



ODPCP

OHIO DIABETES PREVENTION & CONTROL PROGRAM

Diabetes and Depression: Research and Practice Considerations in Appalachia

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Diabetes and Depression: The Scope of the Problem

Within the past several years, numerous studies have identified a relationship between diabetes and depression [1]. According to the Diagnostic and Statistical Manual of Mental Disorders [DSM-IV-TR; 2] criteria, a major depressive disorder



consists of one or more major depressive episodes each of which lasts at least two weeks. The most prominent symptoms of major depressive disorder are depressed mood and loss of interest or pleasure. Patients also have at least four other symptoms, that vary from person-to-person. Associated symptoms include changes to sleep (e.g., insomnia, difficulty staying asleep, early awakening), weight gain or loss, loss of energy or persistent fatigue, feelings of worthlessness, suicidal ideation/attempts and difficulty making decisions.

While prevalence of depression in the general population ranges from 10-25 percent for females and 5-12 percent for males, the lifetime prevalence of depression for those diagnosed with diabetes is as high as 28.5 percent [1, 2]. In fact, recent research has indicated one in four individuals with diabetes suffers from depression, a rate which makes those with diabetes two times more likely to experience symptoms of depression than are their non diabetes counterparts [3]. Not only do those with diabetes report higher depression prevalence rates than

the general population, but these rates appear to be persistent as well. In a study completed by Peyrot and Rubin [4], 34 percent of those with diabetes continued to report depressive symptoms six months after their initial evaluation.

In Appalachia, depression prevalence rates appear to be comparable, if not slightly higher, than the national average. In a study of 187 adults with type 2 diabetes attending outpatient appointments, we have found that 30 percent of participants reported clinically

meaningful depressive symptoms, with 15 percent of participants reporting symptoms of severe depression.

The impact of co-morbid depression for those with diabetes is significant. Depression has been found to be associated with lower adherence to dietary recommendations [5], hyperglycemia [6], diabetes complications including heart disease, retinopathy

See Depression on page 4

In This Issue...

Diabetes and Depression: Research and Practice Considerations in Appalachia	1
Central Ohio Diabetes Association's Outreach Program	2
Central Ohio Diabetes Association's 41st Annual Symposium	2
National Women's Health Week	3
ARHI Diabetes Coalition	3
Partnership Receives Honor	5
Youth and Diabetes	6
Be Smart About Your Heart Control the ABC's of Diabetes	6
Acanthosis Nigricans	7
Useful Websites	8

Central Ohio Diabetes Association 41st Annual Symposium Featured "Prism of Hope"

The Central Ohio Diabetes Association sponsored its 41st annual Diabetes Symposium for health care professionals in October 2004 to promote diabetes awareness and education. More than 180 people attended the symposium held at the Hyatt Regency Columbus.

Following the theme "A Prism of Hope," presenters identified strategies and guidelines for health care practitioners who assist individuals with diabetes in maintaining healthy lifestyles during the two-day event. The group included a wide range of diabetes health care professionals from across the country, who covered some of the cutting edge issues surrounding diabetes and its effects on individuals with the disease.

Symposium sessions included *"The Changing Phases of Diabetes"* presented by Dr. Kwame Osei, M.D., F.A.C.E., F.A.C.P., director of Endocrinology at The Ohio State University College of Medicine and Public Health; Dr. George T. Ho, M.D., director of Research at Mt. Carmel addressed *"Dysfunction In the Sexes"* and William H. Polonsky, Ph.D., C.D.E., a professor in psychiatry at the University of California, San Diego focused on *"Health Beliefs and Diabetes."*

The symposium is designed for health care professionals including physicians, nurses, pharmacists, dietitians, podiatrists, social workers and certified diabetes educators.

Central Ohio Diabetes Association's Outreach Program

To address the growing problem of diabetes among the expanding Hispanic/Latino population in central Ohio, the Central Ohio Diabetes Association, in partnership with the Ohio Hispanic Coalition and the Columbus Health Department, recently began a diabetes outreach project. This project seeks to improve awareness of diabetes among Central Ohio Hispanics/Latinos by educating on different aspects of diabetes, by conducting screenings to detect high blood glucose levels and by following up with one-on-one education with known diabetics and people whose blood glucose levels were above normal at screening events.

