

# Peer Support for the Hardly Reached: A Systematic Review

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**Background.** Health disparities are aggravated when prevention and care initiatives fail to reach those they are intended to help. Groups can be classified as hardly reached according to a variety of circumstances that fall into 3 domains: individual (e.g., psychological factors), demographic (e.g., socioeconomic status), and cultural–environmental (e.g., social network). Several reports have indicated that peer support is an effective means of reaching hardly reached individuals. However, no review has explored peer support effectiveness in relation to the circumstances associated with being hardly reached or across diverse health problems.

**Objectives.** To conduct a systematic review assessing the reach and effectiveness of peer support among hardly reached individuals, as well as peer support strategies used.

**Search methods.** Three systematic searches conducted in PubMed identified studies that evaluated peer support programs among hardly reached individuals. In aggregate, the searches covered articles published from 2000 to 2015.

**Selection criteria.** Eligible interventions provided ongoing support for complex health behaviors, including prioritization of hardly reached populations, assistance in applying behavior change plans, and social–emotional support directed toward disease management or quality of life. Studies were excluded if they addressed temporally isolated behaviors, were limited to protocol group classes, included peer support as the dependent variable, did not include statistical tests of significance, or incorporated comparison conditions that provided appreciable social support.

**Data collection and analysis.** We abstracted data regarding the primary health topic, categorizations of hardly reached groups, program reach, outcomes, and strategies employed. We conducted

a 2-sample *t* test to determine whether reported strategies were related to reach.

**Results.** Forty-seven studies met our inclusion criteria, and these studies represented each of the 3 domains of circumstances assessed (individual, demographic, and cultural–environmental). Interventions addressed 8 health areas, most commonly maternal and child health (25.5%), diabetes (17.0%), and other chronic diseases (14.9%). Thirty-six studies (76.6%) assessed program reach, which ranged from 24% to 79% of the study population. Forty-four studies (94%) reported significant changes favoring peer support. Eleven strategies emerged for engaging and retaining hardly reached individuals. Among them, programs that reported a strategy of trust and respect had higher participant retention (82.8%) than did programs not reporting such a strategy (48.1%;  $P = .003$ ). In 5 of the 6 studies examining moderators of the effects of peer support, peer support benefits were greater among individuals characterized by disadvantage (e.g., low health literacy).

**Conclusions.** Peer support is a broad and robust strategy for reaching groups that health services too often fail to engage. The wide range of audiences and health concerns among which peer support is successful suggests that a basis for its success may be its flexible response to different contexts, including the intended audience, health problems, and setting.

**Public health implications.** The general benefits of peer support and findings suggesting that it may be more effective among those at heightened disadvantage indicate that peer support should be considered in programs intended to reach and benefit those too often hardly reached. Because engendering trust and respect was significantly associated with participant retention, programs should emphasize this strategy. (*Am J Public Health.* 2016;106:e1–e8. doi:10.2105/AJPH.2016.303180)

## PLAIN-LANGUAGE SUMMARY

Health programs sometimes fail to reach those they intend to help, which contributes to health disparities. We reviewed research on the effectiveness of peer support among individuals too often hardly reached, identified via individual (e.g., psychological distress), demographic (e.g., ethnic minority), and environmental (e.g., rural) characteristics. Peer support refers to emotional, social, and practical assistance provided by non-professionals to encourage behaviors such as

healthy diets or medication adherence. Although previous research has noted the benefits of peer support among those hardly reached, no review has explored peer support across the circumstances associated with being hardly reached.

Of the 47 studies reviewed here, 94% reported significant changes favoring peer support. Furthermore, peer support was effective across varied health topics (e.g., maternal and child health, diabetes, HIV/AIDS) and circumstances related to being hardly

reached. Interventions engaged 55.1% of those who agreed to participate and retained 78.6% of participants. Retention was greater among interventions emphasizing trust and respect. Peer support was more effective among those with disadvantages such as low health literacy. Peer support is a broad and robust approach to reaching and benefiting those too often hardly reached. The breadth of circumstances in which it is effective suggests that flexibility is a contributor to its success.

Most health promotion initiatives have difficulty recruiting groups characterized by various disadvantages frequently associated with being hardly reached.<sup>1</sup> Moreover, attrition rates are higher in these groups,<sup>2</sup> and behavior change is more difficult to achieve.<sup>3,4</sup> The failure of prevention and treatment programs to reach those they are intended to help contributes to avoidable yet substantial costs, not only for hardly reached populations but also for the health care system.<sup>5,6</sup> Strategies to reduce these costs and engage hardly reached groups are a public health priority.

