

U.S. Ethnic Group Differences in Diabetes Self-Management, Family Support, and Social Change: DAWN2 Study and Implications for Practice

National Diabetes Education Program Webinar Series
Wednesday, September 21, 2016
2-3 PM ET



National Diabetes Education Program

A program of the National Institutes of Health and the Centers for Disease Control and Prevention





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About the Presenters

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DAWN2 Research

Disclosures:

- Novo Nordisk supported the original DAWN and DAWN2 studies.
- Mark Peyrot was compensated by Novo Nordisk as principal investigator for DAWN2



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DAWN²TM

DIABETES ATTITUDES WISHES & NEEDS



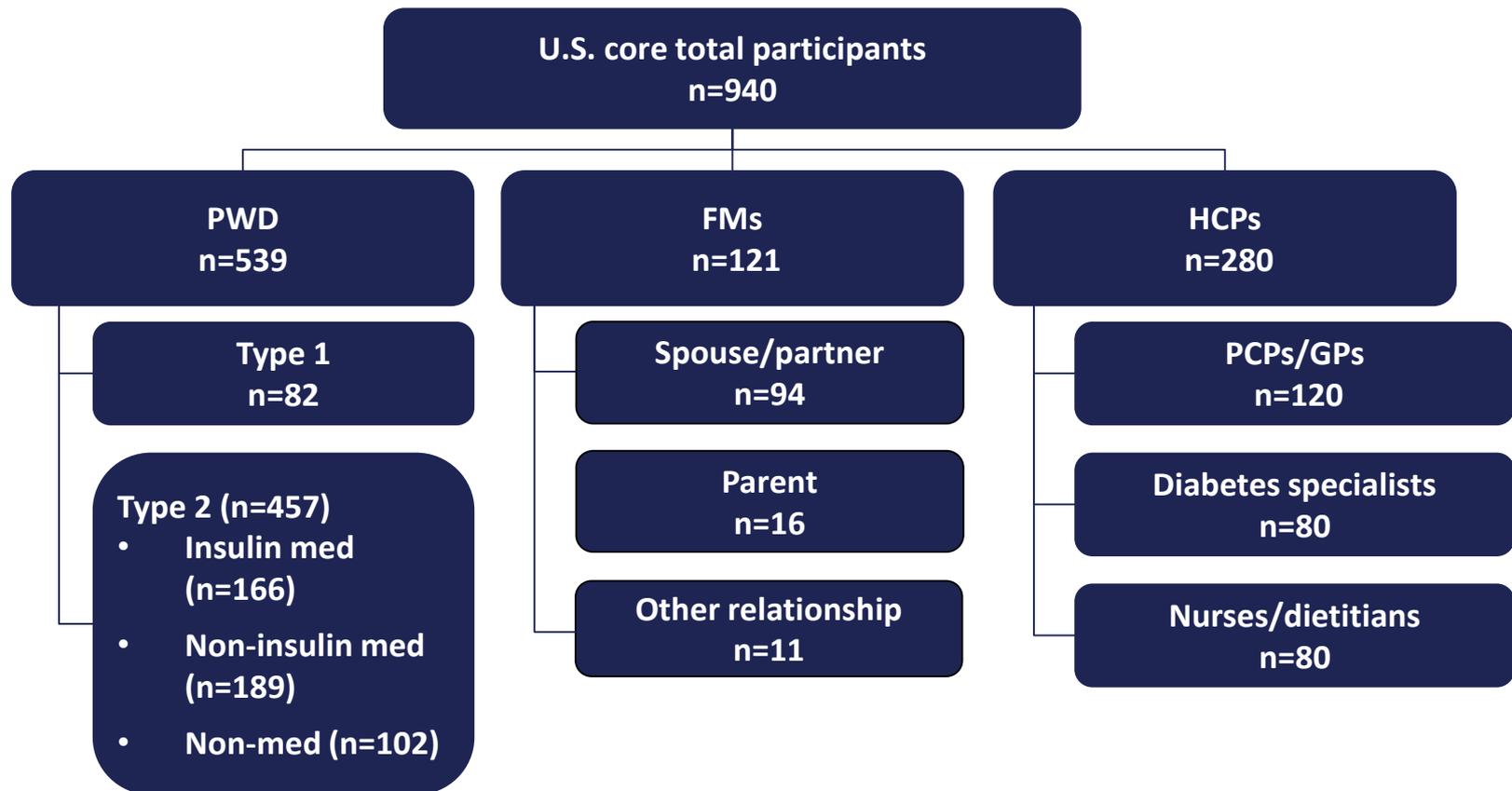
Long-term Study Goals of DAWN2

- Raise awareness of the unmet needs of PWD, their FMs, and HCPs
- Facilitate new dialog and collaboration among all key stakeholders in diabetes to improve patient involvement and equal access to quality care, self-management education, and support
- Drive scientific benchmarking and better practice sharing to facilitate global, national, and local action for person-centred diabetes care

