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Thirty Years of Disparities Intervention Research:What are We Doing to Close Racial and Ethnic Gaps in Health Care?

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Abstract

Background—A systematic scan of the disparities intervention literature will allow researchers, providers, and policymakers to understand which interventions are being evaluated to improve minority health and which areas require further research.

Methods—We systematically categorized 391 disparities intervention articles published between 1979 and 2011, covering 11 diseases. We developed a taxonomy of disparities interventions using qualitative theme analysis. We identified the tactic, or what was done to intervene; the strategy, or a group of tactics with common characteristics; and the level, or who was targeted by the effort.

Results—The taxonomy included 44 tactics, nine strategies, and six levels. Delivering education and training was the most common strategy (37%). Within education and training, the most common tactics were education about disease (14%) and self-management (11%), while communication-skills training (3%) and decision-making aids (1%) were less frequent. The strategy of actively engaging the community through tactics such as community health workers and outreach efforts accounted for 6.5% of tactics. Interventions most commonly targeted patients

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(50%) and community members who were not established patients of the intervening organization (32%). Interventions targeting providers (7%), the microsystem (immediate care team) (9%), organizations (3%), and policies (0.1%) were less common.

Conclusions—Disparities researchers have predominantly focused on the patient as the target for change; future research should also investigate how to improve the system that serves minority patients. Areas for further study include interventions that engage the community, educational interventions that address communication barriers, and the impact of policy reform on disparities in care.

Keywords

disparities; quality of care; race; intervention; equity

Over the past 30 years, disparities researchers have shifted focus from documenting racial and ethnic disparities to identifying interventions that close the gap in care.¹ The *Patient Protection and Affordable Care Act* will institutionalize the collection of clinical performance data stratified by race, ethnicity, and language, providing promising opportunities for organizations to identify health disparities in their patient populations.² However, stratified data alone are insufficient to reduce disparities.³ There remains a critical need for evidence-based interventions that improve outcomes for minority patients.⁴

Existing reviews of disparities interventions focus on specific diseases, care settings, or priority populations. Several reviews have developed taxonomies of intervention studies to organize their findings; however, to our knowledge, none focus specifically on efforts to improve minority health.^{5–8} The Agency for Healthcare Research and Quality's *Taxonomy of Quality Improvement*, for example, does not include equity-specific approaches, such as cultural competency training or enhanced interpreter services.⁹ It is important to assess the disparities literature specifically, because generic quality improvement efforts are insufficient to close the gap in care.¹⁰ Even quality improvement initiatives that improve outcomes for all patients can inadvertently widen the difference in outcomes between White and minority patients.¹¹ Equity-specific approaches that are tailored for minority patients show promise for reducing disparities,¹² as do nonclinical services that complement and enhance care delivery for priority populations.¹ Therefore, we developed a taxonomy of disparities interventions in the healthcare setting and used this taxonomy to systematically categorize 391 intervention articles from the peer-reviewed literature.

Our taxonomy organizes the disparities literature so that researchers, providers, funders, and policymakers can easily identify the available evidence and target areas for further study. It breaks down multi-faceted interventions into their essential parts, guiding healthcare organizations to identify the approaches that best fit their context and settings. The tool also helps patients and patient advocates understand the variety of programs available to them. Overall, the disparities taxonomy allows readers to identify studies relevant to their own work and target approaches for reducing disparities in care.

Methods

Data Sources

In 2007 and 2012, Robert Wood Johnson Foundation's (RWJF) *Finding Answers: Disparities Research for Change* program wrote 11 systematic reviews of interventions to improve minority health and/or reduce racial and ethnic disparities in care.^{1,12} The reviews covered diverse diseases and topics representing a variety of issues that arise in disparities reduction efforts. These included cervical cancer, HIV, asthma, prostate cancer, colorectal

cancer, breast cancer, depression, diabetes, and cardiovascular disease, as well as interventions using cultural targeting and incentives to improve care.^{13–23} Articles in the reviews met the following inclusion criteria: 1) original English-language study published in the United States, 2) evaluated an intervention, 3) intervention occurred in, or had a direct linkage to, a healthcare delivery setting (i.e., not solely community-based), and 4) included sub-analysis by race/ethnicity or had a study population composed of ≥50% racial/ethnic minorities. Study quality was assessed using the Downs and Black quality index²⁴ and the Cochrane tool for bias.²⁵ Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were used for the 2012 set of reviews.²⁶ Details about the scope of the interventions, types of studies, and search strategies for the articles are listed in each review.^{13–23} The systematic reviews included 391 intervention articles published between 1979 and 2011, which served as the data sources for the present project.