The project will build on the previous successes of the Ohio Hispanic Coalition and will provide information and education in Spanish to the Hispanic/Latino community. The three staff members working on the project are bilingual and all presentations, screenings, and one-on-one follow up will be done in Spanish. The project will also expand the resources available to the community through the Central Ohio Diabetes Association's multi cultural resource center which is housed in the Central Ohio Diabetes Association office. It provides information on diabetes related issues not only in Spanish but three other languages as well.

The Central Ohio Diabetes Association will rely on its partners and others to build a strong network in the community. This network will include churches, community groups and businesses. The project will support these partners by offering education and detection services, and by conducting a diabetes education training session for these and other groups that work directly with Hispanics/Latinos. This training will allow for more organiza-

tions to disseminate information about diabetes among the target population. Finally, the project will compile qualitative and quantitative information in order to complete a diabetes-related needs assessment for the central Ohio Hispanic/Latino population and to evaluate program strategies. The information will include socio-demographic information, nutritional and exercise behavioral information and an analysis of the success of the specific project implementation strategies. This will allow the Central Ohio Diabetes Association and others to improve future service delivery to the Hispanic/Latino community.



The project will run through September 2005, and hopes to screen at least 750 Hispanics/Latinos for blood glucose levels and give educational presentations to 500 people. The project is funded by the Columbus Foundation, with in-kind support from participating organizations and others, including the Ohio Department of Health. For more information about the Hispanic/Latino outreach program or any other Central Ohio Diabetes Association service, contact the Central Ohio Diabetes Association through the mail at: 1100 Dennison Ave., Columbus, Ohio 43201, on the Web at www.diabetesohio.org, By e-mail at coda@diabetesohio.org or call (614) 884-4400.



It is important to encourage healthy behaviors early to help young girls become healthy women. Girls must make important choices about lifestyle behaviors including diet, physical activity, coping with stress and tobacco and substance abuse.

National Women's Health Week is a time parents and caregivers can do something special for the young girl or daughter in their life. It can be a time to offer support and encouragement to make good health and lifestyle choices. Some suggestions during National Women's Health Week include:

❁ **Get Moving With Your Daughter-**

Take a walk together after dinner, go for a bike ride or participate in a community walk/run. Staying active together can keep the whole family motivated and healthy.

❁ **Cook With Your Daughter-** Teach her the importance of cooking nutritious ingredients that support growth and good health. Make sure to include fruits, vegetables, whole grains, low fat dairy and meats or meat alternatives. Learn more about a healthy diet at <http://www.4woman.gov/faq/diet.htm>

❁ **De-Stress Your Daughter-** Watch a movie together, grab a book or magazine and go outside to read in the fresh air or take a short trip (walking if possible) to a favorite café for a nutritious treat. It could be used as time well spent to discover what is going on in her life and to share a personal story or experience.

❁ **Tell Your Daughter About**

<http://www.4girls.gov>

This is a Web site developed by the U.S. Department of Health and Human Services Office on Women's Health that provides girls with reliable, current and age-appropriate health information. The site focuses on health topics that respond to adolescent girls' health concerns including body, nutrition, fitness, bullying, peer pressure, self-esteem and other topics in an interactive and user-friendly format.

❁ **Take Your Daughter to Your Preventive Screening-**

Teach her the importance of regular, preventive exams (including blood sugar screening) by setting a good example and making an appointment with your health care provider. Getting regular check ups, preventive screening tests and immunizations are among the most important tasks you can do for yourself. Learn what screening tests and immunizations needed at <http://www.4woman.gov/screeningcharts/screenings-general.pdf>.

❁ **Take Time to Celebrate Your Daughter-**

Make her feel special with words of encouragement and take time to discover and support her interests.

❁ **Teach Your Daughter the Importance of Staying Safe-**

Visit <http://www.4girls.cfm?page=safety/index.htm> and take the safety quizzes with your daughter.

ARHI Diabetes Coalition

The Appalachian Rural Health Institute (ARHI) Diabetes/Endocrine Center has recently established the ARHI Diabetes Coalition. It is a coalition of regional diabetes education programs, health educators and public health advocates dedicated to improving diabetes care and education throughout Ohio and western West Virginia.

The coalition is developing common practice guidelines, treatment protocols and diabetes education materials for the participating programs. Additional projects of the coalition are to develop culturally and literacy specific diabetes materials in a joint project with Jane Kelly, M.D. and the National Diabetes Education Program (NDEP).