The Patient Protection and Affordable Care Act aims to improve the health of “vulnerable and underserved” populations.<sup>7</sup> One initiative includes navigators educating and enrolling hardly reached populations into insurance systems,<sup>8</sup> coupled with Medicaid expansion in several states.<sup>9</sup> As a result of widening disparities, the World Health Organization has also committed to addressing health inequities, including engaging hardly reached groups before manifestation of clinical diagnoses.<sup>10</sup> In this systematic review, we evaluate how peer support may effectively engage and improve the health of those who are hardly reached, and we characterize strategies for doing so.

Before identifying how peer support may be effective among hardly reached groups, it is important to clarify the terms *peer support* and *hardly reached*. Peer support refers to emotional, social, and practical assistance provided by nonprofessionals to help people sustain health behaviors. Peer support is provided by individuals with a variety of titles, including community health worker, health coach, lay health advisor, and others. It may also be defined substantively as involving 4 key functions: assistance in daily management of health behaviors, social and emotional support, linkages to clinical care and community resources, and ongoing support, extended over time.<sup>11–13</sup> Numerous peer support features may lead to the approach being effective with groups hardly reached, such as more time for peers (relative to medical providers) to explain health services<sup>14</sup> and similarities between supporters and hardly reached individuals that foster mutual respect.<sup>11</sup>

A previous systematic review conducted by Sokol et al. sought to understand how

hardly reached individuals are characterized in health research.<sup>15</sup> The review showed that various circumstances are associated with the likelihood of being hardly reached by conventional health promotion.<sup>15</sup> Sokol et al. developed a categorization schema grounded in the peer-reviewed literature to organize such circumstances into meaningful groupings. According to this schema, circumstances are divided into 3 domains: individual (e.g., psychological–cognitive factors, occupation, sexual orientation, transiency, substance use, history of incarceration, disability), demographic (e.g., age, gender, socioeconomic status), and cultural–environmental (e.g., social network, ethnicity, geography, discrimination).<sup>15</sup> In this review, we use these 3 domains to organize our results.

The term *hardly reached* is preferred over *hard to reach* because the latter suggests that fundamental qualities of the group and its members, rather than the interventions trying to reach them, are responsible for members not being reached by health services.<sup>16</sup> As evidenced by the categorizations just described, those who are hardly reached are broad, heterogeneous groupings of individuals. Qualitative studies focusing on the programs that serve such groups and the individuals facing these circumstances have identified the following fundamental strategies for engaging individuals who have been hardly reached: trust and respect, flexibility, community partnerships, and user involvement and empowerment.<sup>17–19</sup>

Here we assess the use of these 4 conceptual strategies for engaging hardly reached groups. Whereas these strategies were determined a priori for our review, additional operational strategies emerged through evaluations of the included studies. Because they detail definitive approaches for engaging individuals, such as frequent contact, operational strategies are more specific than conceptual strategies.

Several studies have reported benefits of peer support for reaching and engaging those who are hardly reached.<sup>11–14,20,21</sup> No review

to our knowledge, however, has systematically analyzed peer support across the range of circumstances that lead to being hardly reached. Accordingly, we undertook a review of the literature to assess the reach and effectiveness of peer support among those who are hardly reached, along with peer support strategies (conceptual and operational) used.

## METHODS

In conducting our systematic review, we used PRISMA (preferred reporting items for systematic reviews and meta-analyses) guidelines adapted to our study aims (Table A, available as a supplement to the online version of this article at <http://www.ajph.org>).<sup>22</sup> We developed our review protocol a priori. The first author (R. S.) abstracted data retrieved from the sources described in the next section. Abstraction included collecting information on operational and conceptual strategies, health topics, hardly reached populations, program reach, and outcomes. The second author (E. F.) verified the abstraction, and disagreements were resolved via discussion and consensus.

## Data Sources

It is difficult to capture data on peer support programs among hardly reached groups in a single systematic search. The first challenge is the variety of individuals who are hardly reached. Also, researchers may not use terms such as hard to reach or hardly reached that are easy to capture with search algorithms. Accordingly, we included studies identified in 3 ways.

