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Role Modeling, Risk, and Resilience in California Adolescents

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A B S T R A C T

Purpose: To examine the relationship between role model presence, type of role model, and various health-risk and health-protective behaviors among California adolescents.
Methods: We used cross-sectional data on 4,010 multiethnic adolescents aged 12–17 years from the 2003 California Health Interview Survey, a population-based random-digit dial telephone survey of more than 40,000 California households. The survey, conducted every other year since 2001, collects extensive demographic, health, and health-related information.
Results: Fifty-nine percent of adolescents identified a role model. Affluent teens were more likely to have a role model than lower income teens. Role models were generally of the same ethnicity and gender as the teens; ethnic congruence was higher among African Americans and whites than Latinos and Asians; gender congruence was higher among males. Type of role model was significantly associated with health-related behaviors. Identification of a teacher was strongly associated with positive health behaviors. Correlations with health-promoting behaviors were generally smaller in magnitude but consistently positive among family member and athlete role models. Peer or entertainer role models were associated with health-risk behaviors.
Conclusion: Not only role model presence but also the type of role model is an important predictor of adolescent health-related behaviors. Our findings have implications for designing youth targeted interventions and policies involving role models.

The transition from childhood to adulthood is critical: patterns of behavior and lifestyle choices established during adolescence can have immediate and lasting effects on health. Teenage smoking, excessive drinking, and drug use, for example, are strongly linked to an array of important health outcomes later in life, including cardiovascular disease and stroke, hypertension, diabetes, obesity, substance abuse and depression – conditions currently among the leading contributors to premature disability and preventable death in the United States [1,2]. However, it has been well documented that risk factors in adolescents tend to cluster, such that a subset of youth engage in multiple risk behaviors, including unprotected sexual intercourse, substance use, violent behavior, and academic underachievement [3–5]. Given that teen behavior is greatly influenced by peers and existing social relationships, role modeling and mentoring may be constructs of particular value in efforts to influence health-risk and health-protective behaviors among adolescents.

A role model is an individual who is perceived as exemplary or worthy of identification or imitation, and their selection can reflect critical elements of psychosocial functioning and self-perception in adolescents [6,7]. The result is a conscious or unconscious emotional attachment which *may* or *may not* involve direct personal contact (e.g., identification with sports or entertainment figures encountered only through print or electronic media). Mentors are a distinct subset of role models, although

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generally considered synonymous with *known* role models, such as family members, teachers, or friends [8,9]. Mentors deliberately support, guide, and shape individuals younger or less experienced than themselves as they weather difficult periods, enter new arenas, or undertake challenging tasks. Although the distinction between role models and mentors is not consistent in extant literature, mentors tend to be both directly known and deliberate in their actions toward mentees. Because the intention of admired persons was not ascertained in the present study, a clear distinction between role models and mentors cannot be established. For this reason, the more general term "role model" will hereafter be used to refer to all types of admired persons.

Support for the pro-social utility of role modeling is growing [10–17]. Several empirical studies among ethnically diverse and particularly high-risk convenience samples of adolescents support the positive effect of role models on certain measures of resilience, that is, successfully responding to challenges or overcoming adversity and mitigating risk [5,18,19]. For example, having a role model, particularly an individual known to the adolescent, has been linked to more positive ethnic identity, higher self-esteem, higher academic performance, decreased substance use, fewer behavioral problems in school, higher levels of physical activity, and lower levels of engagement in early or high-risk sexual activity [9,12,16,20–25].

The effect of role modeling, however, is not always health-promoting. These influences also may be associated with health-risks, including the greater likelihood that teen fathers come from families in which there were role models for teen parenthood [26]. In addition, the effectiveness of role models in encouraging the adoption of profitable, commercially desirable health-risk behaviors, such as cigarette smoking and alcohol consumption, is well-known and well-utilized in the advertising industry [27–30].