It is also developing a regional clinical diabetes database which will be an expansion of the ARHI Diabetes Clinical Database by supplying each participating education program with the Harbor Diabetes Database. The first two programs will be obtained from a grant from the Ohio Department of Health Diabetes Prevention and Control Program. Additional grants have been written to various corporate sponsors. The coalition is also developing a Web site that will host all curricula, practice guidelines, policies and procedures developed by the program. In addition, a patient information site with self-management information and links to other Web sites will be listed. Finally, we hope to provide a forum for public policy advocacy for people with diabetes on a regional, state, and federal level.

Submitted By:
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Depression *continued*

and neuropathy [7] as well as higher rates of functional disability, ambulatory care use and prescription use [5, 8, 9]. Given these facts, it is not surprising health care costs for those with co-morbid depression and diabetes have been found to be 4.5 times higher than non depressed patients [8].

Recommendations for Providers

1. Screen for depression at every visit.
2. Referrals to primary care providers are appropriate.
3. Referrals to mental health providers are appropriate.
4. Discuss the meaning of the referral with the patient.
5. Follow-up with patients at future visits.

Treatment of Depression and Diabetes

Effective treatment options are available for diabetes patients who experience clinically significant depression including antidepressant medications and cognitive behavioral therapy. Before either of these or other treatments can be suggested, however, depression must first be identified.

Depression as the Sixth Vital Sign

Depression screening prior to or during clinical visits is an efficient method to identify depressive symptoms. A simple screening question such as, "Tell me about your mood in the past month," gives permission to patients to report depression symptoms to their diabetes health care provider. Evaluation of mood in the context of hyperglycemia poor adherence, or changes in diabetes complications may reveal underlying depression that may contribute and exacerbate self-care difficulties. Evaluation for symptoms of depression during the previous two weeks will verify a depression syndrome.

A variety of treatment options exist for patients who meet criteria for clinical depression including antidepressant medications prescribed by primary care or diabetes specialty providers; referral to mental health professionals (e.g., psychiatry) for medications and/or psychotherapy (e.g., psychologists, social workers, psychiatric nurses). Antidepressant medications such as nortriptyline, fluoxetine (Prozac) and sertraline (Zoloft) have been shown to be effective in treating depression in patients with type 1 and type 2 diabetes [10-13]. Consideration should be given to the hyperglycemic effects of nortriptyline used at therapeutic doses for depression. Cognitive behavioral therapy has also been demonstrated to be effective in treating depression in patients with type 1 and type 2 diabetes [14], with lowered blood sugar levels observed six months following the completion of therapy. Recent research from our group has shown that patients with diabetes and depression are receptive to diabetes treatment and generally satisfied with the outcomes when such treatment is received. However, rates of routine depression screening by medical providers were low (approximately 25 percent in a community sample of type 2 diabetes participants) [15].

Whether referred to their primary care provider or a mental health professional, patients will benefit from an explanation of the reason for the referral as well as follow-up inquiries at the next visit ("How did it go?"). These simple techniques provide support to patients and validate the importance of depression management as one part of diabetes self-care.

Correlates of Depression in Diabetes

- Poorer adherence to behavioral regimens
- Hyperglycemia
- Worsened diabetes complications
- Increased health care costs

References

1. Anderson, R.J., Freedland, K. E., Clouse, R. E., & Lustman, P. J., *The prevalence of comorbid depression in adults with diabetes*. Diabetes Care, 2001. **24**(6): p. 1069-1078.
2. Association, A.P., *Diagnostic and Statistical Manual IV-TR*. Fourth ed. 2000, Washington, D.C.: American Psychiatric Press, Inc.
3. Anderson, R.J., et al., *The prevalence of comorbid depression in adults with diabetes: a meta-analysis*. Diabetes Care, 2001. **24**(6): p. 1069-78.
4. Peyrot, M., & Rubin, R. R., *Persistence of depressive symptoms in diabetic adults*. Diabetes Care, 1999. **22**(3): p. 448-452.
5. Ciechanowski, P.S., Katon, W. J., & Russo, J. E., *Depression and diabetes: Impact of depressive symptoms on adherence, function, and costs*. Arch Intern Med, 2000. **160**: p. 3278-3285.
6. Lustman, P.J., et al., *Depression and poor glycemic control: a meta-analytic review of the literature*. Diabetes Care, 2000. **23**(7): p. 934-42.
7. de Groot, M., Anderson, R. J., Freedland, K. E., Clouse, R. E., & Lustman, P. J., *Association of depression and diabetes complications: A meta-analysis*. Psychosomatic Medicine, 2001. **63**: p. 619-630.
8. Egede, L.E., Zheng, D., & Simpson, K., *Comorbid depression is associated with increased health care use and expenditures in individuals with diabetes*. Diabetes Care, 2002. **25**(3): p. 464-470.