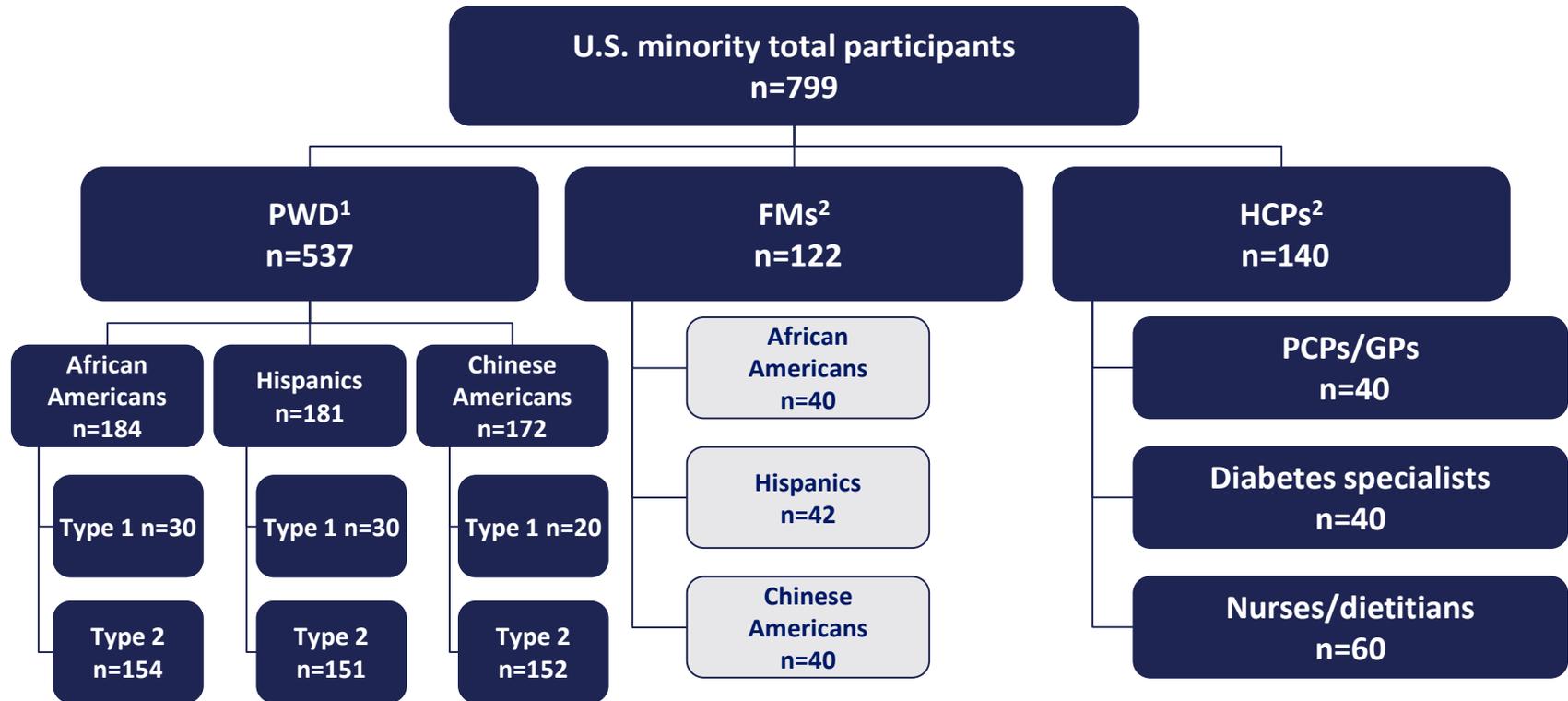


To enable all PWD to live full, healthy, and productive lives, and be actively engaged in preserving their own health and quality of life

U.S. Core Study Population



U.S. Minority Study Population



1. Peyrot M, et al. Curr Med Res Opin 2014;30:2241–54

2. U.S. DAWN2 study (data on file)



Ethnic Differences in DAWN2 Data

Three analyses showing ethnic differences in:

- Self-management among people with diabetes
- Frequency and perceived helpfulness of family member behaviors to support people with diabetes
- Perceptions of need for major improvements in social conditions regarding diabetes by people with diabetes and their family members



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Self-Management Among PWD

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Characteristics of PWD

| Indicator | M \pm SD or % (N) |
|--|---------------------|
| Gender (female) | 52.8 (557) |
| Age (years) | 57.3 \pm 15.3 |
| College graduate | 33.5 (353) |
| Income (over \$35,000) | 58.1 (551) |
| Ethnicity | |
| White non-Hispanic | 42.4 (447) |
| African American | 22.8 (241) |
| Hispanic American | 18.4 (194) |
| Chinese American | 16.4 (173) |
| Diabetes Type/Treatment | |
| T1DM | 15.1 (159) |
| T2DM, no DM medication | 14.0 (148) |
| T2DM, insulin medication | 41.5 (438) |
| T2DM, other DM medication | 29.4 (310) |
| DM duration (years) | 15.1 \pm 11.5 |
| DM, diabetes mellitus; M, mean; SD, standard deviation; T1DM, Type 1 diabetes mellitus; T2DM, Type 2 diabetes mellitus | |



Measures of Self-Management

Self-reports of:

- Days/week of adherence (medication, SMBG, diet, exercise, foot checks)
- Interest (desire or efforts) to improve adherence in the same five regimen areas



Differences in Self-Management

- Adherence for the total sample was highest for medications; intermediate for diet, foot checks and SMBG; and lowest for exercise
- Overall adherence for all non-medication items combined was highest for African Americans, with Hispanic and Chinese Americans intermediate, and white non-Hispanics lowest



Differences in Self-Management (cont.)

- White non-Hispanics exercised less than all other ethnic minorities
- Chinese Americans adhered to diet more than white non-Hispanics