Despite mounting evidence of the importance of role modeling in youth development and health promotion, there have been relatively few investigations of the influence of role models on teen health behaviors. Recent data have been published on the subset of youth with mentors [16], but we could find little empirical data examining the broader construct of role modeling itself. Our earlier work on adolescent role model selection demonstrated that young people generally identify sociodemographically similar, ethnically congruent role models [9] and those who have a role model, among other resiliency factors, are generally less likely to engage in health-risk behaviors [31]. In this study, we further discern role model characteristics and examine not only role model presence, but also the relationship between specific role model types and a broad array of both health-risk and health-protective behaviors in a large, ethnically diverse and representative sample of California adolescents.

Methods

This study used the adolescent sample (N = 4,010) of the 2003 California Health Interview Survey (CHIS, 2003), a large population-based telephone survey of California households conducted every other year since 2001. The sample is representative of the state's population residing in households. In addition to adolescents (age, 12–17), CHIS 2003 interviewed one randomly selected adult (age, 18 years and older) in each participating household. In households with children (age, 0–11), a child was randomly selected to be interviewed by parental proxy. Interviews were conducted in English, Spanish, Chinese (Mandarin and Cantonese dialects), Korean, and Vietnamese to capture the rich diversity of California's population.

Adolescent participation in CHIS required that the selected adult respondent was the parent or legal guardian of the teen and that both reside in the same household. If there was more than one eligible teen in the home, one was selected at random for the adolescent interview. Adolescent interviews were conducted directly with the teen after parental permission and adolescent consent. Adolescent interviews averaged 21.5 minutes in length and covered a wide range of health and health-related topics.

The average (mean) age of the CHIS 2003 adolescent sample was 14.5 years. Teens who identified as American Indian or Alaska Native, Pacific Islander, multiple or other race were combined because of sample limitations. The racial/ethnic distribution of the sample by poverty level, country of birth, and gender is reported in Table 1.

The statewide response rate for the CHIS 2003 adolescent interview was 57%, calculated with the American Association for Public Opinion Research response rate equation 4. The response rate increases to 83% if nonresponse because of parents not granting permission to interview their teen is excluded. Detailed information about the CHIS 2003 response rates, methodology, and survey content is available at http://www.chis.ucla.edu/methodology.html. This study was approved by the University of California, Los Angeles institutional review board.

Presence of a role model was assessed by asking, "Is there a person you know or have read about that you admire and would want to be like?" To inform role model type, teens who re-

Table 1
Adolescent race/ethnicity as a function of poverty, country of birth, and gender

	Total (%)	Poverty level (%)		Country of birth (%)		Gender (%)	
		< 200% FPL (federal poverty level)	> 200% FPL	United States	Other	Male	Female
Race/Ethnicity							
African American	9.0	43.1	56.9	96.9	3.1[a]	50.9	49.1
Asian	10.2	38.6	61.4	63.3	36.7	52.7	47.3
Latino	34.0	71.2	28.8	74.1	25.9	51.7	48.3
Other/American Indian/Alaska Native, Pacific Islander, Multiple	5.4	45.9	54.1	90.5	9.5[a]	50.1	49.9
White	41.4	18.8	81.2	96.0	4.0	50.6	49.4
Total (%)		42.3	57.5	85.0	15.0	51.2	48.8
Weighted n	3,260,000	1,379,000	1,881,000	2,771,000	489,000	1,669,000	1,590,000
Unweighted n	4,010	1,696	2,314	3,409	601	2,048	1,962

[a] Statistically unstable.

sponded affirmatively were then asked, "Is this person a family member, an athlete, an entertainer, a teacher, a friend your own age, or someone else?" If "someone else" was reported, teens were asked to further characterize this person. Responses were recorded as text and included a myriad of political, religious, historical, and other known and unknown persons. No single response reached sufficient numbers to warrant further categorization and a combined "other" category was retained for the analyses. Two additional questions were also asked to ascertain the gender and race/ethnicity of all identified role models.

