The DAWN2 Study: Putting the results into your practice

National Diabetes Education Program Webinar Series
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Presenters

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The DAWN2 Study: Putting the results into your practice

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  – Steno diabetes center
  – IAPO
  – Novo Nordisk A/S

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  – See details at www.dawnstudy.com

IDF, International Diabetes Federation; IAPO, International Alliance of Patients’ Organizations
DAWN study in 2001

**DAWN**
Diabetes Attitudes Wishes & Needs

- **5,426** PWD (adults)
- **3,982** HCPs
- **13** Countries

Platform for stakeholder dialog and engagement

To improve outcomes in diabetes, we must focus on the *person* with the condition

PWD, people with diabetes
HCPs, healthcare professionals
DAWN study in 2001

- Diabetes self management is less than optimal
- Self-management problems are due in large part to psychosocial problems that are common but rarely treated
- 85% reported severe distress at diagnosis; 43% continued to experience these feelings (mean=15 years)
- Access to team care and communication between patients and professionals is associated with better outcomes

MANAGING DIABETES IS AS SIMPLE AS ABC:

A1C Below 6.5%
- The A1C test reflects your blood glucose control over the past few months.
- Work with your doctor to have your own personal A1C goal.
- Every 1% above 6% elevates the risk for diabetes complications.
- Your blood glucose will stay lower when you exercise and restrict calorie intake.

Blood Pressure Below 130/80
- Up to 60% of people who have diabetes also have high blood pressure.
- High blood pressure can cause heart attack, stroke, and kidney disease.
- Blood pressure stays low when you reduce sodium in your diet and follow the DASH diet.

Cholesterol in Check
- The LDL goal for most people is below 100.
- The HDL goal for most people is above 40.
- If you have diabetes you are more prone to cholesterol abnormalities and heart disease.
- LDL or "bad" cholesterol can clog your blood vessels and cause heart attack or stroke.
- HDL or "good" cholesterol helps remove cholesterol from your blood vessels.
- LDL stays low when you eat less saturated fat and cholesterol from animal foods.
- HDL stays high when you exercise, eat fish and soluble fiber and live a healthy lifestyle.

For more information, visit the National Diabetes Education Program at http://ndep.nih.gov/
Emotional well-being is an important part of diabetes care

- Assess psychological and social situation as part of medical management of diabetes
- Screening: attitudes, expectations affect/mood, quality of life, resources (financial, social, and emotional), psychiatric history
- Routinely screen for depression, diabetes-related distress, anxiety, eating disorders, and cognition

Required content areas now emphasize:

- Effective coping
- Problem solving
- Behavior change strategies (Self-directed goal setting)

On-going diabetes self-management support (DSMS) is critical in order to sustain participants’ progress resulting from diabetes self-management education.
The activities to assist the person with diabetes to implement and sustain the ongoing behaviors needed to manage their illness.

The support can include behavioral, educational, psychosocial and/or clinical.

Key lessons for diabetes educators

• Self-management behaviors are symptoms of underlying problems in living with diabetes

• Need to start with identifying the problem if we want to help people with diabetes improve their behaviors

• Need to integrate psychosocial and behavioral aspects with the clinical content
  – What are the key motivations and barriers?
Why was a new study required?

PWD today¹
Will increase to
552 million by 2030²

Primary health systems are under-resourced
and poorly designed to deliver empowering
and supportive preventive diabetes and
chronic care

Every
10
seconds

Three more people
will develop diabetes³

Active broad involvement of PWD and
their FMs, use of chronic care models,
and IT/mobile technologies are yet to
be fully realized

DAWN2 required to provide new global evidence and a partnership platform to drive long-term change for person-centered chronic care and prevention

Long-term study goals

• 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

DAWN2: A global 360° perspective on diabetes

17 countries

IDF  Steno Diabetes Center  IAPO

15,438 (US 940) respondents

8,596¹ (US 539)²,³ PWD

2,057⁴ (US 121)² FMs

4,785⁵ (US 280)² HCPs

2. US DAWN2 study (data on file)
Total study population

Total participants globally
n=15,438

PWD¹
n=8,596

Type 1
n=1,368

Type 2 (n=7,228)
- Insulin med (n=2,591)
- Non-insulin med (n=2,937)
- Non-med (n=1,700)

FMIs²
n=2,057

HCPs³
n=4,785

PCPs/GPs
n=2,066

Diabetes specialists
n=1,350

Nurses
n=827

Dietitians
n=542

## Questionnaire topics

<table>
<thead>
<tr>
<th>Health/quality of life (PWD and FMs)</th>
<th>Attitudes and beliefs about diabetes</th>
<th>Diabetes training (HCPs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes profile</td>
<td>Care and support/involvement</td>
<td>Future needs</td>
</tr>
<tr>
<td>Active self-management</td>
<td>Diabetes education and information</td>
<td>Demographic and practice characteristics</td>
</tr>
</tbody>
</table>