- African Americans checked feet more often than white non-Hispanics and Chinese Americans; Chinese Americans checked less often than all other ethnic groups



Desire or Effort to Improve Self-Management Behaviors

- Interest in improving adherence was significantly higher for diet and exercise than for medication and SMBG
- When an overall score for all non-medication items was calculated, Hispanic Americans and Chinese Americans scored higher; African Americans and white non-Hispanics scored lower



Desire or Effort to Improve Self-Management Behaviors (cont.)

- Chinese Americans were most interested in improving adherence for medication, SMBG, and diet
- White non-Hispanics were least interested in improving adherence for medications and exercise
- None of the ethnic group differences for interest in improving adherence were dependent on levels of the corresponding self-management behavior



Summary

- Self-management profiles differ across ethnic groups
 - No ethnic group showed consistently higher or lower predisposition or success across all behavioral domains
- White non-Hispanics reported the lowest and African Americans the highest level of overall adherence
- Hispanic Americans and Chinese Americans reported the highest level of overall desire/effort to improve adherence
 - These ethnic group differences were not due to differences in level of adherence



Conclusion:

Results suggest that diabetes educators and care providers should consider ethnic group differences in how people with diabetes are managing their diabetes and what they feel most capable of improving



Building Cultural Awareness

- Ask about health beliefs and practices
- “Do you have any cultural/religious practices that influence how you care for your diabetes?”
- Ask your patients about their medications (including ones other than you prescribed)
- Ask about traditional and natural remedies



Assessing Lifestyle Behaviors

- What is hardest for you/biggest struggle about managing your diabetes/biggest success?
- What causes you the most worry about diabetes?
- How is diabetes affecting you, your life?
- How many times in the past week did you...What got in your way?
- What would help you to be more faithful...
- I'm really concerned about you. What can we do that would make it easier?



