Communication strategies for dietary change in a worksite peer educator intervention

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Abstract

At the heart of peer health education programs is the assumption that tapping social networks increases adoption of behavior change, yet the communication strategies used by peer educators have not been previously documented to assess the use of social networks in promotion of health messages. Our program in public worksites trained peer health educators to utilize their social networks along with individual persuasive strategies to promote the 5 a Day for Better Health message (i.e., eat five or more servings of fruits and vegetables every day). Communication strategies utilized by the peer health educators were tracked via monthly focus groups over a 9 month intervention in 40 social networks of labor and trades employees. Audiorecords were transcribed and content analyzed to identify 10 communication strategies used by peer educators. Strategies were rated as enacted in an individual or a group (collective) context. Peer health educators were more likely to implement ‘creating context’ and ‘role modeling’ as group context change strategies, and ‘encouragement’ and ‘responding to employee needs’ as individual change strategies. Strategies used most frequently by males were ‘mock competition’, ‘giving materials’ and ‘encouragement’, while females used ‘creating context’ and ‘keeping 5 a Day visible’ most frequently. Hispanic peer health educators were more likely to use individual change strategies than their non-Hispanic counterparts. Documentation of the creative approaches utilized by lay educators among their peers can inform public health professionals on (1) how to better train outreach workers within various cultural, gender and social contexts, and (2) how to maximize social network effects.

Introduction

This study examined communication strategies used by peer health educators to promote the 5 a Day for Better Health message (i.e., eat five or more servings of fruits and vegetables each day) in a worksite nutrition education program. The peer health education approach is theoretically founded upon the notion that an individual group member may be an effective advocate for change due to several psychological and social processes (Markides et al., 1986; Giblin, 1989; Halpern and Larner, 1990; Marshall and McKeon, 1996). This theoretical basis led us to explore how those processes operated in our peer health educators’ communication strategies with their co-workers. The larger study in which this sub-study of communication strategies is embedded tested the effectiveness of a peer health educator program in
promoting the 5 a Day message. The larger program will be described briefly as background information and then the peer health educator communication strategies study will be presented.

The ‘5 a Day: Healthier Eating for the Overlooked Worker’ program

The 5 a Day for Better Health program is a public and private partnership between the National Cancer Institute and the produce industry that aims to encourage Americans to eat five or more servings of fruits and vegetables each day. The ‘5 a Day: Healthier Eating for the Overlooked Worker’ project evaluated a peer health educator program to promote the 5 a Day message to labor and trades employees in 10 public worksites in two large metropolitan areas in Arizona, Phoenix and Tucson. The evaluation design was a pair-matched, randomized pre-test–post-test control group design. Forty-one pairs of social networks identified at baseline were randomized to receive a traditional worksite wellness program that focused on the 5 a Day for Better Health message delivered through formal worksite channels (control) or the 5 a Day peer education intervention plus the traditional program. Informal social networks of employees were roughly bounded by workgroup or crews and limited to non-supervisory personnel (i.e. peers).

Although the lay health worker concept has been used extensively to promote innovative health messages in community settings, this approach is not typically applied to the worksite setting [for an exception to this, see Israel et al. (Israel et al., 1989)]. Other aspects of our program differed substantially from typical peer or lay health educator programs (Witmer et al., 1995). Because of the worksite setting, the network of contacts was not defined by neighborhood relationships or proximity, but rather was determined by the requirements of daily work interaction. Health peers had a more captive ‘audience’ in these workgroups with regular face-to-face contact than the usual lay health educator. Previous programs have worked primarily with women; our target population was 75% male. A high percentage of our target group was Hispanic (40%). Thus, we were concerned with the cultural and social consonance of the promotional approach used (i.e. methods that would fit the norms of lower-income, Hispanic and Anglo, predominantly male employees) (Rhodes, 1990; de la Cancela, 1992; Castro et al., 1996).

The peer education intervention began with the identification and recruitment of peer health educators using systematic network measurement techniques (Rogers and Kincaid, 1981; Burt, 1985; Ennett and Bauman, 1993; Suarez et al., 1994). Questions about the number, strength and type of interactions (e.g. eating lunch together, respecting opinions on health matters) were asked to help identify work group members who were most centrally and socially connected in their respective cliques (i.e. closely tied social networks) of labor and trade co-workers. These socially central employees were approached with information on the 5 a Day program, the time commitment and the amount of money they would earn ($1800 over 11 months of training and implementation) if they agreed to work as a peer health educator. Selected volunteers were trained in eight 2-h, weekly sessions and then began promoting the 5 a Day message among their co-workers.