The DAWN2 results themes

- Emotional and physical well-being
- New perspectives on family burden and support
- Involvement and support for active self-management
- Educational and information resources
- Access to quality diabetes care
- Community resources and societal attitudes
Living with and managing diabetes is distressing for PWD

45% of PWD have emotional distress due to their diabetes

14% of PWD report having likely depression

Diabetes has a negative impact on a wide range of life domains

PWD reported a negative impact on the following aspects of living:

- Reduced physical health: 62%
- Reduced emotional well-being: 46%
- Finances: 44%
- Leisure activities: 38%
- Work and studies: 35%
- Relationships with family/friends/peers: 21%

Diabetes impacts FMs, resulting in substantial burden, worry and distress

- 40% of FMs expressed a high level of distress related to concerns about their relative with diabetes
- 35% of FMs reported a ‘moderate’ to ‘very large’ burden from caring for a relative with diabetes

Diabetes has a wide-ranging impact on the lives of FMs

Many FMs want to help, but do not know how

- 46% would like to be more involved in helping their relative with diabetes deal with feelings about the condition
- 39% want to be more involved in caring for PWD
- 37% do not know how best to help

The value of actively engaged PWD

Percentage of HCPs who indicate it would be ‘somewhat or very helpful’ for PWD to

- Indicate how HCPs can best support them: 85%
- Prepare questions before consultations: 84%
- Participate in community activities to improve self-care: 84%
- Find information on self-management themselves: 71%

The need for self-management resources

60% of HCPs feel that there is a need for major improvements in the availability of diabetes self-management education.

61% of HCPs feel that improving the availability of diabetes self-management education will reduce disease burden.

Participation in diabetes education needs improvement

49% of PWD participate in diabetes educational programs/activities to help them manage diabetes\(^1\)

23% of FMs participate in any diabetes educational programs/activities\(^2\)

Diabetes education is helpful for those who participate in it

Percentage of PWD and FMs reporting that diabetes education programs are ‘somewhat or very helpful’

- **PWD**: 81%
- **FMs**: 72%

People who participate in diabetes education reported fewer psychological problems and enhanced self-management compared with those who had not participated in any educational program

Inadequate psychosocial and behavioral assessment

In the past 12 months, did anyone from your healthcare team do the following (% reporting ‘yes’)?:

- Measure your long-term blood sugar control level: 72%
- Examine your feet: 45%
- Ask about the types of foods you have been getting: 49%
- Ask if you have been anxious or depressed: 32%

HCPs want to receive more training in many aspects of diabetes care

- Medical: 63% received training, 47% desires training
- Nutrition: 52% received training, 51% desires training
- Communication and motivation: 30% received training, 56% desires training
- Self-management education: 34% received training, 50% desires training
- Psychological aspects: 59% desires training, 20% received training

Discrimination – a global issue

- Proportion of people (%, 95% CI) who experienced discrimination because of their diabetes, by country

Country specific data and the mean of these data (dotted line) are adjusted and differ from the unadjusted Global score and country score (range)

Negative themes:
- Anxiety, fear, worry about acute/long-term complications, depression and negative moods
- Discrimination at work and societal lack of understanding about diabetes

Adaptive themes:
- Positive outlook and sense of resilience
- Psychosocial support from family, friends, HCPs and others with diabetes

Summary:
DAWN2 Key global study results

❤️ Diabetes is associated with significant psychosocial challenges

👨‍👩‍👧‍👦 FMs are burdened by diabetes but they also represent an untapped potential for support

📝 Active engagement and participation of PWD is lacking but a high priority for most

🎓 Half of all PWD never participated in a diabetes education program, but of those who did most found it very helpful

❤️ Access to quality diabetes care is poor and HCPs want more training in many aspects of diabetes care

❄️ Discrimination due to diabetes is prevalent, demonstrating a lack of education and awareness
US core study population

US core total participants
n=940

PWD
n=539

Type 1
n=82

Type 2 (n=457)
- Insulin med (n=166)
- Non-insulin med (n=189)
- Non-med (n=102)