Seven health outcomes were measured to test for associations among adolescent health behavior and role model presence and type. Two of the outcomes were health-promoting behaviors: adequate fruit and vegetable intake (at least five servings daily) and regular physical activity (at least 20 minutes of moderate or vigorous exercise on 3 or more of the past 7 days). The other outcome measures emphasized health-risk behaviors and included current smoking (smoked more than three cigarettes in the past 30 days), current drinking (consumed alcohol in the past 30 days), marijuana use (smoked marijuana in the past 30 days), fighting (involved in one or more fights with peers in the past 12 months), and sexual initiation (ever engaged in sexual intercourse). The current smoking, drinking, and marijuana use questions were asked only of those who reported "ever smoking" (N = 762), "ever drinking a sip of alcohol" (N = 1,510), or "ever trying marijuana, cocaine, sniffing glue, or any other drugs" (N = 536), respectively. Fighting and sexual initiation, as well as the two health-promoting outcomes, were assessed among all teens.

Several socio-demographic variables were used in the analysis to control for potential confounding factors, including age, race/ethnicity (Hispanic/Latino, Asian, African American, white, and other), federal poverty level (0%–99%, 100%–199%, 200%–299%, and 300% and above the federal poverty level), family type (married or single-parent), depressive symptoms, perceived body image, and home and school connectedness.

Depressive symptoms were measured using an 8-item condensed version of the Center for Epidemiology Studies-Depression Scale, which has shown good face and construct validity [32] as well as internal consistency in this sample ($\alpha = .77$). Responses were assessed on a 4-point Likert scale and summed across the eight items, with lower values indicating fewer depressive symptoms. A cut-off score of 7 or more (approximately the 80th percentile) was used to signify a significant level of psychological distress. Scoring was based on the original 20-item Center for Epidemiology Studies-Depression Scale [33] and adapted to reflect the condensed scale.

Perceived body image was assessed by asking, "Would you say you are very underweight, slightly underweight, about the right weight, slightly overweight, or very overweight?" Because an association between overweight adolescents and health-related behavior has been reported in previous literature [34], as well as to maintain an adequate sample size, responses were dichotomized into "very underweight to about right (0)" and "slightly overweight to very overweight (1)".

Home and school connectedness were each measured using modified sub-scales of the Healthy Kids Resiliency Assessment [35]. The 7-item home connectedness sub-scale asked respondents the degree to which the adults at home cared about them and had high expectations of them (e.g., "In my home, there is a parent or some other adult who talks with me about my problems"). Responses were assessed on a 4-point Likert scale (0 = not at all true, 1 = a little true, 2 = pretty much true, 3 = very much true) and an average score was calculated by summing across and dividing by the total number of items. Scores ranged from 0 to 3, with higher values indicating greater home connectedness. Internal consistency for home connectedness in this sample was high ($\alpha = .81$).

The 6-item school connectedness sub-scale asked respondents the degree to which they had adults at school who cared about them (e.g., "At my school, there is a teacher or some other adult who tells me when I do a good job"). Responses were assessed and scored using the same method as home connectedness described in the preceding paragraph. The school connectedness scale also showed high internal consistency ($\alpha = .79$).

Descriptive statistics (univariate and cross-tabulations) were generated for the study variables. Logistic regressions were used to calculate odds ratios for each health outcome on the basis of the presence and type of role model, controlling for age, race/ethnicity, poverty level, family type, depressive symptoms, perceived body image, and home and school connectedness.

Statistical analyses were conducted using SPSS (IBM SPSS Statistics 15, Chicago, IL) and performed using sample weights that represent the adolescent population residing in California households. Detailed information about the CHIS 2003 weights is available at http://www.chis.ucla.edu/methodology.html.

Results

Fifty-nine percent of California adolescents indicated that they had a role model. Family member was the most commonly identified role model type, followed by athlete, entertainer, other, friend, and teacher (Table 2). Teens from lower income households (below 200% of the federal poverty level) were less likely to report a role model than their more affluent peers (53% vs. 64%). Although there were few notable gender and racial/ethnic differences in the presence (or lack) of a role model, there were considerable differences by role model type. Males were more than 4 times as likely to report an athlete as a role model, whereas females were twice as likely to report each of family member, teacher, and friend. African Americans (28%) were more likely to identify an athlete as a role model, whereas Asians (14%) identified a friend far more than other racial/ethnic groups. African American (50%) and white (53%) adolescents were more likely to report role models of the same racial/ethnic group than Asians (31%) and Latinos (28%). Females (79%) were less likely to identify a role model of the same gender than their male counterparts (96%).