Training for peer health educators addressed the health benefits of eating fruits and vegetables, health peers’ role as a resource to their co-workers, and barriers/cultural norms concerning diet. Specific persuasive communication strategies that could be used in individual conversations or group settings were taught (see Table I). Communication skills training included several role-plays intended to teach peers how to (1) use each persuasive communication strategy, (2) bring up the topic of 5 a Day without creating co-worker resistance, and (3) utilize a variety of individual and group contexts to initiate discussion of 5 a Day (e.g. driving to the worksite in crews, taking lunch or snack breaks, hearing a health-related news item on the radio at the start of the shift).

Over the course of 9 months, peer educators promoted the 5 a Day message using their own informal methods of communicating and modeling
Communication strategies for dietary change

Table I. Persuasive appeals taught in peer training

<table>
<thead>
<tr>
<th>Persuasive appeal</th>
<th>Description</th>
<th>Example</th>
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<tbody>
<tr>
<td>Fear appeals</td>
<td>Stating that bad things will happen to them if they do or don’t...</td>
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<tr>
<td></td>
<td>If you don’t use seatbelts, you could be thrown through the windshield.</td>
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<tr>
<td></td>
<td>If you keep eating that high-fat diet, you’re more likely to develop heart disease.</td>
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<tr>
<td>Dear appeals</td>
<td>Reminders of the good things will happen to if...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Keep your family safe with seatbelts.</td>
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<tr>
<td></td>
<td>Eat fruits and vegetables for a slimmer, more energetic you.</td>
<td></td>
</tr>
<tr>
<td>Peer appeals</td>
<td>Stating that others (family, friends) will be pleased (or will benefit) if...</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Your kids will learn good habits from you if you start eating right.</td>
<td></td>
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<tr>
<td></td>
<td>We all want you to feel better.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Seems like no one in this workgroup smokes anymore, except you!</td>
<td></td>
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<tr>
<td>Foot-in-the-door</td>
<td>Suggesting a small change, followed by additional incremental changes</td>
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<tr>
<td></td>
<td>See if you can switch from hamburger and fries to a garden salad (with low-fat dressing) and bread sticks just once a week.</td>
<td></td>
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<tr>
<td></td>
<td>If you can do it once a week, maybe you could do it 3 times: Monday, Wednesday and Friday.</td>
<td></td>
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<tr>
<td>Questions</td>
<td>Asking leading questions.</td>
<td></td>
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<tr>
<td></td>
<td>What are your favorite vegetables? How could you eat them more often?</td>
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Sociobehavioral foundations of peer educator programs

Lay or peer health educator programs in the US have been modeled after ‘naturally occurring adaptive practices that developed in indigenous communities in Mexico, Central America and South America’ [Castro et al., 1995, p. 127]. These international programs took advantage of the oral tradition of the communities wherein health standards were shared informally and adopted from sources that community members trusted. American applications of peer health education have been quite successful in minority, low-income communities, ostensibly because many of the same conditions and norms for adopting behaviors exist within them (Castro et al., 1995). The advantages of lay health workers include the lower costs associated with expanding the outreach of agencies through community volunteers, and, most importantly, the indigenous characteristics of the peer health educators who generally share common

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demographic and cultural traits, and who already have access to an existing social network (Giblin, 1989; Witmer et al., 1995).

**Interpersonal and group context theories relevant to peer educator programs**

Theories predicting success of such programs have focused on communication within social groups. For example, Diffusion of Innovations theory (DIF) suggests that behavior will change incrementally as members in social networks discuss the issue, disseminate information, and adopt the behaviors. According to DIF, interpersonal influence through social networks is typically activated by ‘early adopters’, individuals who practice a new behavior before the majority of the population (Rogers, 1995). Early adopters also are usually well-integrated into cliques (i.e. closely knit social networks), serve as opinion leaders for many of their friends, act as bridging ties to information sources and organizations outside of the clique (Baker et al., 1992; Freimuth, 1995), and are more familiar with the cultural context in which current health practices are embedded (Witmer et al., 1996). Consequently, they model the desired changes, act as sources of information on the issue for other members and tailor messages to the context more effectively than change agents from outside the social networks (Tierman, 1988; Giblin, 1989).

Social Comparison Theory (SCT) further elucidates the social psychological and interpersonal influence processes in social networks. According to SCT (Baranowski et al., 1997), opinion leaders are influential because people’s attitudes and behaviors are formed, maintained and changed through interaction in interpersonal social networks (Erickson, 1988; Heaney and Israel, 1997). SCT portrays individuals as constant comparators of themselves with similar others and members of social networks often are the focus of those comparisons (Festinger, 1954; Suls and Miller, 1977). Individual uncertainty occurs if individuals develop attitudes or behaviors that deviate from those of their comparators. As a result, people routinely conform to those with whom they regularly interact (‘ego networks’) as a way to reassure themselves that they have contextually appropriate attitudes and behaviors (Halpern and Larner, 1990).