FMs
n=121

Spouse/partner
n=94

Parent
n=16

Other relationship
n=11

HCPs
n=280

PCPs/GPs
n=120

Diabetes specialists
n=80

Nurses/dietitians
n=80

US DAWN2 study (data on file)
US minority study population

US minority total participants
n=799

PWD^1
n=537

- African Americans
  - Type 1
    - n=30
  - Type 2
    - n=154

- Hispanics
  - Type 1
    - n=30
  - Type 2
    - n=151

- Chinese Americans
  - Type 1
    - n=20
  - Type 2
    - n=152

FM^2
n=122

- African Americans
  - n=40

- Hispanics
  - n=42

- Chinese Americans
  - n=40

HCP^2
n=140

- PCPs/GPs
  - n=40

- Diabetes specialists
  - n=40

- Nurses/dietitians
  - n=60

2. US DAWN2 study (data on file)
# Self-management in the US

<table>
<thead>
<tr>
<th>On how many of the last 7 days...</th>
<th>Mean (on a scale of 0–7)¹</th>
<th>Desire to improve outcome, %²</th>
</tr>
</thead>
<tbody>
<tr>
<td>have you followed a healthy eating plan?</td>
<td>4.7</td>
<td>69</td>
</tr>
<tr>
<td>did you participate in ≥30 min of physical activity?</td>
<td>2.7</td>
<td>65</td>
</tr>
<tr>
<td>did you test your blood sugar the number of times recommended by your HCP?</td>
<td>4.5</td>
<td>N/A</td>
</tr>
<tr>
<td>did you take all your diabetes medications exactly as agreed with your HCP?</td>
<td>6.4</td>
<td>30</td>
</tr>
<tr>
<td>did you check your feet?</td>
<td>4.7</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A, not asked

2. US DAWN2 study (data on file)
## Psychological outcomes for PWD in the US differ by ethnicity

<table>
<thead>
<tr>
<th>Psychological outcome, mean</th>
<th>Non-Hispanic White n=447</th>
<th>African American n=241</th>
<th>Hispanic n=194</th>
<th>Chinese American n=173</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>The higher the score, the better</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Well-being (SD = 22.87)*</td>
<td>57.12†</td>
<td>64.36‡</td>
<td>60.89</td>
<td>59.96</td>
</tr>
<tr>
<td>Quality of life (SD = 23.24)**</td>
<td>65.11†</td>
<td>72.49‡§</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes empowerment (SD = 22.52)**</td>
<td>34.34†§</td>
<td></td>
<td></td>
<td>51.13†§</td>
</tr>
<tr>
<td><strong>The lower the score, the better</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diabetes impact (SD = 18.19)**</td>
<td>57.20†</td>
<td></td>
<td></td>
<td>48.95‡§</td>
</tr>
<tr>
<td>Diabetes distress (SD = 26.80)**</td>
<td>22.92†§</td>
<td></td>
<td></td>
<td>32.33†</td>
</tr>
</tbody>
</table>

Model = ANCOVA controlling diabetes type/treatment, diabetes duration, gender, age, income, education.

*Overall p<0.01 for ethnicity; **Overall p<0.001 for ethnicity.

Mean is significantly (p<0.05) different from †African American mean; ‡non-Hispanic white mean; § Chinese American mean; ||Hispanic mean.

Better outcomes are in green; poorer outcomes are in red

Level of involvement by others desired by PWD in the US differs by ethnicity

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

Funnell M. Presented at AADE 2014
US DAWN2 study (data on file)
Participation in diabetes education programs across ethnic groups in the US

Have you ever participated in a diabetes education program for PWD and/or their families?

- Non-Hispanic White
- Hispanic
- African American
- Chinese American

Overall 64%

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>PWD (%)</th>
<th>FM (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Hispanic</td>
<td>64</td>
<td>32</td>
</tr>
<tr>
<td>Hispanic</td>
<td>68</td>
<td>40</td>
</tr>
<tr>
<td>African American</td>
<td>65</td>
<td>41</td>
</tr>
<tr>
<td>Chinese American</td>
<td>61</td>
<td>30</td>
</tr>
</tbody>
</table>

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

Funnell M. Presented at AADE 2014
US DAWN2 study (data on file)
Ethnic groups in the US reporting diabetes education was helpful

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

- Non-Hispanic White
- Hispanic
- African American
- Chinese American

Overall 78%
- PWD: 71%
- African American: 83%
- Hispanic: 81%
- Chinese American: 86%

Overall 70%
- PWD: 59%
- African American: 63%
- Hispanic: 89%
- Chinese American: 83%

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

Funnell M. Presented at AADE 2014
US DAWN2 study (data on file)
Summary of US DAWN2 data

• Most PWD want to improve self-management (eating and exercise habits)
• There is a substantial amount of diabetes distress among both PWD and FM, and PWD who are in minority groups experience more diabetes distress than non-Hispanic whites
• Having a large social support network for diabetes is related to better psychosocial outcomes for PWD and their FMs
• Few PWD let other people know how they can best support them in managing their diabetes OR ask for support, especially non-Hispanic whites
• Most PWD are pleased with the level of involvement of their family in diabetes care, and FMs want to help. PWD feel that FMs listen to them when they talk about difficulties of living with diabetes
Implications for practice