*Systematic search of hardly reached populations.* In a previous review, we systematically searched the literature in an effort to understand what circumstances identify individuals as hardly reached.<sup>15</sup> In brief, this review entailed a search in PubMed for articles published in English between 2009 and 2014, with a search strategy including

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“hard to reach,” “hard to locate,” “difficult to engage,” similar terms, and their cognates. From this search, we identified 334 articles addressing hardly reached groups. Three of these articles reported peer support interventions and were included in our review.

**Systematic search of peer support.** Similarly, in an earlier review we conducted a literature search of PubMed for articles that used cognates of peer support and a variety of other titles for individuals who provide peer support (e.g., *promotora*, doula, community health worker; Fisher et al., unpublished data, 2015). This review encompassed the time period January 1, 2000, to July 15, 2011. From this search, 66 articles met our inclusion criteria in terms of reporting on peer support. Of these articles, 39 addressed hardly reached groups and were included in our review.

**Supplemental search.** To account for the different time frames of the 2 searches, we conducted a formal PubMed search using the same syntax to identify peer support studies from July 15, 2011, to January 1, 2015. This search yielded an additional 3 articles. Also, the search team identified 2 additional studies from the reference lists of the included articles.

## Inclusion and Exclusion Criteria

To be considered for our review, studies had to include prioritization of a hardly reached population, ongoing support from a nonprofessional, assistance in applying behavior change plans, and at least 1 of the 2 following components: social and emotional support or encouragement of recommended care. Therefore, studies were excluded if they addressed temporally isolated behaviors (e.g., vaccination) rather than complex behaviors, were limited to protocol classes, were group taught or facilitated, included peer support as the dependent variable, did not include statistical tests of significance, or included comparison conditions that involved substantial social support. Because we employed these criteria, we did not survey all programs including nonprofessionals in interventions targeting hardly reached groups. Rather, we focused on peer support as we have defined it substantively (e.g., assistance in

applying behavior change plans) and as applied to ongoing, complex health behaviors.

## Categorization of Health Topics and Hardly Reached Groups

In accord with the categorization schemas developed in our previous review,<sup>21</sup> we coded the primary health topic for each study as 1 of the following: diabetes mellitus, cardiovascular disease, HIV/AIDS, asthma, mental health, substance use, maternal and child health, or other chronic illness. Using the circumstances of hardly reached groups that also emerged from that review,<sup>15</sup> we categorized the way in which each study identified its population with respect to the 3 major domains described earlier (individual, demographic, cultural–environmental). Studies could be categorized into multiple domains.

## Categorization of Reach and Outcomes

We assessed program reach according to the RE-AIM framework.<sup>23</sup> We used a pair of questions to make this assessment: (1) What percentage of the priority population is reached? and (2) Are those who participate representative of the priority population? Studies assessed the first component of reach in 1 of 3 different ways: the percentage of the priority population that agreed to participate, the percentage of those who agreed to enroll who actually participated in the program, and the percentage of the priority population that actually participated in the program. We categorized studies as to whether they provided this information and then summarized success according to each measure.

To assess risk of bias, we coded studies according to their design (randomized, quasi-experimental, or within-group) and outcome measures (objective measures, standardized measures, or nonstandardized measures). Outcomes were categorized as significant between-group differences, as significant within-group differences, or as nonsignificant.

## Conceptual Strategies to Engage the Hardly Reached

Several previous studies have identified conceptual strategies to reach, engage, and

assist the hardly reached, including trust and respect, flexibility, user involvement and empowerment (engaging participants to be active members of their health team), and community partnerships (collaborating with other organizations to improve care).<sup>17–19</sup>