Sharing common knowledge, values and behaviors establishes a sense of group identity which, in turn, creates more pressure to conform (Cheney, 1991; Kunda, 1992; Larkey and Morrill, 1995). Thus, diffusion of innovations and social comparisons create powerful collective identities and operate to shape and change behavior in intact reference groups with regular interaction such as extended families, neighborhood circles and workgroups. The collective identities created by communication in social networks provide the opportunity for strategic change by bringing innovations into a clique from outside channels such as media campaigns or direct training of opinion leaders. For this reason, peer education programs utilize insiders from social groups to inform and initiate new, healthful behaviors.

Activating interpersonal social networks to effect behavior change may be especially important with individuals of lower socio-economic status (SES) because they seem to rely more on influence from peers than from higher status, unfamiliar, professional change agents (Witmer et al., 1995; Marshall and McKeon, 1996). Interpersonal influence in social networks is common among Hispanics whose extended networks of kin and friends are intact and quite extensive (Delgado et al., 1995; Castro et al., 1996), and provide extremely strong relational bases for attitudes and behaviors (Markides et al., 1986). For example, the norm in Hispanic culture of viewing family as one’s primary cohesive, emotional support system to be relied upon more than external sources of support explains lack of trust in unknown doctors and the tendency to lean on familial advice or community healers (e.g. curanderos) over health professionals (Molina and Aguirre-Molina, 1994; Castro et al., 1995; Delgado et al., 1995). For this reason, lay outreach is considered a culturally aligned method for reaching Hispanics with health messages.

**Theory and practice in training lay outreach workers**

Although the psychological and social influences of lay education programs are fairly complex,
training provided to peer educators and the methods for tracking their work may not address the full range of possibilities in making such programs successful. Training generally focuses on increasing knowledge in the substantive area of expected behavior change (Marshall and McKeon, 1996). It is assumed that by training indigenous health promoters, the effects of social comparison and diffusion of innovations will occur as a natural result of group interaction. Two elements may be necessary to create these effects, however. One is the outreach to communities that engenders group interaction (Israel et al., 1994) and the second is the effort of the peer health educator to create a sense of group identity. These may be occurring in many programs, but the day-to-day communication strategies used for promoting the messages and the contexts (e.g. group versus one-on-one situations) have not been previously recorded and published for a close look at how peer health educators actually accomplish their tasks (Melcher and Reichert, 1994). To close this gap, peer educators in our 5 a Day for Better Health program were trained to utilize a variety of strategies and then their work in the field was tracked to allow us to evaluate what actually occurred.

Although the training (previously described) provided a range of skills and contexts, the indigenous characteristics of our peer health educators were valued and encouraged in the training program. We were interested particularly in finding out, during the course of the intervention, how the peer educators applied their natural styles to the promotion of the 5 a Day message with co-workers, giving rise to our first research question:

**RQ1** What persuasive strategies do peer health educators use?

Once strategies were identified, we were interested in examining the contexts in which these strategies were used, either in individual encounters, which may indicate a preference for using simple persuasion and social comparison processes, or in group encounters that could provoke the broader group identity and conformity processes. This comparison is expressed in the second research question:

**RQ2** Which strategies are used more in one-on-one contexts and which are used predominately in group situations?

Most peer health educator programs utilize female outreach workers. The role of the health outreach worker may be thought of as one which fits more closely with typical communication styles and norms of women (i.e. nurturer, teacher, sensitive to relational issues) (Maltz and Borker, 1982; Yelsma and Brown, 1985; Philips, 1987). Given the large proportion of males working as peer health educators and the predominance of males in the workgroups, it became important to examine differences in strategy use between men and women peers. Further, we explored the possibility that men would adapt the teacher/nurturer model to a style consistent with the competitive mode of communicating more typical of males communicating with other males (Phillips, 1986). In general, we inquired:

**RQ3** Which strategies more likely will be used by males and which by females?

Lastly, because of the expectations that those who promote the 5 a Day message may lean on their cultural styles of communicating, we chose to examine differences among peer educators with different ethnic backgrounds. Fifty-six percent of the 41 peer educators were Hispanic, 5% were Native-American and 2.5% African-American. Because of the small number of peers from other non-Hispanic minority groups, those non-Hispanic ethnic minority peer health educators (i.e. Native-American and African-American) were excluded from analysis of ethnic differences. Hispanic culture has been shown to be more collective (i.e. more likely to consider the group concerns in patterns of thinking and interacting) than Euro-American culture (Triandis, 1995). We expected that the group orientation may be expressed in addressing the group as a whole, or in using group oriented appeals. Therefore, we ask the following:

**RQ4** Will Hispanic peer health educators be more likely to use collective (group) contexts than individual (one-on-one) contexts to promote a health message?
Method

Interviewing procedures

Persuasive communication strategies of peer health educators were tracked by group interviews conducted at monthly inservice meetings over the 9 months of intervention. Project staff posed a preset series of questions designed to probe for detailed accounts of interaction with co-workers (see Appendix). Each month, five to eight different meetings were held across the sites with three to nine health peers in attendance at each meeting for a total of 43 sessions (with 30–60 min of each session devoted to discussing intervention strategies). The resulting audiotapes were transcribed and content analyzed to identify peer educators’ communication strategies.

Content analysis

Two trained research assistants (both Caucasian females) accomplished most of the transcribing and content analysis following open and axial coding procedures outlined by Strauss and Corbin (Strauss and Corbin, 1990) and Krippendorf (Krippendorf, 1980). The assistants transcribed statements made by peer educators that described or implied efforts to promote the 5 a Day message or that suggested peers’ ideas about how one should promote it. During the transcription phase assistants did not attempt to classify the strategies, but were asked to take notes on the broad categories they saw emerging from peer educator comments and to write examples of each (e.g. open coding). Unitization was accomplished by separating statements into parts that represented apparently different strategies or ideas, even if units were included in the same turn at talk; each statement containing two or more strategies within a turn at talk was written in its entirety twice (or more) with a different idea/strategy underlined in each copy indicating which strategy was to be coded. In this way, the context in which the smaller units occurred was preserved to assist in understanding the content during categorization.

The two research assistants discussed with the investigator the categories emerging from this open coding process. Using the list of persuasive appeals from the peer training program as a starting set of categories and taking into account additional categories suggested by the data (many of which paralleled the trained strategies), they agreed upon a set of nine categories to begin testing as a coding scheme. Five of these categories were derived from the original training program. The ‘fear’ and ‘dear’ appeals were combined into a ‘cost–benefit’ strategy that addressed both the benefits and the negative consequences of changing or not changing dietary practices. The ‘foot-in-the-door’, ‘questioning’ and ‘peer appeals’ were retained and an additional category was added, ‘creating context’ which described bringing props into the workplace (e.g. fruits to share, news articles) to stimulate conversation about the 5 a Day message. Although not categorized and taught as a specific persuasive appeal, the concept of creating a context to generate discussion of 5 a Day had been used in the examples for role-play practices in the training program. Four additional categories were created to accommodate the strategies peers described in inservices, including ‘BS’ing’ (a strategy directly named by one of the peers and describing teasing or sarcastic joking), ‘reinforcement’, ‘role modeling’ and ‘giving materials.’

The two research assistants independently coded (i.e. axial coding) transcripts from three full sessions using this preliminary coding scheme, after which they met again with the investigator and an Hispanic staff member to examine differences in coding choices. Two categories were enlarged into five. ‘BS’ing’ was split into ‘teasing’ and ‘mock competition’ to differentiate general joking/teasing behavior from attempts to create a playful game of competition. ‘Reinforcement’ was separated into ‘encouragement’, ‘keeping 5 a Day visible’ and ‘responding to needs’ to clarify the difference between direct praise, gentle reminders by peer educators, and responses to others’ questions or individual concerns. ‘Peer appeals’ was dropped because there were no instances that clearly fit into this category. Lastly, ‘questioning’ was subsumed under the ‘keeping 5 a Day visible’ category as another form of subtly bringing up the topic without
### Table II. Health peer strategies used to promote 5 a Day