Lifestyle Behaviors

- Take advantage of teachable moments using open-ended questions and active listening
- Revise the plan as needed – if it doesn't work in the patient's life, it doesn't work.
- Provide information about behavioral options
- At each visit ask patients to identify one “to do” to better manage diabetes
- Set self-directed I-SMART goals



Assessment

- How often?
 - About how often do you miss your...
 - **During a typical week, what percent of the time do you miss your...**
 - It's easy to forget to take your medicines. About how often does that happen to you?
 - What do you think will happen if things stay the same?
- Why?
 - Is paying for your medicines a problem for you?
 - Are there times when you decide not to take your medicines? If so, why?
 - What gets in the way of taking your...
 - What would help you to be more faithful in taking your...



Medications

- Is there anything that would help you to be more faithful in taking this medicine?
- What we know from the most recent studies is...
- Here is what is proven to work best...
- This is what the data show....
- Here is what my other patients like you have told me...
- Costs and coverage



SMBG

- Increasing the efficacy:
 - Tell me about your numbers.
 - How to use the information.
 - What to do – when to call.
 - Paired testing
 - Pre and 2 hours post food
 - Pre and post exercise
 - Structured testing¹
 - 7 point testing for 3 days prior to appointment
 - Record results, meal size as SML, rate energy level and learning
 - Providers were trained in reviewing for problem-solving/not blame (e.g., What did you learn?).



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Ethnic Differences In Frequency and Perceived Helpfulness of Family Member Behaviors to Support People with Diabetes

DAWN²TM

DIABETES ATTITUDES WISHES & NEEDS



Characteristics of Family Members

| Indicator | M \pm SD or % (N) |
|---|---------------------|
| FM gender (female) | 67.6 (161) |
| FM age (years) | 48.0 \pm 14.9 |
| FM Ethnicity | |
| White non-Hispanic | 44.1 (105) |
| African American | 19.7 (47) |
| Hispanic American | 19.3 (46) |
| Chinese American | 16.8 (40) |
| FM college graduate | 33.6 (80) |
| PWD uses injected DM medication | 54.2 (129) |
| FM lives with PWD spouse | 46.2 (110) |
| FM lives with PWD parent | 29.4 (70) |
| FM lives with PWD other | 24.4 (58) |
| PWD is female | 41.2 (98) |
| PWD age (years) | 61.4 \pm 14.8 |
| DM, diabetes mellitus; FM, family members; M, mean; PWD, people with diabetes; SD, standard deviation | |



Measures of Diabetes Support

Self-reports of frequency and perceived helpfulness of 7 support behaviors:

- Reporting when PWD is doing well
- Reporting when PWD is doing poorly
- Advising PWD
- Listening to PWD
- Assisting PWD
- Doing activities for PWD
- Doing activities with PWD



Family Member Support for PWD, by Ethnicity

- When all ethnic groups were combined, support was most frequent for listening to PWD and assisting PWD; reporting when the PWD is doing well was more frequent than reporting when the PWD is doing poorly
- Across the board, white non-Hispanics had significantly lower scores for providing support than other ethnic groups
- Chinese Americans were most likely to tell when the PWD is doing poorly



Perceived Helpfulness of Support for PWD by Ethnicity

- When all ethnic groups were combined, support was perceived as most helpful for listening to PWD and assisting PWD, followed by reporting when PWD is doing well and doing activities with PWD
- Doing activities for PWD and offering advice were perceived as more helpful than reporting when PWD is doing poorly