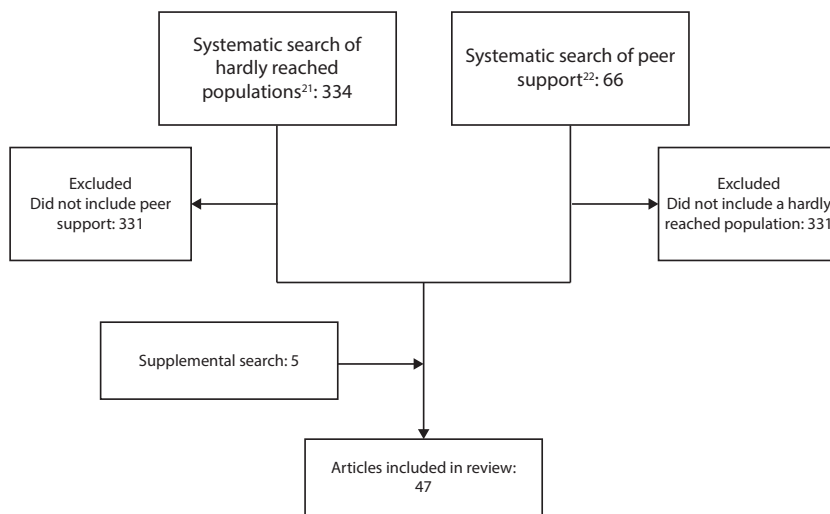
We cataloged the strategy studies reported within each of these conceptual categories (e.g., connecting patients to other resources in the community to develop community partnerships). The first author characterized the interventions' content according to conceptual strategies, and the second author verified these characterizations.

We conducted a 2-sample *t* test to determine whether there were differences in reach (according to all 3 measures) between studies that reported and did not report strategies within each conceptual strategy category. We conducted a correlation analysis to assess whether the number of conceptual strategies reported was related to program reach. The high percentage of investigations reporting positive outcomes precluded examining relationships between these strategies and study outcomes.

## Operational Strategies to Engage the Hardly Reached

In addition to evaluating the conceptual strategies that studies employed to engage hardly reached individuals, we characterized intervention content to identify other operational strategies (strategies involving definitive actions such as frequent contact). The first author reviewed the methods used in all of the included studies and iteratively characterized the interventions' content in terms of different operational strategies until saturation was reached, and again the second author verified these characterizations. Disagreements were resolved via discussion and consensus.

We conducted a correlation analysis to determine whether the number of reported operational strategies was related to each of the 3 measures of reach. Similar to the analyses for conceptual strategies, the high percentage of studies reporting positive outcomes precluded examining relationships between operational strategies and outcomes. We used Stata version 14 (StataCorp LP, College Station, TX) in conducting all of our statistical analyses.



**FIGURE 1—PRISMA Flow Diagram: Systematic Review of Peer Support Interventions Among Individuals Who Are Hardly Reached**

## RESULTS

In total, we identified 47 studies for inclusion in this review (Figure 1). The complete evidence table (Table B) is available as a supplement to the online version of this article at <http://www.ajph.org>.

### Distribution of Health Topics and Hardly Reached Populations

The range of health topics included in the reviewed studies was broad, with 8 distinct primary health conditions. Among these conditions, studies most frequently focused on maternal and child health (25.5% of studies; Table 1).

The range of categories was also broad, with the highest proportion of investigations reporting socioeconomic status as a means of identifying hardly reached groups (34.0%; Table 1). The studies reviewed employed all 3 of the domains described earlier to characterize their priority populations: 42.6% of studies incorporated features of the individual domain, 40.4% incorporated features of the demographic domain, and 57.5% incorporated features of the environmental-cultural domain (Table 1).

### Reach of Peer Support

Overall, 34% of studies ( $n = 16$ ) reported reach according to the percentage of the

priority population that agreed to participate or the percentage that actually took part in the program (or both). Average reach was modest for these 2 measures: 55.1% and 24.5%, respectively (Table 2). Studies most commonly reported the percentage of enrolled individuals who agreed to participate in the program and then actually did so (70.2% of studies; Table 2). The average rate of retention among all programs was 78.6% (95% confidence interval = 70.5%, 86.6%). In total, 76.6% of studies reported at least 1 of these assessments of reach. Only 21.3% of studies reported the extent to which the participants as a group were representative of the priority population.

### Effectiveness of Peer Support

As shown in Table 3, 32 of the 38 studies with between-group (randomized or quasi-experimental) designs (84%) reported significant between-group differences attributable to peer support. Another 3 studies reported significant within-group differences, as did all 9 of the investigations reporting only within-group analyses. Three studies, all among the 38 involving between-group designs, did not report either significant within-group or significant between-group differences.<sup>24–26</sup> Thus, 44 of the 47 studies overall (94%) reported significant differences or changes favoring peer support.

All 12 of the studies employing objective outcome measures reported significant differences favoring peer support, as did 21 of the 23 studies involving standardized outcome measures (91%). Of the 12 studies employing nonstandardized measures, 11 (92%) reported significant differences favoring peer support.