• Diabetes is a burden, both in terms of self-managing the condition and psychologically. Thus, we need to encourage PWD to ask for support when needed

• FMGs are a valued resource, but may not have the knowledge or resources to help their loved ones with diabetes

• FMGs and friends should continue to listen to those with diabetes. We need to provide outlets of psychosocial support for everyone

• We must involve PWD and FMGs as equal partners when developing new care solutions
Implications for diabetes educators

• We need to involve FMs or other supporters in DSME/S and help them learn how to help
• We need to ask patients how diabetes is affecting their lives
• We need to help patients identify problems, not focus on behaviors (What is hardest for you?)
• Goal-setting needs to flow from patient-identified problems (Are you interested in taking a step to make that problem or your life with diabetes better?)
• Remember, to patients diabetes is all one thing – an integrated medical, psychological, social condition
NDEP Campaign

Managing Diabetes.

It’s not easy, but it’s worth it.

I made a plan.

It wasn’t easy, but I did it.

So can you.
Diabetes HealthSense

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.

Healthy Eating with Diabetes

Making changes in the way you eat can be difficult. Learn about small steps for healthy eating to help you manage your weight.
US National Diabetes Education Program
Diabetes HealthSense

http://www.dawnstudy.org/News and activities/dialogue tools.asp
A new needs model for diabetes

- **Me:** Being able to cope with my condition, and living a full, healthy, and productive life
- **Family and friends:** Emotional and practical support in all aspects of my condition
- **Community:** Care and treatment: Access to quality diagnosis, treatment, care, and DSME/S
- **Work/school:** Support for, and understanding of, my condition
- **Living:** Having the same opportunities to enjoy life as everybody else
- **Society:** A healthcare system, government, and public that are willing to listen, change, and be supportive of my condition

The DAWN™ needs model 2011. DAWN Study 2001; DAWN Youth Study 2008; DAWN2 Dialogue Events 2011
Everyone has a role to play to make person-centered diabetes care and education a reality!

- Patient organizations, communities
- Decision makers, payers
- PWD and their families
- HCPs
References

• American Diabetes Association. Diabetes Care 2015;38(Supple 1):S20-S31
• Funnell M. Presentation at AADE 2014
Thank You!
Diabetes Management Resources
www.YourDiabetesInfo.org

4 Steps to Manage Your Diabetes for Life

How to Help a Loved One Cope with Diabetes
When people have the support of their family and friends, they are able to better manage their diabetes. It is a hard disease to handle alone. You can help your loved one cope with diabetes by showing your support. This tip sheet will help you do this.

Learn about diabetes.
There is a lot to learn about how people can live well with diabetes. Use what you learn to help your loved one manage his or her diabetes.
• Ask your loved one to teach you about how he or she is managing diabetes.
• Join a support group—on or offline—about living with diabetes. Check with your hospital or area health clinic to find one.
• Ask your loved one’s health care team how you can learn more about managing diabetes.

Ask your loved one about coping with diabetes and how you can help.
Here are sample questions:
• Do you ever feel down or overwhelmed about all you have to do to manage your diabetes?
• How do you set goals to manage your diabetes?
• What things seem to get in the way of reaching your goals?
• What can I do to help? (Example: Are there things I can do to make it easier for you to live with diabetes? If you want to be more active, will it help if we take walks together?)
• Have you talked to your health care team about your diabetes care and how you want to reach your goals?

Taking Care of Your Diabetes Means Taking Care of Your Heart
Diabetes and Heart Disease
For people with diabetes, heart disease can be a serious health problem. Many people don’t know that having diabetes means that you have a greater chance of having heart problems such as a heart attack or stroke. Taking care of your diabetes can also help you take care of your heart. Use the tools in this tip sheet to help. They are:
• A list of things you can do such as eating healthy foods and getting more active.
• A form to write down and track your A1C, blood pressure, and cholesterol numbers.

What you can do now
Ask your health care team these questions:
• What can I do to lower my chances of getting heart disease?
• What should my goals be for A1C, blood pressure, and cholesterol?
• How can I do to reach these goals?
• Should I take medicine that can prevent my heart such as aspirin or a statin?

Ask any questions you have about diabetes and heart disease.
Webinar Recording and Evaluation

• Webinar Recording and Presentation Slides
  – www.YourDiabetesInfo.org/Webinars

• Webinar Evaluation
  – Email with link to survey

• Certificate of Completion
  – ndep@hagersharp.com
Question & Answer Session

NDEP National Diabetes Education Program
A program of the National Institutes of Health and the Centers for Disease Control and Prevention

www.YourDiabetesInfo.org

1-888-693-NDEP (1-888-693-6337)

TTY: 1-866-569-1162