified versions of ques-
tions from the New York City High School
AIDS Evaluation Study and the ENABL
study.26 In addition, both students who
were sexually active and those who were
not were asked about their intention to
have sex within the next six months.

The Teenage Sex Attitudes scale was
based on revised versions of questions
from two existing sexual behavior sur-
veys27 and included concepts such as: “It’s
okay for people my age to have sex with
a boyfriend or girlfriend.” The Teenage
Pregnancy Attitudes scale measured con-
cepts such as “getting (someone) pregnant
now would really mess up my future.”
Items were revised versions from an ex-
isting sexual behavior survey.28

The Locus of Control scale measured
students’ perceptions of how much con-
trol they had over the events and circum-
stances of their lives. The Self-Efficacy
scale measured students’ perceptions of
their abilities to say no to sex under a va-
riety of circumstances. Both were taken
from the New York City High School
AIDS Evaluation Study.29 The Kandel De-
pression Scale30 measured the degree to
which students had experienced a variety
of symptoms of depression in the past six
months. Self-esteem was measured using
a modified version of the 10-item Rosen-
berg Self-Esteem Scale,31 but with more
adolescent-friendly language (as deter-
mined by the pilot test).

The scales measuring the students’
relationship and communication with
their parents were taken from the New
York City High School AIDS Evaluation
Study. The Parental Talk scale measured
students’ assessments of the degree to
which they could talk to their parents
about a variety of problem areas, includ-
ing drugs, alcohol, sex and school prob-
lems. The Parental Sex Attitudes scale
measured students’ perceptions of their
parents’ or guardians’ attitudes about
teenagers having sex, such as “My par-
ents/guardians would be upset if they
thought I was having sex.” The Parental
Respect scale measured the students’
desire to follow their parents’ guide-
lines, such as “I usually do what my par-
ents/guardians want me to.” The Parental
Relationship Scale included all items in
the Parental Respect, Parental Sex Attitudes
and Parental Talk Scales, plus one addi-
tional item that reflected an overall mea-
surement of the parent-child relationship.

Among the limitations of the survey
method are the difficulty of measuring
complex attitudes and behaviors using a
pencil-and-paper test, variations in litera-
cy and the time constraints imposed by the
school schedule. In anticipation, we sim-
plicated the language of the survey where
possible, provided assistance to students
who had difficulty reading the survey and
made every effort to allow sufficient time
to complete the survey. Furthermore, while
standardized scales may have the advan-
tage of extensive validity and reliability
testing, we modified existing standardized
measures to assure adolescent-friendly
language and to increase students and
school staff’s comprehension of, comfort
with and acceptance of the survey.32

Retention Rates
In our pretest cohort, a total of 527 pretests
were conducted among intervention and
comparison students; 417 of these students
completed posttests, for a retention rate of
79%. Some students who were not retained
in the study dropped out of the interven-
tion after one or two sessions, and thus
were no longer eligible for the study (Table
2, page 240). Further, as this was the first
year of the program, there was a higher rate
of dropout from the early sessions of the
groups than in subsequent program years.

Table 1. Among scales used in one-year fol-

low-up survey, number of items, range in
scores, desired direction and alpha value

<table>
<thead>
<tr>
<th>Scale</th>
<th>No of Items</th>
<th>Range</th>
<th>Desired Direction</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>6</td>
<td>6–18</td>
<td>lower</td>
<td>.73</td>
</tr>
<tr>
<td>Self-esteem</td>
<td>10</td>
<td>10–40</td>
<td>higher</td>
<td>.79</td>
</tr>
<tr>
<td>Locus of control</td>
<td>5</td>
<td>5–20</td>
<td>higher</td>
<td>.64</td>
</tr>
<tr>
<td>Self-efficacy</td>
<td>3</td>
<td>3–12</td>
<td>higher</td>
<td>.64</td>
</tr>
<tr>
<td>Teenage sex attitudes</td>
<td>7</td>
<td>7–28</td>
<td>higher</td>
<td>.72</td>
</tr>
<tr>
<td>Teenage pregnancy attitudes</td>
<td>4</td>
<td>4–16</td>
<td>higher</td>
<td>.58</td>
</tr>
<tr>
<td>Parental relationship</td>
<td>11</td>
<td>11–44</td>
<td>higher</td>
<td>.79</td>
</tr>
<tr>
<td>Parental respect</td>
<td>3</td>
<td>3–12</td>
<td>higher</td>
<td>.70</td>
</tr>
<tr>
<td>Parental sex attitudes</td>
<td>2</td>
<td>2–8</td>
<td>higher</td>
<td>.54</td>
</tr>
<tr>
<td>Parental talk</td>
<td>5</td>
<td>5–20</td>
<td>higher</td>
<td>.87</td>
</tr>
</tbody>
</table>

*Sexual activity was defined by the response to the ques-
tion “Have you ever had sexual intercourse (sex)?” Stu-
dents could respond no, yes or “I have fooled around but
I have never had sex.” Sexually active students were de-
efined as those who responded yes only; they were then
asked a series of follow-up questions on age at first in-
tercourse, number of partners, contraceptive use and
other details regarding their sexual behavior.