9. Egede, L.E., *Diabetes, major depression and functional disability among U.S. adults*. *Diabetes Care*, 2004. **27**(2): p. 421-8.
 10. Goodnick, P.J., Kumar, A., Henry, J. H., Buki, V. M., & Goldberg, R. B., *Sertraline in coexisting major depression and diabetes mellitus*. *Psychopharmacol Bull*, 1997. **33**(2): p. 261-264.
 11. Goodnick, P.J., *Use of antidepressants in treatment of comorbid diabetes mellitus and depression as well as in diabetic neuropathy*. *Annals of Clinical Psychiatry*, 2001. **13**(1): p. 31-41.
 12. Lustman, P.J., et al., *Fluoxetine for depression in diabetes: a randomized double-blind placebo-controlled trial*. *Diabetes Care*, 2000. **23**(5): p. 618-23.
 13. Lustman, P.J., et al., *Effects of nortriptyline on depression and glycemic control in diabetes: results of a double-blind, placebo-controlled trial*. *Psychosom Med*, 1997. **59**(3): p. 241-50.
 14. Lustman, P.J., et al., *Cognitive behavior therapy for depression in type 2 diabetes mellitus. A randomized, controlled trial*. *Ann Intern Med*, 1998. **129**(8): p. 613-21.
 15. de Groot, M., Hockman, E., Wagner, J., *Depression in a multi-cultural sample of Diabetes Expo attendees. [Abstract]*. *Diabetes*, 2003. **52**(Suppl 1): p. A411.
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Partnership Receives Honor

During 2004, the Ohio Diabetes Prevention and Control Program (ODPCP) and The Ohio State University Extension Team partnered to educate family and consumer science agents about the Dining with Diabetes curriculum. This curriculum will be presented to those with or at risk for developing diabetes. The goals of the program are to:

- Increase knowledge about healthy food choices.
- Present health versions of familiar foods.
- Provide taste testing of new recipes.
- Provide basic information about diabetes and nutrition.
- Provide networking opportunities for persons affected with or at risk of developing diabetes.
- Increase knowledge about the importance of physical activity.

As a result of the training team's efforts, Cindy Oliveri, Anita Pulay, Lee Ann Johnson (all from the OSU Extension Service) and Nancy D. Schaefer (ODPCP nutritionist) received the first place award at the annual Epsilon Sigma Phi (the cooperative extension professions' organization) awards banquet for team teaching. The program will be offered in sixty of Ohio's counties this year.

Youth and Diabetes

- Resource Guide on the way

The Ohio Department of Health School and Adolescent Health Program and the Diabetes Prevention and Control Program have partnered to provide every school (public, private and parochial) in Ohio with a copy of the National Diabetes Education Program (NDEP) guide: *Helping the Student with Diabetes Succeed – A Guide for School Personnel*.

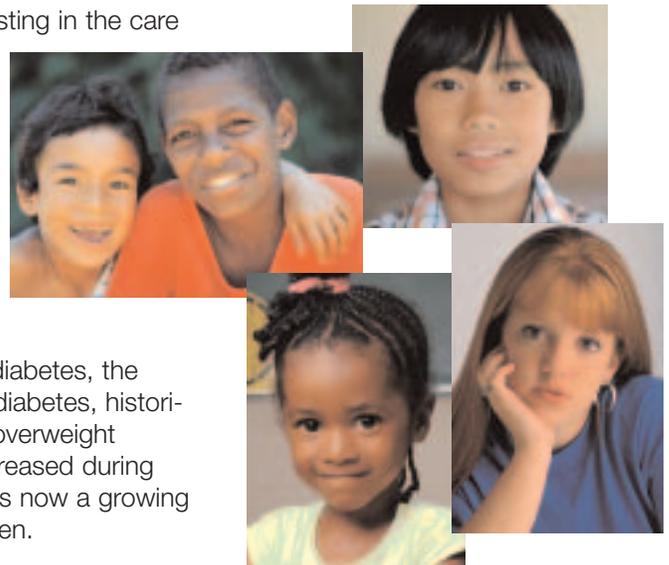
The guide was developed by NDEP, a federally sponsored partnership of the National Institute of Health, the Centers for Disease Control and Prevention and over 200 partner organizations. The National Association of State Boards of Education and the National Association of School Nurses are some of the organizations that helped in the development of this guide.

