Building Knowledge

Participating in research related to your personal practice can be incredibly rewarding and can benefit patient care as well as help illustrate the value of clinical Registered Dietitian/Nutritionist (RDN) services. This can potentially increase the demand for services, provide job security, and afford new opportunities. This article will attempt to offer insight on the types of research performed by RDN, theories utilized and offer resources for starting clinical research in a practice.

RDN Research

Clinical research by RDNs in behavioral health may be interdisciplinary, involving physicians, nursing, psychologists, physical/occupational/speech therapists, and others. For example, interdisciplinary teams using a mixture of strategies for weight management such as nutrition, cognitive therapy and activity therapy have been successful. Non-clinical research by RDNs could include areas such as systems for delivery of care, education of practitioners, and public policies that affect practice.

Knowledge used by RDNs may be profession-specific knowledge or shared knowledge used by other health care professionals (Wertheimer 1989). That knowledge can be abstract.

“Clinical” – Relating to the observation and treatment of actual patients rather than theoretical or laboratory studies.

Science

Research/Evidence re: Which are the most commonly used Diagnostic and Interventions codes used by Clinical Dietitians?

Theories

Research re: Are there Clinical Dietetic-specific theories? What are they?

Paradigms

Research re: Are Clinical Dietitians in agreement concerning certain beliefs and values? The effect of nutrients on mental health? Appropriate professional sponsors?

Metaparadigm

The Metaparadigm of Clinical Dietetics: Seven global concerns of Clinical Dietetics*^  
Reference | Human | Practitioner | Practitioner | Client | Client | Nutraceuticals |
Person | Condition | Actions/Attitudes | Environment | Actions/Attitudes | Environment |

Definitions of the seven domains of concern can be found at www.RuthLeyseWallace.com
^ The domains of The Metaparadigm of Nursing are Person, Environment, Health, and Nursing (Fawcett, 1984).
**From the Chair**

Sharon Lemons, MS, RDN, CSP, LD, FAND

It always amazes me how fast time flies when you are having fun. Let me tell you, serving as Chair for Behavioral Health Nutrition (BHN) DPG has been a fun experience. Volunteering has always been important to me, but this position has certainly brought me into contact with some amazing and fun people. While having fun has been a great perk I would have to say the greatest perk of this position is the amazing amount of knowledge I have gained. Since BHN covers four practice areas (Addictions, Eating Disorders, Intellectual and Developmental Disabilities, and Mental Health) all of our wonderful volunteers come into their positions with a different knowledge set. Although each of these areas has some overlap, we tend to have more knowledge about one particular area than others. I, personally, have learned more about the other practice areas in the last six months than I have throughout the rest of my career. It has definitely been an eye opening journey that will forever change the way I practice.

While I’m having fun and learning even more, Behavioral Health Nutrition is always striving to provide the best benefits you can find in any of the Dietary Practice Groups. One of the greatest benefits BHN DPG provides our members is webinars, but the last few months we have experienced some challenges. I am glad to report we have worked through those challenges and have learned how to fix those problems thanks to assistance from the Professional Development Department of the Academy. This next quarter will include three webinars. Lee Shelly Wallace, a past Chair of BHN, will be repeating her presentation from FNCE® 2014 on how individuals learn; in May, I will be presenting on billing and coding; and one of our sponsors, Thrive, will be presenting on nutrition needs of the cognitively impaired geriatric patient. BHN is incredibly fortunate to have so many talented dietitians with great information to share. I hope you mark your calendars to participate.

If you saw us at FNCE® 2014, I hope you picked up one of the recently released Fact Sheets. These are also available on our website. Our team is working hard to provide more Fact Sheets on additional topics. Just imagine you are sitting with a family that is facing a syndrome you have never heard of before, but you know there are Fact Sheets on a variety of syndromes on the BHN website. You can pull up your electronic device and find science based, peer reviewed information right at your fingertips. This is our hope for the future of these Fact Sheets. While we know providing good reliable information is going to be a long-term project, we are committed to be that resource for our members. To provide continued support, we have recruited a Fact Sheet Editor, Ruth Roberts, LPC, LDN, RDN. Ruth and her team will be working diligently to make this a reality. If you have expertise in an area you feel needs to be addressed, please contact us. We will need a lot of writers and reviewers.

It always seems to me that as soon as we finish FNCE® for one year it is time to plan again. Actually that is because we do start planning the next FNCE® while we are attending the current one. FNCE® 2015 holds some exciting events for BHN. Please watch for announcements to be coming soon! In the meantime mark your calendar to attend.

In Good Health,
Sharon Lemons, MS, RDN, CSP, LD, FAND
Clinical Practice-Based Research: Can I Do That? continued from page 1

to concrete. Practice-based research can add to profession-specific, generalizable knowledge.