Perceived Helpfulness of Support Behaviors for PWD by Ethnicity

- With the exception of listening to PWD, white non-Hispanics were significantly less likely than other ethnic groups to have rated all support behaviors as helpful
- Chinese Americans were significantly more likely to have rated several behaviors as helpful: Reporting when PWD is doing poorly, advising PWD, assisting PWD, and doing activities with PWD



Summary

- Overall, family members reported substantial performance of support behaviors - all above the scale midpoint
- Overall, a majority rated all behaviors as helpful, with one exception - reporting when PWD is doing poorly
- Family members more frequently engage in support behaviors that they view as helpful
- Listening to PWD was the behavior most often viewed as helpful
- Compared with white non-Hispanics, the three ethnic minority groups were more likely to report performing support behaviors and also to perceive them as helpful
- Chinese Americans reported the highest levels of support frequency and perceived helpfulness



Conclusion

- Family members more frequently engage in support behaviors they view as more helpful.
- Support profiles differ across ethnicities.
- Consider ethnic group differences in family member support.



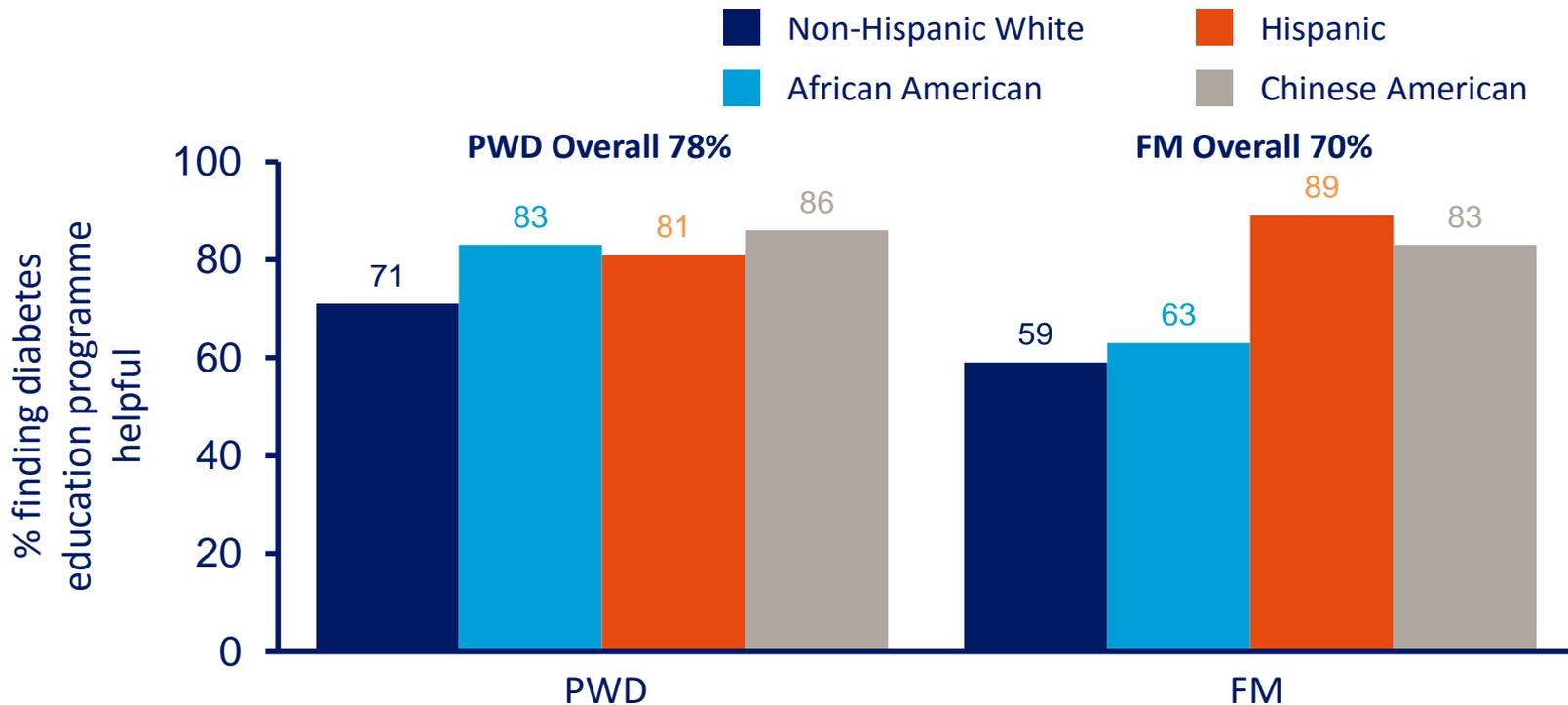
Psychological Outcomes in U.S. FMs

- Psychological outcomes were **worse** for FMs if:
 - diabetes was perceived as severe
 - diabetes treatment involved insulin
 - PWD required greater assistance/support
 - there was more conflict with PWD related to diabetes care
 - FMs had greater non-diabetes burden
- Psychological outcomes were **better** for FMs who:
 - felt capable and/or successful in helping people manage their diabetes
 - had more support from their social networks
 - had participated in diabetes education



Ethnic Groups in the U.S. Reporting Diabetes Education was Helpful

Overall, how helpful was/were the education program(s) you attended?



PWD data shown are weighted on age, gender, region and education to increase sample representativeness

Funnell M. Presented at AADE 2014
U.S. DAWN2 study (data on file)



Assess Person with Diabetes

- How has diabetes affected you and your family?
- Who provides the greatest support for you in managing your diabetes?
- What would be the one thing that would be most helpful for you from others?
- Are there areas that you would like more support in managing your diabetes? From whom?