### Conceptual Strategies to Engage the Hardly Reached

As illustrated in Table 4, use of each of the 4 conceptual strategies was common.<sup>27–33</sup> For example, the community partnerships category, the category least often reported, was included in 51% of the studies. In total, 72.3% of programs reported employing at least 3 of the 4 identified strategy categories. All of the programs used at least 1 strategy category.

Overall, 89.4% of the studies reported use of strategies within the trust and respect category (Table 4). Studies employed 2 major trust and respect strategies: peer supporters having experience with the pertinent health topic and similarity between supporters and participants in areas other than the program's health focus. Often, studies reported both strategies. For example, in 1 study focusing on improving diabetes care among Hispanics, the intervention was delivered by 3 bilingual Hispanic peer supporters who either had diabetes or had experienced it through a family member or friend.<sup>31</sup> In another study, involving promotion of positive breastfeeding outcomes, supporters were local community women who had experienced breastfeeding success and had cultural, demographic, and socioeconomic characteristics similar to those of the participants.<sup>27</sup>

In total, 70.2% of programs reported use of strategies within the flexibility category (Table 4). Service flexibility includes listening to feedback, offering flexible and convenient hours and locations, and providing participants with the services they desire.<sup>17</sup> Some programs employed a variety of educational materials and differing modes of contact, such as in-person or telephone contact, to serve the needs and schedules of participants.<sup>32</sup> Others selected service locations convenient for the participant, including the participant's home, a clinic, or another accessible community location.<sup>31,33–37</sup> Interventions were also adapted to suit participants' needs and

**TABLE 1—Characteristics of Studies of Peer Support Interventions Among Individuals Who Are Hardly Reached: Health Topics Addressed and Basis for Identifying Groups**

Characteristic	Studies, %
<b>Health topic addressed</b>	
Maternal and child health	25.5
Diabetes	17.0
Other chronic diseases	14.9
HIV/AIDS	12.7
Mental health	10.6
Asthma	8.5
Cardiovascular disease	6.4
Substance use	4.3
<b>Domain used to characterize group as hardly reached</b>	
<b>Demographic</b>	
Socioeconomic status	40.4
Age	34.0
Gender	6.4
<b>Cultural/environmental</b>	
Ethnicity	29.8
Infrastructure complexities	19.2
Geography	17.0
Social network	4.3
Discrimination	2.1
<b>Individual</b>	
Psychological/cognitive characteristics	42.6
Substance use	31.9
Transiency	6.4
Sexual orientation	4.3
	2.1

readiness to change.<sup>38,39</sup> In some cases, participants had issues that took precedence over the program's primary concern. In such instances, programs adapted to provide relevant resources.<sup>28,29</sup> Other studies assigned peers to participants according to location and availability.<sup>40–42</sup> Finally, many programs reported use of alternate contact modes

when the primary mode was unfeasible for the participant.<sup>33,35–37</sup>

The user involvement and empowerment strategy (including participants in program development and empowering them to make changes) was employed in 70.2% of programs (Table 4). In 1 program, peer supporters were nominated by fellow patients.<sup>30</sup> In another, each individual served as both a participant and a peer supporter.<sup>34</sup> In many programs, participants and peers worked collaboratively to set and achieve goals.<sup>31,35–38</sup>

Reflecting the central role of collaboration in the work of community health workers,<sup>13</sup> 51.1% of peer support programs reported acknowledging the confines of their services and partnering with other organizations to overcome limitations (Table 4). Programs partnered with other community organizations to recruit peer supporters with desirable characteristics as well as potential participants.<sup>42,43</sup> Several peer supporters served as liaisons to community resources and the health care system and made referrals to appropriate providers when needed.<sup>30–33</sup>

To evaluate the relationship between use of conceptual strategies and reach, we divided the group of 47 studies into those that did and did not report use of each strategy. We then conducted a *t* test to compare these groups with respect to each of the 3 measures of reach, yielding 12 (4 strategies × 3 measures) tests. As a means of adjusting for multiple comparisons, an analysis-wide significance level of .05 was divided by 12 to yield a single-test significance level of .004.