RDN research may be theory- and/or hypothesis-driven, and should be science-based. Theories inform hypotheses, which anticipate or explain what is expected or was observed during the use of the methods defined in the research. This could include the actions/behavior, perspectives, beliefs, or values of clients, dietitians, or other health professionals. Examples of theories used by RDNs include: Behavior Change Theory (Spahns, 2010), Social Cognitive Theory (Chapman-Novakofski, 1995), Stages of Change Theory (Greene, 1999), Theory of Reasoned Action (Brewer, 1999) (Finck, J. 2008) and Self-Efficacy & Locus of Control Theory. (AbuSahba, 1997)

Research by RDNs may involve abstract concepts such as beliefs, values, or mental status concepts for which validated instruments for measuring are available. (see also Table 1). Concrete topics in clinical research include outcome measures such as the presence/absence/change in a factor, a change in laboratory values, test scores, and anthropological measures. Research may be descriptive (frequencies), number of case studies, observational (cohort, cross-sectional, and case-control studies), systematic reviews of literature, a meta-analysis, or experimental.

Experimental research such as depriving subjects of a nutrient to determine the physical or mental consequences, or the dose needed to elicit an adverse or toxic response would be unethical. Research involving behavioral health patients must exercise care surrounding current ethical health care issues such as the ability of subjects to give informed consent, equal access to care, and privacy of an individual’s health care data, as well as traditional ethical issues in psychiatry such as the principle of autonomy and forensics (right of freedom of the individual vs. the safety of society). (Robertson 2007)

Resources Available

A wealth of resources are currently available to assist with implementing clinical research into daily practice. Consider the following:

Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII)

The new web application platform of Academy of Nutrition and Dietetics Health Informatics Infrastructure (ANDHII) is now available for creating a data base of de-identified data for potential research or quality and performance improvement. Online training and use of the ANDHII system is free to members (http://www.andhii.org). RDNs may enter data on individual patients and create combined reports for future research or other data applications. (Murphy and Steiber, 2015). A small, randomized controlled study on the feasibility of ANDHII in practice was conducted by the Academy. Outcomes found initial time per patient increased on average by 15 minutes, however, once familiar with the methods, overall time per patient increased by only 3 minutes. More information about the study is available in this abstract from FNCE 2015: http://www.andjrn.org/article/S2212-2672%2814%2900764-3/fulltext. The ANDHII database, structured by the Nutrition Care Process, will give the BHN DPG the ability to describe the clinical practice of BHN members. Imagine the data if 100 clinicians entered data from five clients each!

Dietetic Practice-Based Research Network (DPBRN)

The Dietetic Practice-Based Research Network (DPBRN) of the Academy of Nutrition and Dietetics (AND) is composed of dietitians employed throughout the United States who serve as an advisory group that 1) supports, promotes, and advocates for research in practice-based settings, 2) selects research studies to be completed, 3) helps collect data, and 4) disseminates the results. Past research experience is not required since all materials, as well as technical support, are provided. Research is designed to minimize the patient and provider burden. The focus is on research that can be incorporated into daily practice. For more information on DPBRN see http://www.eatright.org/members/DPBRN/ or see “Blending practice and research: Practice-based research networks an opportunity for dietetics professionals.” (Trostler and Meyers, 2003)

Understanding the Basics of Research - an Online Toolkit

The online Research Toolkit, developed by the Research Committee of The Academy of Nutrition and Dietetics, is available free of charge to AND members at https://www.adaevidencelibrary.com/store.cfm?category=13&auth=1. The toolkit includes sections to help with the following and more: 1) Determining the first step in a research project, 2) evaluating whether the study design is suitable to answer the research question and test the hypothesis (2.5 CPEs), 4) interpreting statistics and determining whether they are appropriately utilized in the study (3 CPEs), and 5) writing a research grant.

Other Resources

• The book Research, Successful Approaches, 3rd ed. by Elaine R. Monsen, PhD, RD and Linda Van Horn, PhD, RD, which is available at https://www.eatright.org/Shop/Product.aspx?id=4963

• Example of a Delphi study to define levels of dietetic practice (Ayers et al 2012) http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3652246/

Contribute to Clinical Dietetic Knowledge

If you are interested in participating in future BHN research projects to describe clinical dietetic practice of RDNs who work in mental health, or define the paradigm of RDNs in BHN, please contact the Mental Health Resource Professional, Ruth Leyse-Wallace PhD, RD at RthLys@cox.net.