Few gender differences were observed among the health outcomes measured in this study. Males (75%), however, were more likely to engage in regular physical activity than females (67%), and more than twice as likely to report fighting in the past 12 months. African Americans were less likely to consume five fruits and vegetables daily than other racial/ethnic groups. Whites had the highest reported rates of regular physical activity. Asian adolescents stood out for having much lower rates of smoking, sexual initiation, and fighting than other racial/ethnic groups. Whites and Latinos were more likely to report consuming alcohol in the past 30 days than either African Americans or Asians.

A series of logistic regression models were run to predict the likelihood of adolescent health behaviors based on the presence and type of identified role model, controlling for the aforementioned factors (age, gender, race/ethnicity, poverty level, family type, depressive symptoms, perceived body image, and home

Table 2
Adolescent role models, health outcomes, and risk factors as a function of demographic variables

Demographic variables	Total (%)	Gender (%)		Race/Ethnicity (%)					Poverty level (%)	
		Male	Female	African American	Asian	Latino	American Indian/Alaska Native, Native Hawaiian/Pacific Islander, multiple or other	White	< 200% FPL	> 200% FPL
Role model type										
None	40.8	42.2	39.3	36.3	44.9	47.2	44.0	35.2	47.1	36.2
Family member	16.1	10.7	21.8	15.7	16.2	16.4	13.3	16.4	14.6	17.3
Teacher	3.2	1.7	4.7	1.4	1.7	3.4	4.8	3.5	3.2	3.2
Friend	5.4	3.6	7.3	2.1	13.8	3.8	2.8	5.8	5.4	5.4
Entertainer	11.2	9.0	13.4	12.0	7.8	9.3	12.0	13.3	11.2	11.2
Athlete	14.5	23.5	5.2	28.0	6.4	14.0	13.6	14.2	12.5	16.1
Other[a]	8.7	9.2	8.2	4.7	9.1	6.0	9.6	11.6	6.1	10.6
Health outcome[b]										
Eats five a day	25.0	26.1	23.8	17.1	28.7	25.0	20.5	26.4	25.8	24.4
Moderate/vigorous physical activity	70.6	74.6	66.5	62.7	62.3	68.1	71.7	76.4	66.3	73.8
Currently smokes	5.8	5.5	6.0	4.5	1.0	6.2	11.5	6.2	6.9	4.9
Used alcohol in past 30 days	44.2	42.4	46.4	27.1	25.8	46.9	53.1	45.5	43.7	44.5
Used marijuana in past 30 days	5.9	6.1	5.7	3.5	.4	5.6	15.7	6.7	5.7	6.1
Ever had sex	16.0	16.9	15.0	17.4	6.2	17.6	21.9	15.8	17.4	14.9
Fights in past 12 months	19.5	26.3	12.4	29.2	6.2	23.1	23.2	17.3	22.2	17.6
Role model same ethnicity as respondent	39.0	34.1	44.0	49.5	31.2	27.8	2.5	52.5	32.7	43.6
Role model same gender as respondent	87.8	96.2	79.3	94.2	84.8	84.6	88.0	89.1	86.2	88.7
Single-parent family	32.0	33.2	30.6	56.0	19.6	30.0	50.4	29.0	41.2	25.2
Home connectedness										
Mean (SD)	2.66 (.45)	2.65 (.47)	2.67 (.43)	2.72 (.41)	2.58 (.49)	2.52 (.49)	2.61 (.46)	2.76 (.37)	2.56 (.51)	2.73 (.38)
School connectedness										
Mean (SD)	2.20 (.63)	2.14 (.62)	2.27 (.63)	2.3 (.59)	2.09 (.66)	2.18 (.62)	2.2 (.58)	2.28 (.6)	2.11 (.65)	2.27 (.61)
Depressive symptoms	23.6	21.1	26.3	27.9	17.8	30.3	33.0	17.4	31.1	18.1
Body image slightly/very overweight	28.6	26.2	31.2	26.8	24.0	36.5	30.4	23.4	32.8	25.6
Total (%)		51.2	48.8	9.0	10.2	34.0	5.4	41.4	42.3	57.7
Weighted n	3,260,000	1,669,000	1,590,000	294,000	333,000	1,109,000	175,000	1,349,000	1,379,000	1,881,000
Unweighted n	4,010	2,048	1,962	263	313	1,125	238	2,071	1,696	2,314

