

# Peer Mentoring for Health Behavior Change: A Systematic Review

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**Background:** Peer mentoring can be a powerful complement to health instruction. Mentoring has been used to change health behaviors and promote sustainable lifestyle patterns in adults and, more recently, among adolescents. **Purpose:** This article reviews the use of peer mentoring to promote health practices and describes how this approach can be used in school settings. **Methods:** A systematic review of the literature identified evaluation studies on the effectiveness of peer mentoring for promoting health behavior change is presented. **Results:** A growing literature supports peer mentoring as an effective approach to health behavior change. Peer mentoring allows for the incorporation of skill-building activities; reinforcement of self-regulation activities; engagement in individual and group activities; and social support to meet personal health goals. **Translation to Health Education Practice:** With peer mentors, the promotion of health behavior change can be tailored to personal interests, talents, and the contextual environment. Mentoring programs can benefit schools by establishing social networks using positive role models of health behaviors as mentors.

## BACKGROUND

Peer mentoring programs can have meaningful and sustainable impacts on adolescents, school environments, families, and local communities while enhancing health education efforts.<sup>1,2</sup> Peer mentoring utilizes trained, older teens to actively deliver structured curricula one on one to younger adolescents (mentees). By serving as role models and health coaches, peer mentoring complements and actively supports classroom-based health instruction by helping adolescents overcome personal and social barriers to health behavior change. Peer mentors can help mentees develop decision-making and problem-solving skills that facilitate success in behavioral change efforts.<sup>3,4</sup> With training and supervision, peer mentors provide younger teens with guidance, social support, and assistance.<sup>1</sup>

Health curricula can be adapted to be delivered via trained peer mentors. Peer mentoring allows for the incorporation of skill-building activities; reinforcement of self-regulating activities; engagement in individual and

group activity; and active support of weekly goals. Through active social support, peer mentoring empowers adolescents to plan, regulate, and evaluate their personal lifestyle and build self-efficacy for health behavior change. With peer mentoring, healthy lifestyle activities can be tailored to personal interests, talents, and the social environment. At the same time, experiencing the peer mentoring approach builds friendship networks and perceived support to engage in health behaviors among friends and peers.

Schools are an obvious setting for the implementation of peer mentoring.<sup>5</sup> To broaden the range of processes and outcomes affected, many school-based programs are beginning to infuse mentoring into their curricula.<sup>6</sup> The inclusion of a mentoring component has resulted in direct improvements for children in skill development,<sup>6</sup> self-efficacy,<sup>7,8</sup> sense of self-worth,<sup>9</sup> and health outcomes.<sup>7,8</sup> School-based mentoring programs benefit not only the teenager and peer mentor but also the school and communities by establishing social networks that integrate positive role models as mentors from the same community into the school,<sup>10</sup> thus enhancing connectedness to one's school and community. It has been suggested that school connectedness is the single most effective aspect of the school environment in predicting healthier behaviors and better health.<sup>11</sup> As a result, school-based mentoring is the fastest growing form of mentoring in the United States.<sup>12</sup>

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## PURPOSE

The purpose of this article is to describe the efficacy of mentoring to promote health behaviors among adolescents in school settings. A systematic review of the literature on the effectiveness of peer mentoring for promoting health behavior change is presented. The review will focus first on the more traditional use of adult mentors followed by a more detailed review of peer mentoring effectiveness. This will be followed by a description of how to implement peer mentoring in school setting and implications for health education programs.

## METHODS

The goal was to systematically identify published evaluations of peer mentoring programs that target personal health practices of the mentees. A CINAL, PubMed.gov, and Google scholar search was conducted using the following search terms: “peer mentoring,” “health behaviors,” “randomized controlled trials,” and “evaluation.” The search was delimited to the years 1990 to the 2014 and English publications. Resulting citations were screened by abstracts and later by Methods sections to determine final publications selected for review. The following inclusion criteria were used: (1) Peer mentors were the primary form of intervention. (2) The publication reported on an impact evaluation of the program. (3) Mentees’ health behavior changes were the dependent variable in the evaluation. Health behaviors included physical activity, diet practices, condom use, medication compliance, cancer screening, breastfeeding, drug use prevention, smoking cessation, and smoking prevention. Hundreds of articles were screened for the final review. A large number of peer mentoring publications excluded focused on academic goals, occupational development, mental health, and social growth. An equally large number of peer mentoring articles did not report a formal evaluation and were also removed from the pool. Based on the screening criteria, a pool of 31 articles was reviewed. Of these, 21 focused on adult populations and 10 reported on peer mentoring among school-aged youth.