Table 1. Measurable Scientific Concepts Describing Mental State:

<table>
<thead>
<tr>
<th>Mood</th>
<th>Arousal</th>
<th>Activation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigilance</td>
<td>Attention</td>
<td>Sleep</td>
</tr>
<tr>
<td>Motivation</td>
<td>Effort</td>
<td>Perception</td>
</tr>
<tr>
<td>Memory</td>
<td>Intelligence</td>
<td></td>
</tr>
</tbody>
</table>

(Westenhofer, 2004)
Clinical Practice-Based Research: Can I Do That?
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References
Nominations Committee is pleased to announce BHN Election Results

Please welcome the incoming volunteers in our Executive Committee! To get to know them a little better, BHN asked them a few questions:

**BHN Chair:**
**Adrien Paczosa, RD, LD, CEDRD**
Adrien writes, “I sent an email to the EML asking how I could get involved. The next thing I knew, Charlotte Caperton-Kilburn was calling me up asking if I could be the PR chair. From there I have just fallen in love with this amazing group so full of passion and determination.”

About her most rewarding or challenging or funny experience she says, “Being a behavioral dietitian I have so many stories that could fit into the realm of funny, challenging and rewarding. From witnessing amazing changes in a client’s relationship with food, to losing a client to their mental health battle, and yet the most rewarding situation of being a behavioral health dietitian I continue to come back to, being an active BHN member. I have found people all across the country that I can call up to share joy and success of clients or to cry with when the struggles are real. This DPG has been a gift to my heart and to my clients because of the amazing people I have and will continue to meet.”

Adrien spends her spare time with her new husband, step kids and French bulldog, Maybelline. Her family is active in power lifting competitions. Adrien also enjoys social media channels and posting about food, nutrition and mental health.

**Newly Elected! Chair-Elect:**
**Diane Spear, MS, RD, LD.**
Diane says her involvement with BHN began when she started her career in IDD. “There were few resources available and BHN provided great networking and learning opportunities. My first volunteer opportunity was in 1990 assisting with the development of an IDD Toolbox. We are grateful to Diane for her many years of service as our Newsletter Editor.”

The most rewarding and challenging experience for Diane has been working with people who have complex medical, physical, and nutritional needs in a true interdisciplinary team approach. “The knowledge and skills gained by working closely with OT, PT, SLP and Nursing professionals are phenomenal, not to mention the improved quality of life for the individual and their family.”

Her spare time is filled with grandchildren, gardening, volunteering in her community, and an occasional day to herself when she can sit in the porch swing with a cup of tea and a good book.

**Past Chair:**
**Sharon Lemons, MS, RDN, CSP, FAND**
Sharon got involved with BHN as a student, when BHN was DDPD (Dietitians in Developmental and Psychiatric Disorders). “I was looking for research based information on autism because I have two children who have autism. When I had finished my internship and email came across the EML asking for someone to volunteer to be a website coordinator, I responded with a query as to whether DDPD would consider someone that had finished internship but did not have their license yet. I was graciously accepted as the web coordinator.”

She feels the most rewarding thing about her practice is helping individuals with Intellectual and Developmental Disabilities and their families work through the challenges of eating or feeding. “I have worked Early Childhood Intervention and adults with IDD. The challenges they face are very similar. It seems to just be the size of their body that has changed. I especially enjoy helping wean a child off tube feedings and seeing the change it makes in their family as they gain the independence of self-feeding.”

Sharon spends her free time with her husband and three sons. They enjoy being outside and are in the process of planting a vegetable garden for the first time. The family is working on improving physical fitness with more exercise.

Sharon also enjoys doing presentations on nutrition and autism. She states: “We can only help those that are going down the path we have already trod by sharing our experiences.”

**Newly Elected! Treasurer:**
**Kathryn Russell, MS, RDN**
Kathy has extensive experience as a Director of Nutrition in a long term care hospital for the chronically mentally ill. She says “The most rewarding is when the patients come up and tell me how happy they are with some small thing I have implemented. It doesn’t have to be much, but every small thing makes such a difference to them.”

Kathy had been a member of the BHN (formerly known as the DDPD) for many years. When a past Membership Chair had to step down mid-term Kathy was asked if she would be interested in filling in. “Sure, why not.” she said. “That was the beginning of a wonderful experience!”

Spare time? “I enjoy working with my son’s high school marching band booster organization. Reading is a passion. In the winter months I enjoy crocheting – especially baby blankets! Long walks with my husband and dog and enjoying a nice cup of hot chocolate or iced tea on the patio on summer evenings.”

**Newly Elected! Delegate:**
**Cynthia L Burke, MS RD LDN FAND**
Cynthia has extensive experience with the Pennsylvania Dietetic Association. She has been actively involved with service in many roles from Nominating Chair to President.

Most recently she has held the position of Pennsylvania Affiliate Delegate, House of Delegates for the Academy. She is active as an advocate, having testified at the Commonwealth of Pennsylvania Democratic Policy Committee Hearing on MNT and the Budget Hearing for Mental Retardation and Developmental Disabilities. She has done numerous presentations over the past 20 years on Nutrition related issues to a variety of audiences.

We look forward to hearing her reports in our newsletter.