<table>
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<tr>
<th>Strategy</th>
<th>$F$</th>
<th>Description</th>
<th>Examples</th>
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</table>
| Teasing           | 56  | Teasing comments made to or about an individual in the presence of others to call attention to a behavior or outcome. The teasing may be tongue-in-cheek praise or a good-natured admonishment for not eating the right things. | 'That’s going to be you!' (pointing to photo, inferring that without diet changes one will become overweight)  
 'I see what you’ve got!' (in lunch or at snack)  
 'You eat that, you die.' (referring to poor choices of food in lunch box) |
| 2 Mock competition| 6   | Suggesting that one’s behavior is better than the behavior of another person. Comments imply rivalry and the expectation that the other person must engage in a similar activity and perhaps excel at it. Often used publicly so that others would witness the action and join the contest. | 'I've got my 5 a Day. Do you?'  
 'We are having a diet contest.' |
| Role modeling     | 27  | Public enactment of desired dietary behaviors that are blatant enough to be noticed. The peer educator ostensibly performs actions for self but with the intent of demonstrating and leading others to the same behavior. | 'I bring an apple or banana, whatever it takes—they notice.'  
 'I try to set a good example by eating good things and they see me staying young and in good shape.'  
 Reading (silently) 5 a Day material in public. |
| Giving material   | 62  | The peer educator hands out materials given to them during inservice and training sessions such as booklets, newsletters and gifts. They may simply hand the items or can say 'read this' or 'this may be helpful to you'. | 'I took my time and gave them (binders) away.'  
 'Come with me to my locker I have a brochure on fruits and vegetables.'  
 'I talk to them when I give them the booklets.' |
| Creating context  | 70  | In the absence of questions or obvious needs peer educators create a situation or create context to promote the 5 a Day message. This strategy uses a third entity such as magazines, media information or presentations to begin discussion. Another facet of this strategy occurs when the peer brings in fruits or vegetables to share or organizes pot-lucks. | Commenting on television story seen the evening before.  
 Offering fruit from basket on desk.  
 Showing a video during a staff meeting. |
| Foot-in-the-door  | 25  | Peer asking a co-worker to make a small commitment towards eating more fruits and vegetables and less fat, implying that they could ‘hook’ co-workers initially and later encourage more of the same behavior. | The peer offers information and asks co-worker to make small change 'Only eat the burger once a week instead of all the time' or 'Buy fruit juice instead of soda pop.' |
| Encouragement     | 16  | Reinforcing/praising changed or potential behavior no matter how small. Includes 'cheerleading' and direct praise. Cheerleading is defined as encouragement and positive remarks not necessarily linked to a specific behavior. Praise is in direct response to specific positive behaviors. | 'I try to encourage them to eat right.'  
 'If I saw someone doing something unusual, I would try to say that is a good idea and encourage it.'  
 'If someone brings in a fruit in their lunch, I tell them, 'good girl' or 'good boy'.' |
8 Responding to needs/communicating availability

<table>
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<tr>
<th>Strategy</th>
<th>Description</th>
<th>Examples</th>
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| 8 Responding to needs/communicating availability | Peer educators tell co-workers they are available if they have any questions or need information about a specific concern. Also, co-worker questions directed towards the peer educator are included in this category. | ‘If they need information, they know how to get a hold of me.’
                                                                 | ‘I tell them if they have any questions, they can ask.’
                                                                 | ‘Guys will tell me they feel tired all the time and I’ll tell them eat more vegetables, bananas, fruit, oranges, apples, instead of hamburgers and pop.’ |
| 9 Cost–benefit (originally ‘fear’ and ‘dear’) | Peer educators appeal to co-workers to change their behavior by telling them the benefits or harm of their actions. | ‘The fruit helps you more to prevent cancer.’
                                                                 | ‘Benefits like fitness and being healthy.’ |
| 10 Keeping 5 a Day visible (‘questions’ subsumed) | Peer uses simple one-liners to remind co-workers of 5 a Day message. Often indirect, the strategy uses any excuse to remind co-workers of 5 a Day. | How are you doing with 5 a Day today? |

$F = \text{number of observations.}$

a lot of force or argumentation, for a final set of 10 categories.

## Results

Descriptions and examples of the 10 influence strategies identified from the peer educator interviews are presented in Table II (to answer RQ$_1$). Using this final set of 10 categories, the 43 transcribed sessions containing 541 statements were coded independently by the two research assistants resulting in an intercoder reliability of 0.91 [Cohen’s κ (Cohen, 1960)]; the unit of analysis was the statement (i.e. description of strategy). Additionally, all statements were coded to indicate whether the strategy was used in a one-on-one context, a group situation or if the context was not able to be determined from the statement. Intercoder agreement on this dimension was 100%; coders accomplished this last task as a team.

Chi-square tests were computed in order to test the association between collective/individual contexts, ethnicity, and gender and peer influence strategy statements. Marascuilo’s (Marascuilo, 1966) large-sample method of multiple comparisons using proportions was employed to test specific contrasts whenever a $\chi^2$ test was statistically significant.