- What do you think would be a useful strategies to get the support you need?



Key Elements of Support

- Stress the importance of support.
- Ask about including family or friends in DSME/S and clinical visits.
- Ask for help in planning strategies to reach your goals.
- Tell your family how they can be most helpful.
- You have a right to ask for what you need. If it doesn't feel supportive to you, then it is not support, even if they mean well.



Assess Family and Friends

- How has diabetes affected you and your family?
- What would be helpful for you to learn about your loved one's diabetes?
- What is your biggest struggle/hardest for you in providing support?
- What would be helpful for you to learn in order to better support your loved one?



Key Elements for Providing Support

- Stress the importance of support.
- Ask your loved one how you can be most helpful.
- Be honest about your feelings, worries and concerns.
- Rather than criticizing, use “I” statements to let them know how their diabetes affects you.
- You do not have to be the only person supporting your loved one. If it is too much for you, encourage them to reach out to others.



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Wishes for Improvement in Social Conditions Regarding Diabetes among U.S. Ethnic Groups

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DIABETES ATTITUDES WISHES & NEEDS



Needs Assessed by PWD & FM

Eight areas potentially needing improvement

- Acceptance of PWD
- Good places to exercise
- Places to buy healthy/affordable food
- Diabetes-friendly workplaces
- Earlier diabetes diagnosis and treatment
- Public awareness of diabetes (FM only)
- Prevention of diabetes (FM only)
- Good medical care of diabetes (FM only)



Percent (%) of PWD Reporting Need for Improvement, by Ethnicity

| Improvement Wished for | White non-Hispanic (n = 447) | African American (n = 241) | Hispanic American (n = 194) | Chinese American (n = 173) |
|--------------------------|------------------------------|----------------------------|-----------------------------|----------------------------|
| Acceptance of PWD* | 16 ^{BCD} | 39 | 40 | 42 |
| Good places to exercise* | 25 ^{BCD} | 56 | 56 | 57 |
| Good places to buy food* | 45 ^{BCD} | 63 | 69 | 60 |
| DM-friendly workplaces* | 19 ^{BCD} | 42 | 48 | 51 |
| Earlier Dx and Tx of DM* | 42 ^{BCD} | 60 | 60 | 64 |