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Newly Elected!
Nominating Chair-Elect:
Rachel Press, RD

When asked how she got involved with BHN Rachel says, “Adrien Paczosa (our new Chair) introduced me to the awesomeness of BHN.”

Rachel works with the homeless population in Austin. “It is rewarding to show individuals how to overcome those barriers while better fueling their bodies.”

Rachel enjoys spending time with her family and friends, reading, and exploring Austin.

Newly Appointed!
Membership Director:
Lester Rosenswig, MS, RD, CDN

Les got involved in the BHN because they had a very active list serve. “Many would ask questions and were generous to share insights and documents as was I. Before you knew it, I was sharing information, writing articles, joining the team to update the SOP/SOPP for individuals with IDD. I became a resource professional and then Treasurer. It has been a great group of people and the behavior aspects of food and eating intrigues me.”

Like many of our members, Les has extensive and varied nutrition services experience. He originally worked in the Elder Nutrition Program on the State and National level. He then moved to the ARC program that encouraged “aging in place” for consumers living in group homes and supervised apartments. He was able to use his previous experience to collaborate with a full team of case workers and clinicians to provide the best environment possible for participants. It has been a great group of people and the behavior aspects of food and eating intrigues me.”

Newly Appointed!
Addictions Resource Professional:
Renee Hoffinger, MHSE, RD

Renee first became involved with BHN when she wrote an article for the newsletter. Then she helped put together the first SOPP that was published in 2006. She has helped out with many other projects and services related to Addictions since then. We asked her about her most rewarding experiences. “My most rewarding experiences are when I feel like I’ve really made a difference in someone’s life” She tells a story about working in a rehab program back in the mid-90’s where she and an OT started a cooking program. “The participants file in and we announce that we will be making vegetarian chili. The patients start in with the refrain ‘Where’s the meat?’ My partner says something like ‘It’s good to try something new.’ Within minutes one of our more hostile patients rolls in with a huge boom box at full volume, Country Western music saying, ‘It’s good to try something new.’ On the other hand, despite initial reluctance and hostility, resistance usually melted and there would be many patients who ‘got it,’ either found their passion in cooking and went on to food-based careers, realized that healthy food could free them from lifetime ailments, or just appreciated and relaxed into the camaraderie of cooking together.”

Renee’s leisure activities include getting outdoors as much as possible, hiking, biking, kayaking, and photography.

We are also pleased to announce that Eugenia Goh, MS will be our new Website Coordinator.

Newly elected and appointed BHN officers will assume their duties June 1st, 2015. Please welcome our volunteers and take the opportunity to get to know them further. We look forward to hearing about your experiences as members and invite you to become as active a participant as you would like in the Behavioral Health DPG.

Thank you!
Terry Anderson Girard, MS, RD, LDN
Nominating Committee

Preceptors make a difference in the lives of students who are learning to become registered dietitian nutritionist. We thank them for the service!

We invite you to learn more.
Student Corner:
“Namaste”: Yoga as an Adjunct Therapy for Behavioral Health across a Spectrum
Valerie Della Longa and Natasha Eziquiel-Shriro

The word “yoga” derives from the Sanskrit term meaning to “yoke” or “join” the body, mind, and spirit to achieve well-being.1 Originating in traditional Indian philosophy, yoga practice is centered on the “eight-fold path” to awareness and enlightenment, which emphasizes precepts of integrity, self discipline, body postures, breathing exercises, sensory awareness, concentration, meditation, and spiritual transcendence or inner peace. Yoga styles vary widely, ranging from gentle Hatha yoga, which focuses on separate physical postures, and Vinyasa with continuous flow between postures, to the slow and precise Iyengar that is often practiced with props, chairs or other supports.

According to the NIH’s National Center for Complementary and Integrative Health (NCCIH, formerly NCCAM), over 13 million US adults practice yoga each year, making it one of the preferred complementary and integrative health practices used in the United States.2 Yoga’s rising popularity has been met with research into its benefits and potential applications. Lately, yoga is gaining worldwide recognition for its ability to aid in the management of eating disorders, addiction, and mental illness.2,3 Unlike medical treatments, yoga has few negative side effects or contraindications, yet offers a therapeutic way of cultivating a more positive relationship between the mind, body and spirit.

Yoga’s Stress Reducing Effect on the Body

The numerous languages of yoga can translate into a means of physical activity, imparting increased strength and flexibility, opportunities for meditation or prayer, and stress reduction. Yoga encourages controlled breathing and encourages one to focus on the present moment, clearing the mind of mental chatter and finding relaxation.