[a] Other category of role model likely includes political, religious and historical figures.
[b] The current smoking, drinking, and marijuana use questions were asked only of those who reported ever smoking, drinking, or trying drugs, respectively. Fighting, sexual initiation, fruit/vegetable intake, and physical activity were assessed among all teens.

Table 3
Odds ratios (95% CIs) for adolescent health outcomes[a] as a function of role model type and demographic variables[b]

	Eats five a day	Moderate/vigorous physical activity	Currently smokes	Used alcohol in past 30 days	Used Marijuana in past 30 days	Ever had sex	Fights in past 12 months
Nagelkerke R^2	.075	.090	.209	.106	.228	.336	.150
Independent variables	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Role model type							
None	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Family member	1.91 (1.90–1.93)	1.35 (1.34–1.36)	.80 (.79–.81)	1.12 (1.10–1.13)	.92 (.91–.94)	1.15 (1.13–1.16)	.97 (.96–.97)
Teacher	2.05 (2.02–2.08)	2.02 (1.99–2.06)	.68 (.66–.70)	.64 (.62–.65)	.41 (.40–.43)	1.28 (1.25–1.30)	.45 (.43–.46)
Friend	1.20 (1.18–1.21)	1.32 (1.31–1.34)	1.13 (1.10–1.16)	1.22 (1.20–1.24)	1.75 (1.71–1.78)	1.29 (1.27–1.31)	1.59 (1.57–1.61)
Entertainer	1.27 (1.26–1.28)	.92 (.91–.92)	1.52 (1.50–1.54)	1.17 (1.16–1.18)	1.39 (1.37–1.41)	1.31 (1.30–1.33)	1.56 (1.54–1.57)
Athlete	1.35 (1.34–1.36)	2.00 (1.98–2.02)	1.05 (1.03–1.06)	1.04 (1.03–1.05)	.96 (.94–.97)	1.04 (1.03–1.06)	.92 (.91–.92)
Other[c]	1.86 (1.84–1.88)	1.38 (1.37–1.40)	.85 (.83–.86)	.85 (.84–.86)	.69 (.67–.70)	.71 (.70–.72)	.85 (.84–.86)
Age	.89 (.89–.90)	.86 (.86–.86)	1.87 (1.86–1.88)	1.35 (1.34–1.35)	1.90 (1.89–1.90)	2.38 (2.38–2.39)	1.08 (1.07–1.08)
Gender							
Male	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	.80 (.79–.80)	.70 (.69–.70)	1.18 (1.16–1.19)	1.19 (1.18–1.20)	.91 (.90–.92)	.83 (.83–.84)	.37 (.36–.37)
Race/Ethnicity							
White	1.00	1.00	1.00	1.00	1.00	1.00	1.00
African American	.53 (.52–.53)	.53 (.52–.53)	.55 (.53–.56)	.41 (.40–.42)	.46 (.45–.47)	1.06 (1.05–1.07)	1.79 (1.77–1.80)
Asian	1.20 (1.19–1.22)	.54 (.54–.55)	.14 (.14–.15)	.40 (.39–.41)	.05 (.05—.05)	.33 (.33–.34)	.25 (.25–.25)
Latino	.89 (.88–.89)	.77 (.77–.78)	.76 (.75–.77)	1.09 (1.08–1.10)	.80 (.79–.81)	1.07 (1.06–1.08)	1.16 (1.15–1.17)
Other/American Indian/Alaska Native, Pacific Islander, Multiple	.71 (.70–.71)	.90 (.90–.91)	1.44 (1.41–1.47)	1.34 (1.32–1.36)	2.62 (2.5–2.66)	1.37 (1.35–1.39)	1.19 (1.18–1.21)
Poverty level							
0%–99% FPL	1.00	1.00	1.00	1.00	1.00	1.00	1.00
100–199	.63 (.63–.64)	.88 (.88–.89)	.96 (.95–.98)	.78 (.77–.79)	1.49 (1.47–1.51)	.95 (.94–.96)	.91 (.90–.91)
200–299	.59 (.58–.59)	.92 (.92–.93)	1.08 (1.06–1.09)	1.26 (1.24–1.27)	2.12 (2.08–2.16)	1.29 (1.27–1.30)	1.12 (1.11–1.13)
300+	.57 (.57–.58)	1.13 (1.12–1.14)	.68 (.67–.69)	1.00 (.99–1.02)	1.49 (1.46–1.51)	.86 (.85–.87)	.85 (.84–.86)
Single-parent family	.93 (.93–.94)	.88 (.88–.89)	1.81 (1.79–1.82)	1.25 (1.24–1.26)	1.61 (1.59–1.63)	2.04 (2.02–2.05)	1.35 (1.34–1.36)
Home connectedness	1.41 (1.40–1.42)	1.23 (1.23–1.24)	1.04 (1.03–1.05)	.89 (.88–.90)	1.14 (1.13–1.15)	1.04 (1.04–1.05)	.72 (.71–.72)
School connectedness	1.41 (1.40–1.41)	1.07 (1.06–1.07)	.66 (.65–.66)	.83 (.83–.84)	.66 (.66–.67)	.75 (.75–.76)	.74 (.74–.75)
Depressive symptoms	.97 (.96–.98)	.76 (.75–.76)	2.18 (2.16–2.20)	1.07 (1.06–1.08)	2.30 (2.27–2.32)	1.75 (1.74–1.77)	1.58 (1.57–1.59)
Body image slightly/very overweight	.96 (.95–.96)	1.00 (1.00–1.01)	.91 (.90–.92)	.73 (.72–.73)	1.09 (1.08–1.10)	.88 (.87–.88)	1.13 (1.12–1.13)