The manual will be used as a resource guide to help educate school personnel (i.e., nurses, principals, teachers, bus drivers, coaches and etc) about diabetes, how it is treated and how each member of the school staff can be most effective assisting in the care of students with diabetes during the school day.

Diabetes is one of the more common chronic diseases in school – aged children.

In addition to Type 1 diabetes, the prevalence of Type 2 diabetes, historically associated with overweight adults, has greatly increased during the past decade and is now a growing problem among children.

The guide will be distributed early spring 2005. So look for the guide - *Helping the Student with Diabetes Succeed – A Guide for School Personnel*.



Be Smart About Your Heart Control the ABC's of Diabetes

The National Diabetes Education Program (NDEP) campaign, "Be Smart About Your Heart: Control the ABCs of Diabetes," makes people with diabetes aware of their high risk for heart disease and stroke and the steps they can take to lower that risk. A bilingual booklet *Si Tiene Diabetes, Cuida Su Corazon* (If You Have Diabetes, Take Care of Your Heart)



promotes the importance of glucose, blood pressure and cholesterol control

in preventing heart disease in people with diabetes. A detachable wallet card allows patients to track these numbers. This booklet is available online at <http://www.ndep.nih.gov> or by calling (800)-438-5383. The booklet is also available from the Ohio Diabetes Prevention and Control Program. Call 614-728-3775 for more information.

Acanthosis Nigricans



Acanthosis Nigricans is a skin discoloration that signals high insulin levels in the body. Insulin is produced in the pancreas and is important because it helps carry the glucose or sugar to the cells in the body. High insulin levels indicate the body is resisting the insulin being produced. As a result, the pancreas produces more insulin than needed, and through time, can stop producing enough insulin to take the glucose to the cells in the body.

Why is Acanthosis Nigricans Important?

Acanthosis nigricans is important because these markings can identify those who run the risk of developing diabetes in the future or who are currently faced with the disease.

Acanthosis nigricans is also important because of the increasingly alarming rates of people developing type 2 diabetes. Until recently, it was rare children received a diagnosis of type 2 diabetes. However, with the obesity epidemic, children (especially adolescents) are now being diagnosed with type 2 diabetes frequently. Acanthosis nigricans screenings can help identify persons who have high insulin levels and who may be at risk for developing disease. Once identified, the necessary measures to lower the insulin levels and reduce the risk of developing diabetes can be taken. Exercise and proper nutrition will help the body become more sensitive to insulin and lower insulin levels. Similarly, the acanthosis nigricans markers will begin to fade.



Women with a waist measurement of 31" or more and men with a waist measurement of 37" or more are at an increased risk of developing type 2 diabetes and other chronic diseases.

Ohio Diabetes Prevention and Control Program Enhances Web Page

Want a PDF copy of the 2004 ADA Standards of Care, the "Burden of Diabetes in Ohio" monograph or a link to the "Helping Students with Diabetes Succeed in School" manual? If so, go to the newly enhanced ODPCP Web page at http://www.odh.ohio.gov/ODH_Programs/DIABETE/diab1.htm. A posting of all archived issues of the newsletter are included as well.

Useful Web site addresses

- American Association of Diabetes Educators
<http://www.aadenet.org>
- American Diabetes Association
<http://www.diabetes.org>
- Centers for Disease Control and Prevention
<http://www.cdc.gov/diabetes>
<http://www.cdc.gov/nchs>



- Centers for Medicare and Medicaid Services
<http://cms.hhs.gov>
- Department of Veterans Affairs
<http://www.va.gov/health/diabetes/>
- Health Resources and Services Administration
<http://www.hrsa.gov>
- Indian Health Service
<http://www.ihs.gov>
- Juvenile Diabetes Research Foundation International
<http://www.jdrf.org>
- National Diabetes Education Program, a joint program of NIH and CDC
<http://www.ndep.nih.gov>
<http://www.cdc.gov/team-ndep>
<http://www.cdc.gov/diabetes>

- National Institute of Diabetes and Digestive and Kidney Disease of the National Institutes of Health
<http://www.niddk.nih.gov>
- U.S. Department of Health and Human Services, Office of Minority Health
<http://www.omhrc.gov>

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If you would like to contribute an article for the next newsletter or if you are aware of other upcoming educational opportunities and internet resources, please send us your ideas.

****DEADLINE - for submitting news for the Spring Newsletter is: May 1, 2005**

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