PWD, people with diabetes; DM, diabetes mellitus; Dx, diagnosis; Tx, treatment

*Overall p<0.001 for ethnicity

^BMean is significantly (p<0.001) different from African American mean

^CMean is significantly (p<0.001) different from Hispanic American mean

^DMean is significantly (p<0.001) different from Chinese American mean



PWD: Need for Improvement, by Ethnicity

- For all items, each of the 3 minority ethnic groups reported significantly more need for improvement than white non-Hispanics
- Among the three ethnic minority groups, there were no significant differences for any of the social conditions measured



Percent (%) of FM Reporting Need for Improvement, by Ethnicity

| Improvement Wished for | White non-Hispanic (n = 447) | African American (n = 241) | Hispanic American (n = 194) | Chinese American (n = 173) |
|--------------------------|------------------------------|----------------------------|-----------------------------|----------------------------|
| Acceptance of PWD* | 10 ^{BCD} | 30 ^A | 22 ^{AD} | 45 ^{AC} |
| Good places to exercise* | 18 ^{BCD} | 60 ^A | 59 ^A | 75 ^A |
| Good places to buy food* | 39 ^{BCD} | 66 ^A | 72 ^A | 75 ^A |
| DM-friendly workplaces* | 11 ^{BCD} | 40 ^{AD} | 46 ^A | 65 ^{AB} |
| Earlier Dx and Tx of DM* | 41 ^D | 51 ^D | 61 ^A | 80 ^{AB} |
| Public acceptance of DM* | 36 ^D | 51 ^D | 67 ^A | 78 ^{AB} |
| Prevention of DM* | 46 ^D | 51 ^{CD} | 78 ^{AB} | 80 ^{AB} |
| Good medical care of DM* | 45 ^{BCD} | 64 ^{AD} | 78 ^A | 83 ^{AB} |

DM, diabetes mellitus; Dx, diagnosis; PWD, people with diabetes; Tx, treatment

*Overall p<0.001 for ethnicity

^AMean is significantly (p<0.05) different from White Non-Hispanic mean

^BMean is significantly (p<0.05) different from African American mean

^CMean is significantly (p<0.05) different from Hispanic American mean

^DMean is significantly (p<0.05) different from Chinese American mean



FM Need for Improvement, by Ethnicity

- Chinese American and Hispanic respondents reported significantly more need for improvement than white non-Hispanic respondents for all conditions, and African American respondents more need for most conditions
- Chinese American respondents reported more need for improvement than African American respondents for most conditions, and more need than Hispanic American respondents for Acceptance of PWD
- Hispanic American respondents reported more need for improvement in Prevention of diabetes than African American respondents



Need for Improvement in Total Sample (% of PWD and FM)

| Condition Needing Improvement | People with Diabetes (N = 1055) | Family Members (N = 238) |
|-------------------------------|---------------------------------|--------------------------|
| Good places to buy food | 56 | 57 |
| Earlier Dx and Tx of DM | 53 | 53 |
| Good places to exercise | 43 | 44 |
| DM-friendly workplaces | 35 | 32 |
| Acceptance of PWD | 30 | 22 |



People with Diabetes and Family Members

When all ethnic groups were combined, results were similar for PWD and FM:

- Good places to buy food and Earlier diagnosis and treatment were most often identified as needing improvement
- Good places to exercise, Diabetes-friendly workplaces, and Acceptance of people with diabetes had significantly lower levels of need for improvement compared with the top two scoring items
- The three lowest scoring items were significantly different from each other



Overall Need for Improvement, by Ethnicity

| For 5 conditions common to PWD and FM | White non-Hispanic | African American | Hispanic American | Chinese American |
|---------------------------------------|----------------------------------|--------------------------------|--------------------------------|---------------------------------|
| People with diabetes | 29.4 ^{BCD} (n = 447) | 52.0 ^A (n = 241) | 54.6 ^A (n = 194) | 54.8 ^A (n = 173) |
| Family members | 23.8 ^{BCD} (n = 105) | 49.4 ^{AD} (n = 47) | 52.0 ^{AD} (n = 46) | 68.0 ^{ABC} (n = 40) |