[a] The current smoking, drinking, and marijuana use questions were asked only of those who reported ever smoking, drinking, or trying drugs, respectively. Fighting, sexual initiation, fruit/vegetable intake, and physical activity were assessed among all teens.
[b] All odds ratios are statistically significant at $p < .05$, except 300+% FPL by 30-day alcohol use.
[c] Other category of role model likely includes political, religious and historical figures.

and school connectedness). Table 3 reports odds ratios for each health behavior by role model type and demographic variables; the reference category is no role model.

A strong and consistent relationship between role model type and adolescent health behavior was observed (Figure 1). Adolescents with a teacher-identified role model were the most likely to engage in the health-promoting behaviors measured in this study (adequate fruit and vegetable consumption and regular physical activity) as compared with adolescents without a role model. For such positive health behaviors, family members, athletes (especially for physical activity), and other role models also had strong positive predictive power. Only teens who reported an entertainer as a role model had reduced odds of engaging in a health-promoting behavior (regular physical activity) as compared with teens who reported no role model. Although the magnitude of the coefficient was small for entertainer-identified role model on regular physical activity, it was significant.

Regardless of role model type, the presence of a role model had a nearly universal positive influence on health-promoting behaviors among California adolescents. In contrast, role model type strongly differentiated the teen sample when negative behaviors were considered. Teens who reported a friend or entertainer as a role model were more likely to smoke cigarettes, drink alcohol, use marijuana, engage in sex, and report participating in a fight than teens with no role model, with only a few exceptions. The consistency and direction of the relationship between health-risk behaviors and friend- or entertainer-identified role models was striking, as was the magnitude of the coefficients. For example, California adolescents who reported an entertainer as a role model had 52% higher odds of smoking, nearly 40% higher odds of marijuana use, and 56% higher odds of participating in a fight in the past 12 months compared with teens who had no role model.

Teens who reported a teacher, and to a lesser extent a family member, as a role model were far less likely to engage in most of the health risk behaviors included in this study as compared with teens who did not indicate the presence of a role model. Teens who reported a teacher as a role model, for example, had approximately 30%–60% lower odds of smoking, using alcohol or marijuana in the past 30 days, or participating in a fight in the past 12 months, compared with adolescents with no role model.