## RESULTS

Mentoring has shown promise in a variety of settings targeting a wide range of health practices. A considerable amount of this research has focused on adult populations. It is interesting to note that much of this literature employed rigorous, randomized control designs and has yielded favorable changes in health behavior. The literature on adult peer mentoring will be briefly reviewed to illustrate the wide range of health practices that have been studied. For example, Kelly et al.<sup>13</sup> and Basu et al.<sup>14</sup> used dyad peer-

based (adults mentoring adults) interventions to significantly increase condom use in high-risk populations. Other studies used peer-based interventions in randomized controlled trials (RCTs) to increase medication adherence among hard-to-reach, low-compliance populations. These populations include HIV-positive adults,<sup>15</sup> injection drug users,<sup>16</sup> and homeless people.<sup>17</sup> In each of these studies the personal approach of mentors was effective in helping individuals follow through on health-related decisions.

Adult-based peer mentoring also has proven effective for increasing health screenings and breastfeeding among low socioeconomic status women. Adult peer mentoring effectiveness on women’s health outcomes include increased mammography screening<sup>18,19</sup> and increased gynecological cancer screening.<sup>20</sup> In addition, 6 studies reported positive effects using a peer mentoring intervention to increase breastfeeding among new mothers.<sup>21-26</sup> Authors noted that peer mentoring helped build trust, change norms, and used social support methods to overcome emotional and situational barriers to cancer screening and breastfeeding.<sup>18-26</sup> A major strength of these studies is the use of RCTs targeting hard-to-reach, disadvantaged populations.

Peer mentoring has also been utilized to impact other lifestyle behaviors aimed at risk reduction and lifestyle improvement. Emmons et al.<sup>27</sup> and Malchodi et al.<sup>28</sup> reported higher rates of smoking cessation among adult peer-based interventions compared to more traditional group cessation methods. Further, peer mentoring has been used to increase physical activity rates among adults. These mentoring interventions were employed in a variety of settings, including communities,<sup>29,30</sup> churches,<sup>31</sup> and rehabilitation centers.<sup>32,33</sup> These same interventions were effective for different populations, including community-wide residents,<sup>29,30</sup> church members,<sup>31</sup> persons recovering from myocardial infarction (heart attack),<sup>32</sup> and persons with chronic diseases.<sup>30,33</sup> In all of these interventions adult peer mentoring was used as a cost-effective way to reach diverse, hard-to-reach populations and found to be an effective approach. Based on the demonstrated effectiveness of adult-based peer mentoring, literature is beginning to emerge evaluating mentoring programs targeting adolescent health behaviors.

The use of adults to mentor adolescents and targeting adolescent risk behaviors is reported in the literature. Two studies evaluated the effectiveness of adult mentoring on teen drug use. An RCT study conducted by Taylor et al.<sup>34</sup> evaluated the effects of adult mentoring on frequency of illicit drug use among middle school students. Subjects were 562 sixth graders at 3 public middle schools. They were randomized to either (1) mentoring during the sixth-grade school year and summer by middle-aged adults coupled with participation in a community service program (visits to frail seniors in nursing homes and planting trees in a community garden) and monthly parent activities or support workshops as well as a 27-lesson, school-based Positive

Youth Development Curriculum (PYDC) or (2) community service, parent workshops, and the Positive Youth Development Curriculum without the mentoring component. Three cohorts of sixth graders were followed longitudinally for 3 years postintervention. At the 3-year follow-up, the mentoring group had significantly less substance use compared to the control group.<sup>34</sup>

Aseltine et al.<sup>35</sup> reported on an RCT to prevent illicit drug use among high-risk students from sixth-grade classrooms in 3 schools ( $n = 358$ ). The purpose of the study was to assess the effects of adult mentoring on marijuana use. A control group received a knowledge-based curriculum and a community service project. Posttest at 6 months postintervention revealed a significant reduction in marijuana use only for the mentoring group.<sup>35</sup> Both of these studies illustrate the use of the traditional approach, with older adults mentoring youth. The mentored youth reported less drug use on follow-up measures when compared to controls who received an evidenced-based drug prevention curriculum.