Only 1 test was significant, that between the trust and respect category and reach as measured by the percentage of participants who agreed to take part and were actually retained in the program. Programs that reported strategies within the trust and respect category had higher participant retention (82.8%) than programs that did not report

strategies within that category (48.1; 2-sample *t*-test  $P = .003$ ). All other relationships between measures of reach and use of strategies within a particular category were non-significant ( $P$ s = .246 to .883). Correlation analyses examining the relationships between total number of conceptual strategies reported and measures of reach were not significant ( $P$ s > .05), probably as a result of the restricted range of strategies used.

### Operational Strategies to Engage the Hardly Reached

A review of study methods identified 7 distinct operational strategies. Most programs reported frequent contact ( $n = 26$ ), with peer supporters regularly engaging with participants (contacting or seeing them at a minimum of every 2 weeks during the intervention period). In programs that reported assertive contact ( $n = 22$ ), contact was initiated and maintained by peer supporters rather than supporters providing 1 initial contact and waiting for participants to ask for additional assistance. Some programs also reportedly monitored contacts ( $n = 10$ ); in these cases, supporters were expected to document interactions with participants (e.g., to monitor participant progress and improve recordkeeping).

A few studies reported support for supporters ( $n = 6$ ), which often included debriefing sessions and opportunities for supporters to share any challenges they faced. Tailored content was also reported ( $n = 8$ ), with peer supporters recognizing participants' needs and tailoring intervention content accordingly. Some programs ( $n = 6$ ) reported that supporters provided implicit support to participants simply by "just being there" (e.g., meeting for coffee to talk). Other programs reported ready availability of peer supporters ( $n = 4$ ), meaning that participants were able to contact supporters when needed.

**TABLE 2—Reach of the Peer Support Programs Reviewed, Measured According to 3 Different Assessments**

Reach Assessment Method	Studies Addressing Reach, % (No.)	Average Reach, % (95% CI)
Percentage of priority population that agreed to participate	31.9 (15)	55.1 (39.2, 71.0)
Percentage of enrolled population that actually participated	70.2 (33)	78.6 (70.5, 86.6)
Percentage of priority population that actually participated	27.7 (13)	24.5 (10.8, 38.3)

Note. CI = confidence interval.

**TABLE 3—Peer Support Intervention Outcomes Among Hardly Reached Groups, by Study Design**

Outcome	Controlled Design, No.	Noncontrolled Design, No.
Significant between-group difference	32	0
Significant within-group difference	3	9
Nonsignificant difference	3	0

Although we recognize that some investigations may not have described all of the operational strategies used, 35 of 44 studies reporting significant findings favoring peer support (79.5%) employed at least 1 of these 7 strategies. By contrast, only 1 of the 3 studies reporting nonsignificant results included any of the 7 intervention components. The relationships between use of the different operational strategies and reach were not significant ( $P_s > .05$ ).

### Moderators of Peer Support

Six studies examined factors that may have moderated the effects of peer support. Five of these studies showed that advantages of peer support relative to control conditions are greater among individuals disadvantaged in terms of low levels of self-management,<sup>44</sup> medication adherence,<sup>44</sup> health literacy,<sup>45</sup> social support,<sup>45</sup> self-efficacy,<sup>46</sup> education,<sup>47</sup> and socioeconomic status,<sup>48</sup> as well as rural area of residence.<sup>48</sup> To illustrate, in an analysis of a dyadic peer support intervention for diabetes management, benefits of peer

support versus usual care for blood glucose control were greater among those with low levels of health literacy.<sup>45</sup>

### DISCUSSION

To ensure progress in public health, it is important to reach the hardly reached. However, previous research and reviews on how to reach these groups largely have entailed qualitative recommendations. Our systematic review provides clear, quantitative evidence that peer support is a broad and robust strategy for reaching groups that health services too often fail to engage. The majority of studies reviewed, 93.6%, reported significant improvements in health outcomes attributable to peer support. Peer support was broadly effective across 8 different health topics and 12 different circumstances related to hardly reached groups. The success of peer support across a broad range of audiences and health concerns suggests that such support may benefit hardly reached groups because it involves a flexible response to different

contexts, including the intended audience, health problems, and setting.<sup>11</sup>

If any population health benefit is to be realized, groups must first be reached and then engaged. Previous reviews of hardly reached populations have identified several barriers that hinder effective recruitment and retention of hardly reached individuals.<sup>2,49</sup> However, our review showed that both recruitment and retention were appreciable. In studies providing relevant data, more than 50% of the priority populations were recruited into programs, and more than 70% were retained through the programs' durations. Peer support programs may successfully address the recruitment and retention challenges that beset population health promotion.