Several physiological mechanisms support the role that yoga plays in stress reduction. Through deep breathing, yoga inhibits the “fight or flight” response and stimulates the parasympathetic nervous system. After practicing yoga, breathing, heart rate, blood pressure, and cortisol levels all decrease while blood flow to vital organs increases. Furthermore, yoga may lower dopamine and norepinephrine; increase neurotransmitters such as oxytocin, GABA, glutamate, serotonin and acetylcholine; and improve immune function. Overall, yoga can decrease depression and anxiety, while increasing positive mood, cognition, attention, and quality of sleep.4,5

Yoga may have a greater benefit over aerobic exercise or other relaxation techniques in those with depression and anxiety.6 Stress reduction through yoga is associated with improvements in quality of life, as well as social and occupational functioning for those with major psychiatric disorders.7,8,9,10 This benefit is also seen in individuals with eating disorders.

Yoga Therapy for Treatment of Eating Disorders

Treatment of eating disorders (ED) typically involves a team approach involving a physician, RDN, and psychologist. However, yoga has recently gained popularity as an adjunct therapy for ED. The first two precepts of yoga – Yama, or integrity, and Niyama, or self discipline – which deal with the attitude people have towards themselves and others, particularly complement treatment of eating disorders.11

Research findings suggest that yoga improves body image and body awareness while decreasing disordered eating. One study found that women who practiced iyengar or Ashtanga yoga reported significantly greater body awareness and satisfaction and less self-objectification than those who participated in aerobic or no exercise. Furthermore, women who participated in a yoga treatment program for binge eating stated that yoga helped them to cultivate more present-moment awareness and self-acceptance, which in turn encouraged a healthier connection to food.12

More and more RDs are incorporating yoga teachings into their nutrition practices. Yoga instructors who undergo a 200 hour training certification course through the Yoga Alliance are educated in the areas of Asanas, principles of alignment, anatomy and physiology, and yoga philosophy, to name a few.11 RDs who are also Registered Yoga Instructors may implement their yoga teachings through nutritional counseling. Some even conduct private yoga lessons with their clients. RDs working in the field of disordered eating may find incorporating the principles of yoga particularly beneficial while trying to implement behavior change techniques. They can utilize the complementary principles of yoga when teaching clients about mindful eating, positive body image, and increased self-awareness.13

Yoga may provide an alternative to rigorous physical activity, lower anxiety, and improve one’s relationship with food. Another clinical study concluded that adolescents with ED who received weekly yoga classes showed a significant decrease in symptoms such as food preoccupation, compared with a group that did not practice any yoga.12 Embracing the disciplines and attitudes of yoga such as self-awareness, mindfulness, and letting go of old attachments, can play a vital role in rectifying one’s relationship with food and intuitive eating, thus aiding along the road to recovery.

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Yoga, Mental Health, and Mood Disorders

Research on the impact of yoga on other mental health disorders has had varying results, yet a number of systematic reviews have shown yoga’s impact to be positive. Table 1 highlights several recent reviews and select findings.

Yoga appears to be an effective add-on treatment for patients with mental health disorders, although further studies should be conducted to fully understand the mechanistic principles behind the efficacy of yoga therapy. In cases where addiction is also present, and self-efficacy is critical, evidence suggests

Incorporating Yoga into Practice

Some tips for including yoga in your work with clients and communities:

• Research yoga in your area, and look for instructors trained to meet the needs of your target populations so that you may refer clients out, or you may choose to invite them to teach a class at your facility, community-based site or private practice. Since an integrated yoga practice, which includes both mental and physical aspects, is important to producing noticeable effects for behavioral health, look for yoga classes that include meditation, breath work, or other mind-body elements.

• To become a yoga therapist, certified yoga instructors must undergo training accredited by an entity such as the International Association of Yoga Therapists. It’s essential to practice yoga regularly prior to becoming a certified instructor and therapist, so explore different styles and find the best fit for you.

• Yoga can be integrated directly into any practice setting – if you work for you.

Table 1

<table>
<thead>
<tr>
<th>Authors</th>
<th>Topic</th>
<th>Method</th>
<th>Select Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skowronek et al. (2014)</td>
<td>Anxiety and depression</td>
<td>Analysis of three systematic reviews</td>
<td>Yoga produced overall reductions in symptoms between 12% and 76%, with an average of 39% net reduction of symptoms across measures.</td>
</tr>
<tr>
<td>Cramer et al. (2013)</td>
<td>Major psychiatric disorders</td>
<td>Meta-analysis of 12 RCTs</td>
<td>Yoga can safely and effectively counter the increased risk of weight gain, cardiovascular risk, and other metabolic side effects due to psychopharmacologic interventions for patients with severe mental illness.</td>
</tr>
<tr>
<td>Balasubramaniam et al. (2013)</td>
<td>Depression, anxiety, schizophrenia, cognition and attention</td>
<td>Meta-analysis of 16 randomized controlled trials</td>
<td>Grade B evidence for the acute benefit of yoga for depression, adjunct for schizophrenia, and childhood ADHD. Grade C evidence for sleep issues. RCTs on cognitive disorders had mixed results.</td>
</tr>
<tr>
<td>da Silva et al. (2009)</td>
<td>Mood disorders</td>
<td>Review of 17 studies, including RCTs and non-randomized studies</td>
<td>Yoga may be as good as medication, if not superior, for some subgroups of patients suffering from mild-to-moderate major depression, dysthymia, situation-specific anxiety, and mood symptoms related to other medical illnesses.</td>
</tr>
</tbody>
</table>