More recently, the use of peers as mentors of adolescents is emerging as an effective and developmentally preferable approach. Adolescents tend to view peers as more credible and having a better understanding of the concerns of young people. A descriptive study by Dubois and Silverthorn<sup>36</sup> serves to illustrate the positive effects of mentoring on young people. A nationally representative sample was used to study naturally occurring mentoring relationships on health behaviors of adolescents. Using data from Wave III of the National Longitudinal Study of Adolescent Health, respondents who reported a naturally occurring mentoring relationship were more likely to report reduced problem behavior (gang membership, hurting others in physical fights, risk taking) and more positive health practices. For example, physical activity levels and birth control use were significantly higher among adolescents with mentors. This study illustrates the powerful effects that mentors can have on the development of health practices among adolescents. In this study, the mentors were naturally occurring; peer mentoring can also be a formally structured aspect of the intervention.

Interventions targeting adolescent populations have demonstrated the effective use of formally structured mentoring to promote a range of health behaviors. The following review provides an overview of this research. Campbell et al.<sup>37</sup> reported on an RCT to evaluate a structured peer mentoring approach to smoking prevention. The peer mentors received 2 days of training focused on health effects of smoking, communication skills (verbal and nonverbal communication, listening skills, expressing ideas, team building, negotiation, empathy, and sensitivity to others), and personal development (confidence, assertiveness, decision making, personal values, and problem solving). All students aged 12 to 13 from 59 schools in England and Wales ( $n = 5562$  and control  $n = 5481$ )

received a 10-week ASSIST peer mentoring program that supported smoking abstinence. The control group received a fact-based smoking education program that covered the health consequences of smoking. The peer-mentored groups had significantly less smoking measured by saliva samples at 1-year follow-up.<sup>37</sup>

Rosenblum et al.<sup>38</sup> reported on a RCT to evaluate the effects of a peer mentoring program on illicit drug use. Subjects were youth with an HIV/AIDS-positive parent(s) and were recruited from agencies that serve HIV-positive individuals ( $n = 157$ ). Peer mentoring (teen-based) was combined with educational programming and recreational activities. A wait-list group served as controls. Posttest was 1-year follow-up to the yearlong intervention. The dependent variables were tobacco, alcohol, and other substances in the past year (self-report). The program was community based and only 55% of assigned youth attended mentoring sessions. But for those who did attend the mentoring sessions, a significantly lower rate of drug use was found, compared to the controls.<sup>38</sup> The number of peer mentoring sessions attended was correlated with a reduction in substance use ( $r = -0.35$ ), indicating the importance of dose effects.<sup>38</sup>

Wyman et al.<sup>39</sup> reported on a mentoring-based approach targeting adolescent suicide prevention. Eighteen high schools, 6 metropolitan and 12 rural, were randomly assigned to immediate intervention or the wait-list control. Data were collected at baseline and 4 months after program implementation on 453 peer mentors in all schools and to 2675 students selected as representative of the 12 rural schools. Trained mentors were 4 times more likely to refer a suicidal teen to an adult when compared to untrained adolescents.<sup>39</sup> Trained mentors also reported increased perceptions of adult support and acceptability of seeking help for suicide risk.<sup>39</sup>

The literature also reports on mentoring interventions targeting college student's health practices. Project GRAD<sup>40</sup> was designed to promote maintenance of physical activity among college senior students as they prepare for graduation and transition to adult roles. In this RCT, students received a one-semester class and lab experience designed to promote free-living physical activity. Peer mentors delivered the labs leading group discussions and provided individualized guidance on behavior change methods. A systematic evaluation of the program showed significant effects on women's total physical activity during leisure, flexibility exercises, and strengthening exercises.<sup>40</sup> In contrast, the course had no significant effects on men's physical activity rates.<sup>40</sup>

Fromme and Corbin<sup>41</sup> evaluated a targeted alcohol prevention program among voluntary and mandated college students using an RCT design. Subjects were assigned to either peer mentor, adult professional counseling, or control conditions. Behavioral skills such as planning ahead, monitoring one's drinks, and setting limits on consumption

were taught as strategies to reduce binge drinking. At the 6-month follow-up, both the peer-mentored and adult professional-led groups showed decreases in binge drinking and driving after drinking relative to control participants.<sup>41</sup> Changes in heavy drinking varied, with a trend toward larger decreases among voluntary participants high in readiness to change and a comparable though nonsignificant reduction for males in the mandated sample.<sup>41</sup>

## DISCUSSION

The literature supports the effectiveness of peer mentoring as an effective approach to promoting health behaviors. Peer mentoring has been effective for both adult and adolescent populations. It has also been useful for promoting health behavior change among hard-to-reach and disadvantaged populations. Clearly, this review suggests that peer mentoring is a promising approach warranting further exploration.