There were some exceptions to aforementioned trends which are visually evident in Figure 1. For example, of the seven health outcomes measured, neither role model presence nor role model type appeared to influence whether an adolescent has engaged in sex. Moreover, family member role models, while protective in all other behaviors except sexual activity, increased the likelihood that a teen has consumed alcohol in the

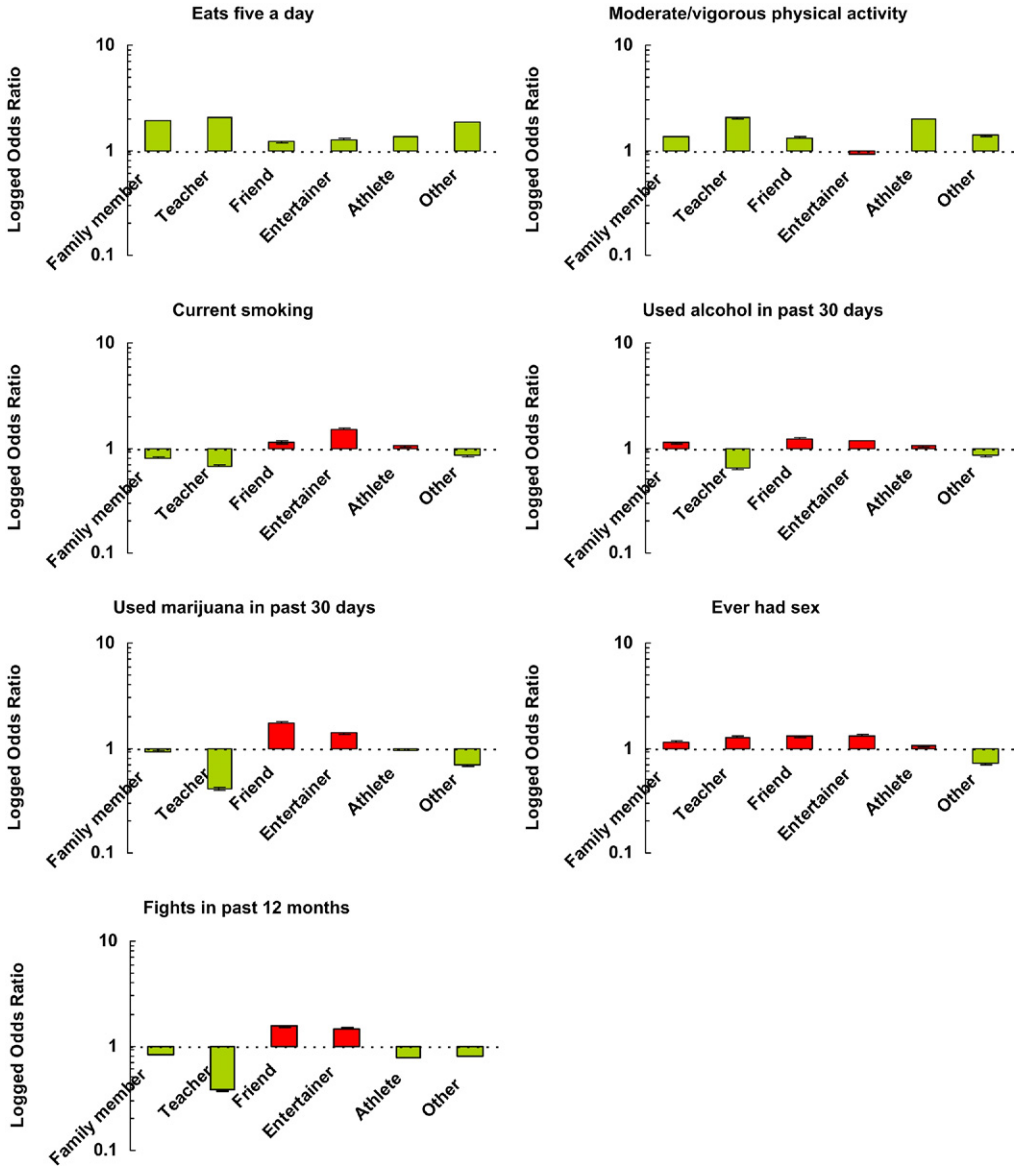

Figure 1. Logged odds ratios for role models type and health behaviors.