About the Authors:

Valerie Della Longa is a senior Nutritional Sciences major at Texas A&M University. Upon graduation she plans on obtaining her Masters Degree in Public Health and completing a Dietetic Internship to become a Registered Dietitian Nutritionist. Valerie is interested in treating clients with eating disorders or working in food service. She is an active member of the Behavioral Health Nutrition DPG, Vegetarian Nutrition DPG, and Food and Culinary Professionals DPG. Valerie can be reached at vdellalonga@tamu.edu.

Natasha Eziquiel-Shriro, BA, currently attends CUNY-Hunter College’s School of Public Health in New York.

References: (2009), (2013), (2014)
“Namaste”: Yoga as an Adjunct Therapy for Behavioral Health...

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City, and expects to complete her MS in Nutrition in the Spring of 2015. She is an active member of both the BHN and DIFM DPGs. Natasha can be reached at NatashaES@gmail.com.

References


In Search of Evidence

New Focus on Down Syndrome Research

Diane Spear MS, RD, LD

As people with Down syndrome live longer than ever before, the National Institutes of Health is looking to reshape its efforts related to the chromosomal disorder.

The federal agency is tweaking its Down syndrome research priorities and adding a new focus on life’s later years and associated conditions.

The changes come in the first-ever update to the NIH’s Down Syndrome Research Plan. Originally issued in 2007, the revised plan was released December 2014.

With statistics showing that life expectancy for people with Down syndrome has increased fourfold since 1960, the update includes a new section with goals related to aging with Down syndrome.

Additional areas of emphasis include understanding the progression of Down syndrome, options for treatment and management as well as objectives related to conditions like Alzheimer’s disease, congenital heart disease, hearing and vision problems, gastrointestinal problems, thyroid dysfunction and immune disorders that often co-occur.

This 2014 revision takes into account extensive input from the Down syndrome community, including researchers, healthcare providers, constituency organizations, and individuals with Down syndrome and their families.

Nutrition-related comments contributed to the NIH research plan on Down syndrome include:

- Include research on the gastrointestinal structure and functional defects, and Type 1 diabetes, in people with Down syndrome
- Explore protective factors for age-related dementia, including reduction in cholesterol, low-fat diets, and nutritional supplements
- Include studies on cholesterol, weight control, and when to begin the use of statins
- Effective interventions and educational strategies should include weight management and exercise
- Include research on obesity in individuals with Down syndrome
- Study the impact of cholesterol, sleep issues, and epilepsy


About the Author

Diane Spear MS, RD, LD is a Registered Dietitian with the Oklahoma Department of Human Services/Developmental Disabilities Services Division with 30 years of experience in nutrition for consumers with Intellectual and Developmental Disabilities. She is an active member of BHN serving currently as the Membership Chair, is the Past Newsletter Editor and recently elected BHN Chair Elect for the 2015-2016 Board of Directors.
Dietitians working in mental health are a versatile group in an exciting growth area in nutrition! The “Mental Health” practice area of BHN includes psychiatric conditions, issues and topics of behavioral health not included in Eating Disorders (ED), Intellectual/Developmental Disabilities (IDD) and Addictions. Dual diagnoses may also be included. Often RDNs who practice in the area of mental health are the only RDN in a facility, are in private practice, or serve as a consultant. In some positions RDN responsibilities combine aspects of administrative dietetics with clinical services.

RDNs in mental health are involved in extremely interesting case; practice overtly includes both the physical and psychological aspects of the human condition. Presently there is exponential growth in research and literature linking nutritional status and nutrients to psychological function, the brain and the mind. One consequence is more information on which to keep current, plus more interest and questions from colleagues and patients.

Following are some ideas for your consideration:

1. Join the Mental Health Resource Network (MHRN). This resource network of BHN members can serve as an avenue of communication and support for RDNs who practice in mental health. Experienced RDNs and RDNs new to this area of dietetics practice can grow, contribute, and share via this networking group. Share references or questions of professional interest with a short summary of relevant points. If you would like to be included in this network, send me your email address: rthlys@cox.net.