Developing a Taxonomy of Disparities Interventions and Categorizing the Literature

We used qualitative theme analysis to develop a taxonomy of disparities interventions and categorized the 391 articles accordingly. Qualitative theme analysis is a widely-used methodology for developing taxonomies in health services research.²⁷ The taxonomy consisted of three components: the *tactic*, or what was done to intervene (e.g., communication-skills training), the *strategy*, or a group of tactics sharing common characteristics (e.g., delivering education and training), and the *level*, or who or what was targeted by the effort (e.g., the provider). Initially, two researchers reviewed abstracts and developed a list of tactics capturing common groupings of interventions until theme saturation was reached. All discrepancies were discussed to consensus. The initial list of tactics was revised for face validity by the authorship team and definitions of each tactic were created to facilitate the categorization exercise. We identified common characteristics among tactics and grouped them into larger categories called strategies. The list of intervention levels was drawn from an existing conceptual model in the quality improvement literature.¹⁰

Once the taxonomy was developed, we systematically reviewed the 391 articles and categorized them by tactic, strategy, and level. Additionally, for each study we identified the disease area of interest and the race or ethnicity of study participants.

Data Extraction and Analysis

Each full article was independently reviewed and coded by two of three researchers (NS, LC, JA) who identified the tactics, strategies, and levels in each intervention. All discrepancies were discussed to consensus. A senior researcher (AC) coded a 10% sub-sample to ensure reliability. There was excellent agreement between the initial coding and the senior researcher on race/ethnicity (Kappa = 0.83) and fair to good agreement in coding tactics (Kappa = 0.55) and levels (Kappa = 0.62).²⁸

Codes were not mutually exclusive; each tactic, strategy, or level could apply more than once to a single study. For example, if communication-skills training was delivered to both providers and patients in a single intervention, it was counted twice, in combination with the provider level and patient level, respectively. This method captures instances where a tactic targeted multiple levels or where a single level was targeted using multiple tactics.

We calculated frequencies for the three dimensions (tactics, strategies, and levels) across all studies. We also calculated frequencies for race/ethnicity of the study population and disease. Within each disease, we then tabulated the level of the intervention tactic. Studies that addressed multiple diseases or multiple racial or ethnic groups appeared more than once in counts of studies; therefore, percentage figures may sum to more than 100%.

Results

Taxonomy of Disparities Interventions

The taxonomy of disparities interventions included 44 tactics, nine strategies, and six levels. Tactics are the core component of the taxonomy and define what was done to improve minority health. Examples include adding a patient navigator, church-based care delivery, and take-home test kits (Table 1). Strategies are groups of tactics that share common characteristics. For example, adding a patient navigator and increasing involvement of a pharmacist are two tactics that fall under the strategy, restructuring the care team. Levels are the primary point of impact of the tactic, and include the patient, provider, microsystem (immediate care team), organization, community and policy (Table 2). While all interventions seek to improve outcomes for patients, the level in our taxonomy is the person(s) or entity(ies) immediately and directly affected by the tactic. For example, performance audits for providers are ultimately intended to improve patient care, but it is the provider who is immediately and directly affected. A complete list of definitions for all tactics, strategies, and levels is available at: <http://www.solvingdisparities.org/research/taxonomy/>.

Applying our taxonomy to the 391 disparities articles included in the 11 systematic reviews yielded 2,420 instances of tactic-level combinations. These combinations describe the activities of each study; we summarize the most and least common activities below.

Strategies and Tactics—The most common strategy to improve minority health was delivering education and training (37%) (Table 1). The most common tactic was delivering education about a disease (14%), followed by education in disease self-management (11%). Training in communication-skills (3%) and use of decision-making aids (1%) were less frequent education tactics. The least common strategies were providing financial incentives and enhancing language and literacy services. Only one study in our review used pay-for-performance to improve minority health (< 0.1%) and four offered incentives to reward healthy behavior (0.2%). Tactics related to language such as health literacy screening and enhanced interpreter services accounted for 0.1% and 0.3% of tactics, respectively. Relatively few interventions (6.5%) actively engaged persons in the community through tactics such as community health workers or outreach efforts.

Levels—Levels – the primary target of each tactic – were unevenly distributed (Table 2). Overall, interventions most commonly targeted patients (50%) and community members (32%). Patients were defined as person(s) under the clinical care of the intervening healthcare organization, while community members were recruited to the intervention but were not established patients. Interventions targeting providers (7%), the microsystem (immediate care team) (9%), organizations (3%), and policies (0.1%) were less common. About half of the interventions targeted multiple levels (54%).