Mentoring provides youth with important ingredients for successful behavioral change: supportive relationships and exposure to a variety of activities, people, and social networks to support the behavioral change.<sup>2</sup> Mentoring relationships have positively influenced behavior change and health outcomes while promoting positive connections to parents and family, including physical activity,<sup>7,8</sup> academic achievement,<sup>42</sup> and substance use/abuse among youth.<sup>42</sup> Often mentoring programs utilize an older adult working with a younger child. Adolescent peer mentoring to address health practices is growing and yielding promising results.<sup>43</sup> Employing trained high school-aged peer mentors as agents of change for other teens addresses the unique needs of teens. Many adolescents lack active exposure to role models of healthy lifestyle behaviors. Weekly contact with role models can provide social support and build self-efficacy to engage in healthy lifestyle patterns.

Social cognitive theory suggests that peers strongly influence each other because people are more likely to imitate the behavior of individuals they see as similar to themselves.<sup>44</sup> Human behavior is the product of the interplay between personal factors and behavioral influences, specifically the influence from role models.<sup>44</sup> Age, appearance, and similar life circumstances are all part of evaluating a potential role model. A role model is also seen as successful but at the same time an attainable, realistic figure for self-comparison. Peers define behavioral norms by example. This reasoning implies that the health behavior of peers may have a significant impact on the health practices of adolescents. Peer mentoring is a planned approach to harnessing the powerful social influence of peers to promote health behaviors. Indeed, peer mentoring approaches have shown promise in a variety of health

education settings targeting a number of different health behaviors.

The peer mentoring approach builds and strengthens social networks. Social networks are links between people that provide social support.<sup>9,45</sup> Social networking provides emotional, informational, and appraisal support that creates a sense of psychological safety (between the mentor and mentee), resulting in higher motivation to change behavior. Learning, self-efficacy, and behavior change are facilitated when people have a sense of psychological safety, the perception that attempts to change behavior can occur without fear or embarrassment.<sup>46</sup> For adolescents, advantages include enhanced learning and behavioral change support resulting from the perceived social support (emotional, informational, and appraisal) and psychological safety promoted by peer-to-peer mentoring. Generally, adolescents like informal sharing of information within friendship networks. This is particularly important when the young person is facing a new challenge or novel situation.

## TRANSLATION TO HEALTH EDUCATION PRACTICE

Several recommendations for the use of peer mentoring emerge from the literature. First, to ensure the best possible outcomes, effective peer mentoring relationships are launched through appropriate pair matching.<sup>47</sup> In addition to matching teenagers based on gender, recruitment of teens interested in cultivating their own health-supportive behaviors and working with others as a role model is essential. Second, to enable a quality role model, teens wanting to serve as peer mentors should be recommended by school officials such as teachers, advisors, or counselors. With a successful match and a quality role model, the presence of a peer mentor in the life of a teenager supports healthy growth and serves as a buffer against many risks faced by today's disadvantaged youth.<sup>10</sup>

Third, ongoing structured training and regular debriefing sessions prepare the peer mentors for program delivery and the challenges of being an effective mentor. Furthermore, ongoing supervision and monitoring of mentoring interactions is crucial for a successful mentoring experience and assuring program fidelity. Unlike adult mentors, peer mentors must be provided more training, supervision, and support to promote effective interactions with their mentees. For this reason, mentors and mentees generally meet within a larger peer group context in which planned dyadic and group activities can be coordinated, conducted, and supervised by staff.

Regular supervision, monitoring, and debriefing sessions enhance mentoring quality by providing guidance and support to the mentors. Planned debriefing sessions also provide opportunities continuous training of mentors.

Supervision can help evaluate the impact of the program on the mentors as well.

Peer mentoring is best implemented in schools wanting to improve the overall well-being of students, not necessarily targeting at-risk students. Peer mentors are traditionally high school upperclassmen. Mentors do not need to have any special skills or talents, although certain personality traits contribute to becoming an effective peer mentor. For example, recruiting teens with an interest in cultivating their own healthy lifestyle behaviors may be an important attribute for delivering a health curriculum to others. As noted by Karcher,<sup>1</sup> other characteristics of effective peer mentors include the following (*a*) demonstrates integrity and stability; (*b*) is supportive, flexible, other-centered, and tolerant; (*c*) is skilled in developing friendships with others; (*d*) is interested in empowering others; (*e*) has good communication and listening skills; and (*f*) enjoys having fun with others in both structured and unstructured activities. Potential mentors should make a commitment to be available for the scheduled sessions and be committed for the duration of the program. How you recruit mentors will depend on the size and scope of your program. Ideally, for initial offerings, 10-15 mentors and 20-30 mentees are desired. Identifying prospective mentors can usually be handled by teachers, counselors, coaches, and school staff. Other means of finding prospective mentors may be through information at student or parent orientation events, sporting or extracurricular events, brochures, posters, school announcements, and teacher promotion of the mentoring program in classes.