2. Contribute to a description of practice in mental health dietetics:
   2- A. Create a list of Nutrition Care Process Terms (found at http://ncpt.webauthorm.com) used by RDNs in mental health. Knowing and using the relevant NCP terms, RDNs in mental health may contribute to future research using the new ANDHII system that is built to collect outcomes of nutrition care using the NCP. Especially interesting might be use of some of the following terms found in the eNCPT:

   - CH 2.1.12 Client/Family Medical/Health History – Psychological
   - FH 1.4.3.1 Total caffeine intake
   - FH 3.1.1 Prescription medication use
   - FH 4.2.13 Emotions
     - Eating habits and intake affected by depression, as evidenced by: (comments, reported diet, etc...)  
   - FH 7.2.9  Mini Mental State Exam Score
   - PD 1.1.7 Nutrition-focused physical findings: nerves and cognition (specify) ____
   - NB 2.5 Poor Nutrition Quality of Life
   - NI 5.____ inadequate or excessive intake of

   * Note: please use the codes for reference purpose only. They are subject to change and are not to be used in documentation.

   Keep a record for a week or month of NCP Terms you use and how many times you use each one. Send me the list along with your practice site and the time interval. I will integrate lists without identifying the source.

   Example:
   Jane Doe, RDN – Private practice and monthly Consultant at clinic/hospital in City, State during week of mo/day/yr
   10 - FH1.4.3.1 Total Caffeine Intake
   2 - NB 2.5 Poor Nutrition Quality of Life
   14 - NC 3.3 Overweight/obesity
   5 - NC 2.2 Altered Nutrition-Related Laboratory Values (specify)________

   2- B. Contribute to a collection of de-identified interesting case studies. I will send details upon request.

3. Send suggestions regarding a future BHN recommendation for a “Mental Health Nutritional Assessment” lab panel please share your ideas. Such a project could be an interdisciplinary undertaking.

   If you have other ideas, interests, questions, etc. I would love to hear from you at rthlys@cox.net.

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**BHN Member Spotlight!**

**Ruth Leyse-Wallace PhD, RD**

**BHN DPG Mental Health Resource Professional**

Dietitians working in mental health are a versatile group in an exciting growth area in nutrition! The “Mental Health” practice area of BHN includes psychiatric conditions, issues and topics of behavioral health not included in Eating Disorders (ED), Intellectual/Developmental Disabilities (IDD) and Addictions. Dual diagnoses may also be included. Often RDNs who practice in the area of mental health are the only RDN in a facility, are in private practice, or serve as a consultant. In some positions RDN responsibilities combine aspects of administrative dietetics with clinical services.

RDNs in mental health are involved in extremely interesting case; practice overtly includes both the physical and psychological aspects of the human condition. Presently there is exponential growth in research and literature linking nutritional status and nutrients to psychological function, the brain and the mind. One consequence is more information on which to keep current, plus more interest and questions from colleagues and patients.

Following are some ideas for your consideration:

1. Join the Mental Health Resource Network (MHRN). This resource network of BHN members can serve as an avenue of communication and support for RDNs who practice in mental health. Experienced RDNs and RDNs new to this area of dietetics practice can grow, contribute, and share via this networking group. Share references or questions of professional interest with a short summary of relevant points. If you would like to be included in this network, send me your email address: rthlys@cox.net.

2. Contribute to a description of practice in mental health dietetics:
   2- A. Create a list of Nutrition Care Process Terms (found at http://ncpt.webauthorm.com) used by RDNs in mental health. Knowing and using the relevant NCP terms, RDNs in mental health may contribute to future research using the new ANDHII system that is built to collect outcomes of nutrition care using the NCP. Especially interesting might be use of some of the following terms found in the eNCPT:

   - CH 2.1.12 Client/Family Medical/Health History – Psychological
   - FH 1.4.3.1 Total caffeine intake
   - FH 3.1.1 Prescription medication use
   - FH 4.2.13 Emotions
     - Eating habits and intake affected by depression, as evidenced by: (comments, reported diet, etc...)  
   - FH 7.2.9  Mini Mental State Exam Score
   - PD 1.1.7 Nutrition-focused physical findings: nerves and cognition (specify) ____
   - NB 2.5 Poor Nutrition Quality of Life
   - NI 5.____ inadequate or excessive intake of

   * Note: please use the codes for reference purpose only. They are subject to change and are not to be used in documentation.

   Keep a record for a week or month of NCP Terms you use and how many times you use each one. Send me the list along with your practice site and the time interval. I will integrate lists without identifying the source.

   Example:
   Jane Doe, RDN – Private practice and monthly Consultant at clinic/hospital in City, State during week of mo/day/yr
   10 - FH1.4.3.1 Total Caffeine Intake
   2 - NB 2.5 Poor Nutrition Quality of Life
   14 - NC 3.3 Overweight/obesity
   5 - NC 2.2 Altered Nutrition-Related Laboratory Values (specify)________

   2- B. Contribute to a collection of de-identified interesting case studies. I will send details upon request.

3. Send suggestions regarding a future BHN recommendation for a “Mental Health Nutritional Assessment” lab panel please share your ideas. Such a project could be an interdisciplinary undertaking.

   If you have other ideas, interests, questions, etc. I would love to hear from you at rthlys@cox.net.