Disease and Race/Ethnicity—The most common disease studied was HIV, which accounted for 20% of all articles, while depression was the least common disease studied at 6%. The patient was the most common level targeted to improve outcomes in asthma (89%), diabetes (88%), cardiovascular disease (81%), colorectal cancer (80%), depression (78%), breast cancer (74%), cervical cancer (72%), and HIV (57%). Prostate cancer tactics most often targeted members of the community (57%).

Interventions addressed the following populations: Black (80%), White (41%), Latino (41%), Asian (11%), and American Indian (8%). The “not specified” racial category (29%) included studies that did not report race or ethnicity for a portion of their study population.

Across articles, the patient was the most common level targeted for all racial and ethnic groups.

Discussion

Our categorization of healthcare interventions to reduce disparities revealed that researchers, providers, and policymakers have predominantly focused on the patient as the primary target for change. Going forward, we should expand this lens to explore additional levers in the healthcare system that may improve outcomes for minorities.

Focus on the system, not just the patient

We found that the majority of disparities interventions in the peer-reviewed literature use education to influence the knowledge and behavior of patients. This finding suggests that researchers and providers are focused on changing patients, rather than the system that serves them. While patient education is critical, alone it may be insufficient to address the complex, systemic issues causing disparities in healthcare. More interventions should target the provider, care team, organization, community, or health policy, shifting some of the responsibility to change from patients to the care delivery system.

An example demonstrates why it is so important to target not only patients, but the context within which patients make health decisions. A Latina patient with diabetes may benefit from education in self-management, but behavior change is unlikely if the healthcare organization cannot communicate in her preferred language. An intervention that also enhances interpreter services at the organization-level creates a context in which the patient is more likely to succeed in meeting her self-management goals. The same patient may receive education about healthy eating habits, but live in a neighborhood where fresh fruits and vegetables are unavailable. If the intervention introduces a farmers market in the community, her chances of success are still more likely. While this example may seem obvious, the literature indicates that interventions frequently do not address contextual factors.

It is possible that researchers and providers are focused on patient education because the patient is the ultimate target for whom to improve care and outcomes. In addition, it may be easier and less disruptive to focus on the patient rather than to look internally at one's own shortcomings as providers, care teams, and healthcare organizations. However, these parties are more likely to succeed in reducing disparities if they conduct a thorough assessment of the root causes of disparities, and implement interventions that target multiple levers in the care system.¹²

Examine the process of communication in addition to the content of education

Disparities interventions that use education should incorporate techniques to ensure the information is delivered effectively. Approximately two-thirds of the tactics involving education focused on delivering information about a disease or disease self-management, but only about one-third used techniques to ensure that information was communicated effectively. Examples of education interventions designed to address communication barriers include cultural competency training, decision-making aids, and interactive approaches, such as role-play and peer testimonials. These interventions may be especially important for minority patients, who report race-related barriers to patient-provider communication^{29,30} and a greater distrust of the medical system than their White counterparts.^{31–33}

Several tactics in our taxonomy do not fall under the strategy, “Delivering education and training,” but still have implications for health communication. For example, church-based care delivery may increase uptake of health information because it is shared in a trusted space.^{34,35} Peer educators can foster trust and communication with minority patients because they have intimate knowledge of relevant cultural norms.^{36,37} These approaches affect the process of communication (e.g., where is education delivered and by whom?) and should be examined in addition to the education interventions described above.

Create Linkages between the Care System and the Community

Disparities research increasingly demonstrates the value of working outside clinic walls to improve care for minority patients. Several recent reports from the Department of Health and Human Services (DHHS) recommend that disparities interventions involve both healthcare systems and community-based organizations.^{38,39} Important initiatives, such as the DHHS's Chartered Value Exchanges⁴⁰ and RWJF's Aligning Forces for Quality Program⁴¹ foster partnerships between the healthcare system and community. Despite a growing emphasis on community engagement by disparities experts, only 6.5% of the intervention tactics in our review actively engaged persons in the community and linked them to the care delivery system.

The evidence-base, although sparse, offers some promising lessons for designing interventions that create linkages between the community and the care system. Providers recruited from the community, such as lay health workers, can serve as cultural brokers who understand the needs of both parties.^{42,43} Collaboratives between community groups and healthcare organizations based on principles of mutual respect and community-engaged research can integrate these two worlds.^{44,45} More research is needed to understand the potential for creating linkages between the community and the care system, especially as health policies increasingly emphasize population-based care. One example of this emphasis is seen in the emergence of the Accountable Care Organization (ACO), in which a group of providers is assigned responsibility for the health of a defined population.⁴⁶ ACOs have an incentive to utilize tools, such as our searchable database of interventions, to improve health for all members of their defined population and reduce costly hospitalizations and emergency department visits.