past month. Although seemingly inconsistent with such well-documented resiliency factors as supportive parenting and strong family ties [31], these findings serve as an important reminder that behavior is complex and multidimensional. Clearly, role models are an important predictor of a variety of adolescent health outcomes, but they remain just one of the many key factors. In our analyses, for example, sexual initiation was most strongly influenced by socio-demographic covariates such as age, family type, and depressive symptoms (ORs = 2.38, 2.04, and 1.75, respectively). Nevertheless, the results reported in Table 3 show a strong and consistent pattern between role model presence, role model type, and health behavior among adolescents in California – that is, having a role model matters, but it is often the type of role model, rather than the mere presence of a role model, that is most strongly associated with adolescent health behaviors.

Discussion

Using the CHIS 2003 adolescent sample, we found that approximately 60% of adolescents report the presence of a role model. Among teens with role models, family members were the most commonly reported type of role model, followed by athletes, entertainers, "others," friends, and teachers. Logistic regression models suggested strong and relatively consistent outcomes associated with the presence and type of role model across a range of positive and negative health behaviors. Although there were a few exceptions, a pattern emerged from our analyses indicating that adolescents with a teacher, family member, athlete or other role model were more likely to engage in positive health behaviors (e.g. adequate fruit and vegetable consumption and regular physical activity) and avoid detrimental behaviors (e.g. smoking, drinking and drug use) in comparison

with those without a role model and those who identified entertainers or friends as role models. In general, teens who identified entertainers or friends as role models were more likely to engage in health-risk behaviors than either teens without a role model or those with different types of role models.

Although our findings were surprisingly strong and consistent, this study has several limitations. First and foremost, the cross-sectional nature of these data does not allow us to determine the directionality of the relationship between role model selection and health-related behaviors. We cannot tell, for example, whether teens who decide to smoke are more likely to identify with an entertainer or whether teens who identify with entertainers are more likely to decide to smoke; the direction of these relationships could be informed by qualitative methods or through a longitudinal survey that explored these issues. Additionally, are teens who select teachers and others (presumably political, historical, and other figures) as role models inherently more academically inclined and risk-averse than their counterparts? Another notable limitation of this study is our limited ability to more deeply explore the determinants of role model presence and type. For example, neighborhood characteristics may influence and contextualize role models and health behaviors and are an important avenue for future inquiry. We also have limited information about teens who identified role models beyond the scope of our pre-existing coding scheme. In particular, teens who reported other role models had the best health behavior profile of all adolescents in the sample and may provide important clues as to strategies to optimally influence teen health behaviors.

Efforts using role models in youth development and health promotion cover a spectrum of cost and exposure intensities, from one-to-one mentoring programs at the high end to "career day" events at the low end, with culturally-grounded rites of passage programs somewhere in the middle. However, one-to-one mentoring opportunities, generally considered the "gold standard" of role modeling, are especially limited for low-income ethnic minority adolescents, whereas effective alternatives that expose youth to appropriate and relevant role models are still early in their development. Moreover, the process by which youth more organically identify role models is not well understood. The findings of this study support and extend our earlier work, demonstrating that the mere selection of a role model, irrespective of whether there is accompanying interpersonal interaction with that person, is associated with positive outcomes [9]. We have also underscored the high likelihood of ethnic and gender congruence of selected role models, consistent with the assertion in social cognitive theory that individuals choose to emulate others that they perceive as similar to themselves [6]. This emerging literature should bolster efforts to provide positive exemplars of ethnically diverse individuals of both genders, and efforts to control youth exposure to negative exemplars (e.g., smoking in films). Policy intervention to control exposure is certainly more straightforward than is the process of increasing exposure to and selection of constructive role models. However, progress in this arena is pivotal in advancing the field of adolescent health promotion.

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