### Collective versus individual strategies (RQ$_2$)

Significant differences were demonstrated among strategies used in individual and collective contexts ($\chi^2 = 108.091$, d.f. = 18; $P = 0.0000$). Contrasts for three levels of context (individual, unknown and group) on each strategy were performed following Marascuilo and tested with Bonferroni adjustment (Miller, 1981) to protect against α inflation (i.e. $P < 0.0017$). Peer health educators were more likely to implement ‘role modeling’ ($P = 0.0004$) and ‘creating context’ ($P < 0.0001$) as collective change strategies, whereas ‘encouragement’ ($P = 0.0009$) and ‘responding to employee needs’ ($P = 0.0001$) were more likely to be used as individual change strategies.

### Male/female difference in strategy use (RQ$_3$)

Strategy use also differed by gender ($\chi^2 = 30.099$, d.f. = 9; $P = 0.0004$). Specific differences in male and female use of strategies were tested using Bonferroni adjustment for 10 contrasts at the 0.005 level. ‘Creating context’ ($P = 0.0002$) is more
likely used by females than males, while ‘encouragement’ \( (P = 0.0001) \) is more likely used by males than females.

Given the small number of significant contrasts compared to differences noted by investigators in peer educator inservices, it was decided to perform a more sensitive test. Small numbers in one of the categories (‘mock competition’) and large differences in the number of observations among some of the categories may have attenuated findings. Therefore, specific contrasts were examined for likelihood of use of strategies by males and for use of strategies by females with Bonferroni-adjusted \( \alpha \) level of 0.00056 (90 contrasts; 0.05/90). ‘Mock competition’, ‘giving materials’ and ‘encouragement’ were used by males significantly more than ‘creating context’ and ‘keeping 5 a Day visible’. Females used ‘creating context’ and ‘keeping 5 a Day visible’ significantly more than ‘mock competition’, ‘giving materials’ and ‘encouragement’ \( (P < 0.0001 \text{ for all contrasts}) \).

**Ethnic differences in individual versus collective contexts**

RQ4 inquired whether or not Hispanic peer health educators would use collective strategies more than Caucasian peers. This also was tested with a \( \chi^2 \) analysis. The overall analysis was significant \( (\chi^2 = 8.060, \text{ d.f.} = 2; P = 0.018) \). Specific contrasts between the two levels of racioethnicity (Hispanic and non-Hispanic Caucasian) for the three levels of context (individual, unknown and group contexts) produced three contrasts tested at Bonferroni-adjusted 0.0167 level (i.e. 0.05/3). Hispanic peer health educators were more likely to use individual change strategies than their non-Hispanic counterparts \( (P = 0.0128) \).

**Discussion**

This study examined communication strategies used by peer health educators to promote the 5 a Day for Better Health message (i.e. eat five or more servings of fruits and vegetables each day) in a worksite nutrition education program. Theoretical explanations that both interpersonal and social group processes operate to influence participants’ beliefs and behaviors led us to explore whether persuasion strategies were used in collective or individual contexts and to examine ethnic and sex differences in strategy use. Results demonstrated that a wide variety of strategies were used by peers, including ‘teasing’, ‘mock competition’, ‘role modeling’, ‘giving material’, ‘creating context’, ‘foot-in-the-door’, ‘encouragement’, ‘responding to needs’, ‘cost–benefit’ and ‘keeping 5 a Day visible’, that some strategies were used more as collective and some as individual strategies, and that some aspects of communication differed by gender and ethnicity.

**Group context and individual strategy use**

Peer health educators were more likely to implement ‘creating context’ and ‘role modeling’ as collective change strategies, and ‘encouragement’ and ‘responding to employee needs’ were more likely to be used as individual change strategies. These findings make sense; ‘creating context’ was described as bringing outside information or props to the workgroup in order to create an opportunity to talk about 5 a Day and ‘role modeling’ demonstrated the desired behavior to co-workers. Peers often used informational, visual or edible props and personal object lessons to promote the message in the group setting, thereby maximizing the strategies by exposing several co-workers to the message at once.

Both strategies, ‘creating context’ and ‘role modeling’, may have evoked social comparison processes. Festinger (Festinger, 1954) introduced the concept of social comparison and emphasized the construct of the comparable other (i.e. individual level comparisons) in the formation of attitudes and behavior. This comparable other is chosen on the basis of social similarity and identification, characteristics that can be recognized in individual encounters, but which are made more salient by group membership (Cheney, 1992). Thus, social comparison processes may have been enhanced by the group settings in which these strategies were used (i.e. workgroups comprised of individuals with close relationships with similar others).
On the other hand, simple one-to-one comments, such as those described in ‘encouragement’ (i.e. reinforcing or praising an individual’s behavior) and ‘responding to needs’ (i.e. personal responses to individual’s needs or questions), are most likely to be used on a more personal basis. These strategies seem to describe personal, more intimate types of conversations and probably complement the use of group contexts for sharing the message.