Test more policy interventions

Little research evaluates the impact of policy-level interventions on racial and ethnic disparities in care. Studies that rigorously evaluate policy are especially important in light of the impending changes that will result from healthcare reform. It is crucial that we anticipate and monitor the impact of reform on disparities in order to avoid unintended consequences. For example, what is the effect of ACOs on disparities and how can they be designed to reduce disparities in care? Pay-for-performance models have the potential to reward quality rather than volume, but it is important to avoid creating incentives to cherry-pick healthy, uncomplicated patients. Further research is needed to understand the value of incorporating safeguards such as pay-for-improvement into new payment schemes.¹ Other policy interventions that warrant further investigation include reimbursement for team-based care and incentives to create linkages between the community and the care delivery system.

Policy interventions can be difficult to implement because they frequently involve alignment of stakeholders across the healthcare system (e.g., payers and providers) and beyond the system (e.g., policymakers). Multi-stakeholder regional demonstration projects, such as the Center for Medicare and Medicaid Innovation's medical home pilots,^{47,48} are expanding, and may provide a fertile ground for implementing and evaluating policy interventions to reduce health disparities.

Our study has several limitations. First, we do not make summary statements about which interventions reduce disparities. Such statements could oversimplify the evidence and mislead readers. Interventions across diseases have different endpoints that are often not comparable. Most also involve multiple components, making it difficult to know which tactics, levels, or combination thereof are effective in reducing disparities. Furthermore, effectiveness can vary based on the care setting and priority population: what works in one organization may not work in another. For a discussion of promising approaches to reduce disparities, we refer readers to the 11 systematic review papers and the two papers that introduced those reviews.^{1,12–23}

Second, our study focuses on the interventions identified in 11 existing systematic reviews and does not include studies outside of the peer-reviewed literature. Thus, we can only draw conclusions about which interventions are under-studied in the literature, not which are under-utilized in practice. The advantage of peer review is that articles in our data set have been rigorously vetted by experts for quality and relevance. The 11 systematic reviews cover common conditions that account for significant morbidity among racial and ethnic minority groups and raise different issues in intervention research.

Third, our findings are subject to the inclusion criteria defined by the systematic reviews. All community interventions in our data set, for example, involve a sustained linkage to the care delivery system, so we have not captured interventions that are solely community-based. However, the link to the care system is relevant given that our primary audiences are healthcare organizations and health services researchers. Similarly, the systematic reviews may have excluded policy interventions that are not disease-specific. Studies that measure the impact of policy on specific disease outcomes would meet the inclusion criteria for the reviews, while those that assess broader change across conditions might be excluded.

Conclusions

Disparities reduction efforts do not exist in a vacuum. Even the most motivated, well-intentioned organizations must tackle disparities reduction in the context of pressures to reduce cost, expand access, improve quality, and attract and retain employees – to build the plane while flying, as the saying goes. While experience tells us that reducing disparities is challenging, it has also shown that it is possible; the literature, too, offers hundreds of examples where organizations have succeeded in this difficult endeavor.

This study makes two important contributions to the disparities field: our work can (1) guide organizations to identify interventions that best fit their specific needs and context, and (2) help researchers target areas where evidence may be lacking. We describe each of these goals below and explain how we hope readers will use this work in their efforts to reduce disparities.

First, by providing a practical, accessible characterization of the healthcare disparities literature, we hope to help practitioners identify evidence-based interventions that best fit their organizations' needs. Healthcare organizations under pressure for time and resources can use this work to quickly scan the disparities literature and understand which interventions have been implemented and evaluated. While every intervention must be tailored to its setting, we hope that this information helps identify interventions that most closely match organizational resources and priorities. For example, among healthcare providers, we believe that the most effective and sustainable efforts to reduce disparities are those that are integrated into an organization's broader quality improvement infrastructure: an organization looking to redesign its care team, for example, might use our work to identify interventions that add a community health worker to serve minority patients.¹ To

make this information widely available, we have created a searchable database on our website (www.solvingdisparities.org/fair), which includes the 391 disparities intervention articles discussed here and allows users to search by tactic, strategy, level, race/ethnicity and disease. While our study cannot judge which disparities interventions are most effective, it does allow individuals to quickly identify the most relevant studies and focus their time on understanding those interventions.