Not only does peer support appear to be effective among those hardly reached, but evidence indicates that it may be more effective among these groups. In 5 studies that examined moderators, characteristics of hardly reached groups moderated the relationship between peer support and outcomes in a manner indicating greater benefit of peer support among those who were more disadvantaged (e.g., those with lower health literacy). Moderators represented all 3 domains of characteristics identifying hardly reached groups: individual (low levels of self-management,<sup>44</sup> medication adherence,<sup>44</sup> health literacy,<sup>45</sup> self-efficacy,<sup>46</sup> and education<sup>47</sup>), demographic (low socioeconomic status<sup>48</sup>), and cultural–environmental

**TABLE 4—Categories of Strategies Used to Engage Hardly Reached Groups**

Strategy Category	Explanation	Example	Studies Using Strategy, % (No.)
Trust and respect	Being nonjudgmental and being able to relate to and empower people	Supporters were local community women who had experienced breastfeeding success and had cultural, demographic, and socioeconomic characteristics similar to those of participants <sup>27</sup>	89.4 (42)
Flexibility	Offering flexible services that respond to the needs of the participants, including conducting outreach, listening to feedback, offering flexible opening hours, and providing participants the services they want	When participants had financial and housing issues that took precedence over the program's primary concern of asthma control, supporters provided resources to address these issues <sup>28,29</sup>	70.2 (33)
User involvement	Involving participants directly in their care	Fellow patients nominated their peers to become peer supporters <sup>30</sup>	70.2 (33)
Community partnerships	Working with partners to disseminate information, ensure that potential participants are aware of the program, and acknowledge/overcome service limitations via referrals	Peer supporters served as liaisons for participants to community resources and the health care system and made referrals to appropriate providers when needed <sup>30–33</sup>	51.1 (24)

(low social support<sup>45</sup> and rural area of residence<sup>48</sup>). The finding that peer support may be more effective in engaging hardy reached groups is of great significance with respect to efforts to “bend the curve” to reduce disparities in health, improve prevention and population health, and reduce avoidable, expensive care.

We found that the studies reviewed, in addition to including the 4 conceptual strategies for engaging hardy reached groups identified in previous research, included a number of operational strategies as well. Although our analyses do not provide direct evidence of the importance of these strategies (with the exception of trust and respect), the majority of peer support programs included in our review were effective. All of the studies we reviewed employed some combination of these strategies, suggesting their importance in developing programs targeting hardy reached groups. Future research might focus on process evaluation to determine to what extent and in what circumstances these strategies are used and how they are helpful. Among the conceptual and operational strategies examined, it is striking that the only 1 exhibiting a significant effect, emphasizing trust and respect, was associated with greater participant retention. This finding is consistent with much of the literature on peer support<sup>13</sup> as well as research on reducing disparities among ethnic minorities alienated from health care.<sup>50–52</sup>

## Limitations

Previous reviews of peer support have often been narrow in scope and have not focused on groups that are hardy reached.<sup>53,54</sup> We addressed these gaps by systematically reviewing evidence on peer support among those who are hardy reached with reference to a broad range of health topics. However, our review does have limitations. First, publication bias may have affected our results. We reviewed only published literature, and studies with null or negative findings may not have been adequately represented in our search. Second, because of the variety of outcome measures employed in the reviewed studies, we were not able to use meta-analytic techniques but instead evaluated effectiveness according to significant between-group or within-group differences.

## Conclusions

Peer support appears to be a broad and robust means of improving health outcomes among groups too often hardy reached through conventional approaches. The studies we reviewed documented effects across a wide range of health outcomes and circumstances related to being hardy reached. Strategies for reaching and engaging audiences previously identified in the literature were broadly reflected in the studies reviewed. Among them, engendering trust and respect was significantly associated with participant retention. In terms of reducing disparities and broadening the reach of health care and prevention, not only does peer support appear to be effective among those hardy reached, but evidence indicates that it may be more effective among these groups. **AJPH**

## CONTRIBUTORS

R. Sokol led the review process and the writing of the article. E. Fisher developed the research question and supervised the work.

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## HUMAN PARTICIPANT PROTECTION

No protocol approval was needed for this study because no human participants were involved.

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