A strategy that was expected to be included in the initial list of strategies and used more in the collective, group context was ‘peer appeals.’ This persuasive strategy taught in training was meant to encourage social comparison processes (e.g. do it because everyone else is), but was not well represented in the descriptions of peer activity. Peer educators mentioned this strategy (and the other peer appeal type that does not imply social comparison processes, ‘do it for your grandchildren’) so seldom that the category was subsumed under ‘cost–benefits.’ Explicit comparisons, then, were not used extensively but were replaced by the more subtle forms of eliciting social comparison by bringing up the topic or role modeling the behavior in the group setting.

**Gender of peer health educators**

Several unexpected influence strategies emerged, unlike the typical teacher/nurturer model more commonly noted in all-female community health promotion efforts (Eng and Young, 1992; Meister et al., 1992). In particular, through the training and inservice sessions, several of the male peer educators described a strategy of teasing, joking or ‘BS’ing’ to get the 5 a Day message across. This style of communicating may have evolved because several of the male peers stated that they felt the teacher/nurturer approach (i.e. ‘I care about you and so I want you to learn about a healthier way of eating’) would be seen as too ‘corny’ and that they expected they would be laughed at if they tried this approach. They could, however, say many of the same things that would be considered teaching or caring as long as they could make a joke out of it. Thus, it is no surprise that one of the strategies used most by males was ‘mock competition’. Joking about competition fits the descriptions of male peers’ efforts to fit their male cultural norms in labor and trade workgroups. This sort of indigenous message adjustment is expected according to diffusion of innovations theory (Rogers, 1995), and the detection of such tailored messages (or message strategies) improves our understanding of how this adaptation is made in the specific context of male-dominated labor and trade groups.

‘Teasing’, however, was not used differentially by men (as might have been expected). We observed that the women picked up on this idea from the men in inservices and began to employ the strategy. That this strategy may have evolved as an adjustment to the labor and trade work context is evident from some of the dialogues reported in the inservices. For example, a male peer said ‘I make a comment to one guy when he brings an apple in his lunch...and the guy says, “my wife put it in there so I have to eat it”’. The peer begins with a simple act of encouragement then, were not used extensively but were replaced by the more subtle forms of eliciting social comparison by bringing up the topic or role modeling the behavior in the group setting.

Perhaps the women felt more comfortable than men in bringing in outside information or props, much as a teacher would for an object lesson. Further, by using a neutral source (such as a news article or a bowl of fruit), the pressure was taken off the peer to be the authority or the salesperson. Rather, peers could refer to the prop and avoid the teaching or caring as long as they could make a joke out of it. Thus, it is no surprise that one of the strategies used most by males was ‘mock competition’. Joking about competition fits the descriptions of male peers’ efforts to fit their male cultural norms in labor and trade workgroups. This sort of indigenous message adjustment is expected according to diffusion of innovations theory (Rogers, 1995), and the detection of such tailored messages (or message strategies) improves our understanding of how this adaptation is made in the specific context of male-dominated labor and trade groups.

The other two strategies used more than other strategies by males, ‘giving materials’ and ‘encouragement’, are both subtle ways to present 5 a Day information; giving materials allowed peers to present authoritative information without having to declare that they themselves were the authority. Examples of encouragement generally were unelaborated, brief comments of praise or suggestions. Women, on the other hand, used ‘creating context’ and ‘keeping 5 a Day visible’ more than other strategies. Creating context required forethought and planning, and generally produced a lot of exposure for 5 a Day in the group context. Perhaps the women felt more comfortable than men in bringing in outside information or props, much as a teacher would for an object lesson. Further, by using a neutral source (such as a news article or a bowl of fruit), the pressure was taken off the peer to be the authority or the salesperson. Rather, peers could refer to the prop and avoid the fear that the group would reject them personally or refuse to follow their prescriptions. Relational
sensitivity is more characteristic of women’s communication (Maltz and Borker, 1982; Wood, 1986), and fits this pattern of sharing and teaching without creating too much pressure on co-workers (Yelsma and Brown, 1985; Womack, 1987).

‘Keeping the 5 a Day message visible’ was also used more by women than other strategies. This strategy was an assertive form of bringing up the topic on a frequent basis (though unobtrusive and unelaborated), without any contextual provocation, in contrast to the ‘encouragement’ role which usually responded to something one did or other contextual cues. This difference in strategy use may indicate a higher level of comfort for women to take on a teaching role but without creating social pressure for conformity.