Second, we hope that this review will call attention to areas of disparities research that are relevant to healthcare organizations yet are inadequately examined in the existing literature. Our study reveals that the field has predominantly focused on the patient as a target for change. While this work is critical, it is not sufficient; providers, care teams, and organizations must shoulder more of the burden to change and elevate the standard of care delivery.

For quite some time, we have understood that the causes of disparities are multi-factorial, yet integrated solutions remain elusive. Today we are primed to devise creative interventions to improve minority health. The *Affordable Care Act* pushes for innovation in healthcare delivery, the marketplace demands value in healthcare, and there is realization that disparities, in part, reflect a problem with the quality of care. New organizational structures, such as Accountable Care Organizations, offer fresh incentives to care for populations by integrating the strengths of the healthcare system with the strengths of the community. These trends in healthcare practice and policy are creating a unique opportunity to reduce racial and ethnic disparities in care.

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Table 1

Distribution of Strategies and Tactics to Reduce Racial and Ethnic Disparities in Care

Strategy/Tactic	Number of Instances ¹	Percent
Delivering Education and Training	895	37.0%
Education about disease/condition	340	14.0%
Education in self-management	258	10.7%
Interactive education	129	5.3%
Communication-skills training	82	3.4%
Individually-tailored education	32	1.3%
Family/partner education	26	1.1%
Decision-making aid	20	0.8%
Cultural competency training	8	0.3%
Providing Reminders and Feedback	319	13.2%
Reminder	181	7.5%
Tracking system	52	2.1%
Individually-tailored reminder	35	1.4%
Performance report cards/audit	26	1.1%
Health maintenance card/health mini-record	25	1.0%
Restructuring the Care Team	283	11.7%
Increased involvement of nurse or medical assistant	99	4.1%
Add community health worker/lay health worker/peer coach/peer educator to the care team	53	2.2%
Add patient navigator	47	1.9%
Add dietitian	34	1.4%
Increased involvement of primary care provider in specialty care	19	0.8%
Increased involvement of pharmacist	16	0.7%
Add social worker	15	0.6%
Providing Psychological Support	237	9.8%
Therapy	160	6.6%
Harm/risk reduction	54	2.2%
Family/partner counseling	12	0.5%
Motivational interviewing	11	0.5%
Engaging the Community	158	6.5%
Employ community health worker/lay health worker/peer coach/peer educator in the community	62	2.6%
Outreach to individuals/households (e.g., invitations to events)	32	1.3%
Media education campaign	26	1.1%
Church- or school-based care delivery	25	1.0%
Coalition building/community advocacy	13	0.5%
Providing Financial Incentives	142	5.9%
Reduced out-of-pocket expenses	74	3.1%

Strategy/Tactic	Number of Instances ^I	Percent
Free give-aways	63	2.6%
Incentives to reward health behavior	4	0.2%
Pay-for-performance	1	0.0%
Increasing Access to Testing and Screening	95	3.9%
Integrated screening	33	1.4%
Self-administered and take-home test kits	22	0.9%
Free screening	21	0.9%
Risk/harm assessment	12	0.5%
Rapid test results	7	0.3%
Enhancing Language and Literacy Services	10	0.4%
Enhanced interpreter services	7	0.3%
Health literacy screening	3	0.1%
Other	281	11.6%
Increased referrals	99	4.1%
Patient/provider racial/ethnic concordance	81	3.3%
Adjust therapeutic regimen	70	2.9%
Home-based care delivery (patient-focused)	31	1.3%
TOTAL	2,420	100.0%

^I Instances are observations of tactics in combination with the level targeted by the tactic. Instances sum to more than the 391 because an article may include multiple tactics.

Table 2

Distribution of Levels Associated with Intervention Tactics

Level	Definition	Number of Instances ^I	Percent
Patient	Change the knowledge and/or behaviors of patients and/or their family members or partners (e.g., self-management and goal setting).	1210	50.0%
Provider	Change the knowledge and/or behavior of providers (e.g., disparities report cards).	160	6.6%
Microsystem (Immediate Care Team)	Add new members to, or shift responsibilities among, the immediate care team, such as the primary care provider, nurse, and staff (e.g., integrate peer educators into the care team).	216	8.9%
Organization	Change organization operations involving, but not limited to, clinic flow, information technology, and/or human resources (e.g., introducing Electronic Medical Records).	66	2.7%
Community	Work with community organizations and/or community members who are not established patients at the intervening organization (e.g., health education for church parishioners).	764	31.6%
Policy	Influence laws, regulations, and/or resource allocation on a regional or national basis (e.g., legislative advocacy).	4	0.1%

^I Instances are observations of tactics in combination with the level targeted by the tactic.