Unlike adult mentoring programs, where prospective mentors go through rigorous screening procedures, peer mentoring employs an application process, interviews, parent permission, and personal references.<sup>1</sup> Applications and interviews should focus on why the teen would like to become a mentor and be involved with the planned program. Furthermore, assessing any needed transportation, availability, commitment to the time and duration of the program, activities engaged in, and experience with volunteer or leadership roles is important. References from prospective mentors generally include at least one teacher, coach, or advisor as well as parent permission to participate.

Orientation and training of chosen mentors includes a focus on how to be an effective mentor and on the delivery of the health curriculum. Mentoring training generally includes (*a*) an overview of the mentoring process; (*b*) skill building for handling unexpected events, building rapport with a mentee, perspective taking, and effective listening; (*c*) ongoing support, debriefing, guidance, and structure for scheduled activities; (*d*) offering positive reinforcement, solution-focused helping, and constructive criticism; and (*e*) planning for program termination. Rules regarding contact with each other outside the program, the use of social media, and confidentiality of participants should be stressed.

Curricular delivery training is program specific but generally includes information about structured activities, supervision, guidance, program fidelity, and handling of methods and/or materials used.

Although flexible in its use, most peer mentoring programs utilize a weekly meeting time schedule. After-school and in-school times are most commonly utilized. To provide needed guidance, support, and supervision, a program coordinator should be readily available during session times. Mentors are generally matched with 1-2 mentees to work with throughout the program. Matching mentors to mentees should be done according to personal interests and other attributes important to the program. Generally, matching to the same gender and personal interests are ideal. To facilitate the needs of mentors, mentees, and program coordinators, most mentor-mentee pairs or triads meet in a congregate area of the school such as the gymnasium or cafeteria at the same time. This setup promotes safety and security for mentors, mentees, and program staff as well as allows for individual and larger group activities. Finally, time should be built-in for debriefing sessions between the program coordinator and mentors at the conclusion of each session. This allows for the assessment of program fidelity, problem-solving or curricular and mentee concerns, and the building of support between the mentors.

Finally, in recognition of the time and effort dedicated to the program, incentives for the mentors should be considered. Possible incentives may be the earning of community service credit, letters of recommendation, certificates of appreciation, or other special recognition. Community stakeholders may offer incentives such as gift cards, financial incentives, or other monetary prizes if possible. Parent-teacher organizations and district administration may offer other incentives for mentors. Involving school newspapers, parent newsletters, and local media are other avenues for recognition and program exposure to the local community.

School settings can be important environments to promote healthy lifestyle behaviors. To improve health outcomes of adolescents, school health professionals and teachers may incorporate health programming into a mentoring approach, thus moving beyond health education taught exclusively by teachers. Adaption of health curriculum and health programming to meet the learning needs and facilitate agents of change of adolescents challenges schools to look beyond teachers to deliver curriculum.

Peer mentoring is a sustainable and flexible approach. Younger teens who are mentored by older teens may matriculate into a peer mentor role. The matriculation process ensures that important health-related concerns can be addressed in the school environment, over the course of time. At the same time, teens develop life skills in health coaching, decision making, and leadership. Serving as role

models to others, mentors may improve their own lifestyle patterns in their efforts to lead by example. The power of role modeling leads to a double-edged approach, impacting the health behaviors of both mentees and mentors. Finally, although many mentoring programs are school based, peer mentoring's flexibility allows for programming to be offered after school, during summer months to enhance sustainability of behavioral change, or in other community settings such as recreational centers, libraries, or religious organizations.

Peer mentoring programs hold promise as an effective method to deliver health curricula to enhance sustainable healthy lifestyle patterns. School and health professionals working in school settings should consider teens as a powerful force to promote health behaviors. With sufficient training and supervision, teens can provide vital support and psychological safety to other adolescents attempting to learn new skills or change behaviors. Because of this, teens as mentors may have an advantage over adult mentors. Teens can be an essential partner with schools, teachers, nurses, and other health professionals when planning programs to impact health behaviors. The use of peer mentors to deliver any behavioral self-regulation curriculum is an innovative approach to overcoming the unique challenges of underserved and economically distressed populations. Peer mentors can enhance the school health curriculum by targeting healthy lifestyle behaviors. Mentors can deliver personalized, tailored support and a social network to promote sustainability of healthy lifestyle behaviors.

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