**Racioethnic differences**

We found unexpectedly that Hispanic peers educators tended to communicate the 5 a Day message in individual contexts more than non-minority peers. Given that the use of lay outreach programs has been largely focused on minority populations (i.e. populations with less opportunity to receive health information through educational channels, but with more likelihood of responding to peers within their social network), this finding may guide the development of future programs with these audiences. Hispanic peer educators may not have felt as comfortable engaging the group in their persuasive efforts. Many of the groups were racioethnically mixed and past experiences of not being heard or included in group decisions or interactions (Larkey, 1996) may have prevented them from taking as much of a risk. Not knowing whether the various approaches were related to effectiveness of outreach, we can only suggest that implementers of such programs should consider including both the individual and group opportunities for sharing health information, and examples used for training should include the creation of group contexts, culling of group identity, and group-level communication and influence strategies. In this way, social influence processes may be maximized and further work can be done to tease out the effects of individual and group strategies.

It is possible that the many personalities of our peers allowed for a range of strategies that may not have emerged from voluntary programs that attempt to recruit ‘outgoing’ people to promote a health message. Our peers were recruited on the basis of their communication linkages to co-workers and those linkages do not necessarily reflect personality traits usually intuitively sought for such programs. Thus, the range of strategies include direct persuasion, such as cost–benefit and foot-in-the-door (both tell-oriented strategies), as well as several creative approaches utilizing the communication norms of the group, tempering possible fears of rejection and responding sensitively to relationship concerns of group members.

**Conclusions**

There is yet much to be learned about ‘best’ approaches to lay outreach worker program design, training, tracking and support structures. Most programs are grounded on the theoretical argument that peers effect social influence processes in promoting their messages but do not necessarily evaluate how such processes operate in actuality. We found that a variety of approaches are used by peers in the field, including individual-style contacts and group-oriented contacts. The use of collective strategies alongside the individual contacts raises a new question about the effectiveness of each approach. Further studies should directly evaluate which of the two approaches (or combination of the various strategies) provide the most effective means for persuasion with different populations. There may be additional dimensions to the social network approach that have yet been untapped. For example, groups in which peer educators encourage working toward common goals and developing a group identity may be more likely to change behavior radically than groups that are haphazardly sharing information and encouraging each other individually. Another possibility is that we can evaluate the effects of such interventions in terms of how individuals become empowered to take charge of their health and perhaps extend their learning into new arenas.
(Fabiano, 1994; Israel et al., 1998; Wallerstein and Bernstein, 1988). Given the current information about the potential of collective strategies, the structure of new programs should continue to emphasize the collective contexts and opportunities for sharing health information, and should specifically track and test their use within different types of groups (i.e. race/ethnically or gender homogenous and heterogenous groups).

This study provides a first glimpse of what is actually occurring in lay outreach programs and begins to inform us about the variety of ways that social influence may occur. We feel that the stories told by our peers and the specific examples given of their work helped us understand more about how they do their jobs, and how we might train peers more effectively and appropriately in the future.

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References


Communication strategies for dietary change


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Appendix A: Monthly probing questions to assess on-going peer intervention

GENERAL
How did it go this month?
(probe, if necessary):
What has worked well for you?
What problems have you run into, if any?
Have you had any surprises in your job as a peer this month?
How did it go this month?
What issues have you been able to discuss? For example:
What have you been doing?
Are your co-workers asking you questions? Are they interested in

BREADTH
Are co-workers asking you questions? Are they interested in
what you’re doing?
Are you getting a chance to talk to all or most of the workgroup
members on your list? Why or why not?
(probe, if necessary):
If you are, what has made it work for you?
Are co-workers asking you questions? Are they interested in
what you’re doing?
Are you getting a chance to talk to all or most of the workgroup
members on your list? Why or why not?
(probe, if necessary):
If you are, what has made it work for you?
Are you getting a chance to talk to all or most of the workgroup
members on your list? Why or why not?
(probe, if necessary):
If you are, what has made it work for you?
Planning and preparation
What are co-workers most concerned about?

STRATEGIES
Are you finding that some of the strategies work better than others? Which? Why/why not? Are you using some more than others?
Has anyone come up with any original ways to approach or influence your co-workers that we didn’t talk about in training? Describe.
How much is your workgroup getting into 5 a Day as a group?

thing? How does that look? Has your group named itself or its 5 a Day efforts (like, ‘the broccoli brigade’)?
Or do you and your co-workers see this as more of a one-on-one thing? How does that look?

NEED FOR TRAINING ON NEW TOPICS
Are your co-workers asking questions you can’t answer or that you don’t have an appropriate pamphlet to refer them to?
What topics might be important for future in-service sessions? Have you lost any members from your list of names? (Use a running log for each peer, asking about lost members each quarter.)