^AMean is significantly ($p < 0.001$) different from White Non-Hispanic mean

^BMean is significantly ($p < 0.001$) different from African American mean

^CMean is significantly ($p < 0.001$) different from Hispanic American mean

^DMean is significantly ($p < 0.001$) different from Chinese American mean



PWD and FM: Scores Combined

When the five conditions common to PWD and FM were combined into a single measure:

- White non-Hispanics had significantly lower scores than each of the three ethnic minority groups for both PWD and FM
- For PWD, there were no significant differences among the three ethnic minority groups
- FM Chinese Americans had significantly higher scores than the other ethnic minority groups, and African Americans and Hispanic Americans were not significantly different from each other



Summary

- PWD and their family members reported substantial need for improvement in all social conditions presented (range = 22% to 61%)
- Perceived levels of need were similar for PWD and family members
- PWD and family members in the three ethnic minority groups reported significantly more need for improvement than white non-Hispanics



Conclusions

Results clearly demonstrate that ethnicity and culture shape the way that PWD and their FM perceive the need for improvement in social conditions regarding diabetes, highlight potential health disparities, and emphasize the importance of taking ethnicity into account when formulating and implementing social interventions.



Strategies for Improvements for HCPs

- Get involved in advocacy efforts
- Ensure needed referrals (e.g., DSMS, behavioral therapy, medication management, PT, mental health)
- Address barriers that limit access to needed services, including DSMS
- Ensure and advocate for access to programs that provide financial and other resources
- Identify supportive and needed community resources



Strategies for Persons with Diabetes and Family Members

- Get involved – people with diabetes and their families are the most powerful voices
- Speak up – diabetes is not your fault and is not a shame
- Become a peer leader - most effective peers are those who have struggled, not “perfect patients”
- Become your own best advocate
- Participate in community fund-raising and educational events



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Thank You!

2014 NDEP National Diabetes Survey (NNDS) Findings

Joanne Gallivan, MS, RDN

Related Resources from NDEP

www.ndep.nih.gov



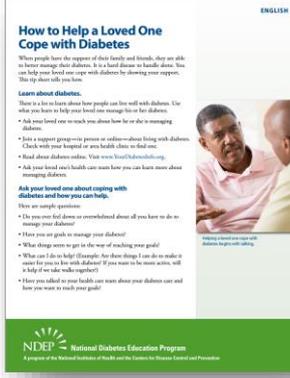
4 Steps to Manage Your Diabetes for Life
A booklet for people with diabetes



Take Care of Your Feet for a Lifetime
A booklet for people with diabetes



Know Your Blood Sugar Numbers: Use Them to Manage Your Diabetes



How to Help a Loved One Cope with Diabetes



Diabetes HealthSense
Resources for living well

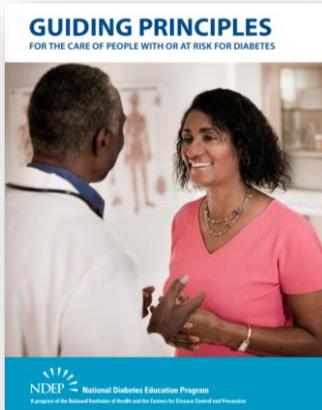
Diabetes HealthSense provides easy access to resources to help you live well and meet your goals—whether you have diabetes or are at risk for the disease.

Live well. Eat healthy. Be active. It's not easy, but it's worth it.

MCES: Setting Goals to Improve Your Health

MCES: Setting Goals to Improve Your Health

Selected Resources



GUIDING PRINCIPLES
FOR THE CARE OF PEOPLE WITH OR AT RISK FOR DIABETES



Promoting Medication Adherence in Diabetes

On average, 50% of medications for chronic diseases are not taken as prescribed.

Resources for patients

Resources for health care teams

Scientific Evidence



Practice Diabetes for Physicians and Health Care Teams

Step 1: Understand Current Efficacy and Future of Diabetes Care

Step 2: Find Out How to Assess Your Practice

Step 3: Implement Changes to Transform Your Practice



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