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**Behavioral Health Nutrition Annual Report**

**Behavioral Health Nutrition Annual Report**

for June 1, 2013- May 31, 2014 is now available online at:

Behavioral Health Nutrition DPG is an inspiring group concerned with optimizing the physical and cognitive health of those we serve. We seek to provide top resources and supports which empower our members to be leaders in behavioral health nutrition.

We have a lot of good things in store for our members in 2015-2016. BHN is your practice group, so get involved. If you want to develop your leadership skills, meet people, or learn how BHN operates, you can volunteer to work with us on a project or committee.

### BHN Committees and Projects

<table>
<thead>
<tr>
<th>Committees and Projects</th>
<th>Contact Person</th>
</tr>
</thead>
<tbody>
<tr>
<td>Student Committee (Mentor/mentee Program; Fact Sheets; Articles; Social Media events)</td>
<td>Emily Conner <a href="mailto:studentliaisoncommitteechair@bhndpg.org">studentliaisoncommitteechair@bhndpg.org</a></td>
</tr>
<tr>
<td>Sponsorship (Event Planning, Funding)</td>
<td>Adrien Paczosa, RD LD <a href="mailto:chairelect@bhndpg.org">chairelect@bhndpg.org</a></td>
</tr>
<tr>
<td>Policy Initiatives and Advocacy</td>
<td><a href="mailto:policyandadvocacyleader@bhndpg.org">policyandadvocacyleader@bhndpg.org</a></td>
</tr>
<tr>
<td>Social Media (Facebook, Pinterest, Twitter, EML)</td>
<td>Alixandra Fenton <a href="mailto:socialmediacoordinator@bhndpg.org">socialmediacoordinator@bhndpg.org</a></td>
</tr>
<tr>
<td>Webinars (Presenter, Planner, Manager)</td>
<td>Sharon Lemons, MS RD CSP <a href="mailto:chair@bhndpg.org">chair@bhndpg.org</a></td>
</tr>
<tr>
<td>Website (Resource Page, Member Store)</td>
<td>Jacqueline Larson, MS RDN <a href="mailto:websitemaster@bhndpg.org">websitemaster@bhndpg.org</a></td>
</tr>
<tr>
<td>Newsletter (Author, Reviewer)</td>
<td>Hanna Kelley, RD CD <a href="mailto:newslettereditor2@bhndpg.org">newslettereditor2@bhndpg.org</a></td>
</tr>
<tr>
<td>Fact Sheets (Author, Reviewer, Committee member)</td>
<td>Ruth Roberts, LPC, LDN, RDN <a href="mailto:assistantnewslettereditor2@bhndpg.org">assistantnewslettereditor2@bhndpg.org</a></td>
</tr>
<tr>
<td>Publications (Resource Tool Development and Updates)</td>
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<tr>
<td>• Adult with IDD Resource Tool</td>
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<tr>
<td>• Addictions Resource Tool</td>
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<tr>
<td>• Eating Disorders and IDD Position Papers</td>
<td></td>
</tr>
<tr>
<td>Research Committee (New!)</td>
<td>Ruth Leyse Wallace PhD RD <a href="mailto:mentalhealthresourceprofessional@bhndpg.org">mentalhealthresourceprofessional@bhndpg.org</a></td>
</tr>
<tr>
<td>Reimbursement (Committee Member)</td>
<td>Sharon Lemons, MS RD CSP <a href="mailto:chair@bhndpg.org">chair@bhndpg.org</a></td>
</tr>
</tbody>
</table>

**BHN launches a new hashtag, #BHNbrainbites!** Check out this hashtag on Twitter and Facebook for tidbits of information on a plethora of topics, delicious recipes, and to get in contact with your fellow BHN Dietitians!

We are also looking forward to the launch of our first-ever student blog, which will feature student-authored articles such as interviews with renowned RDs, advice on how to get the internship you want, information on career path options, and how to choose the right program for you. Keep your eye on our social media pages to check these out. If you are a student and are interested in guest writing for the Student Blog, please contact our Student Liaison, Emily Conner, at studentliaisoncommitteechair@bhndpg.org.

**Be on the lookout! Upcoming Webinars:**

- **May 26th** – “Cracking the Code Alphabet Soup: Understanding the Use of Coding/Billing Terminology”, presented by Sharon Lemons MS, RDN, CSP, LD, FAND
- **June TBA**

**BHN fact sheets new editor:** Ruth Roberts, LPC, LDN, RDN. Fact sheet development is expected to flourish with the addition of an editor position. Ruth has served as Assistant Newsletter Editor and is ready to take on a position that focuses solely on BHN fact sheets. Welcome Ruth and thanks to Diane Spear for assisting until this important position could be filled. Ruth can be contacted at assistantnewslettereditor2@bhndpg.org.

**Exciting BHN FNCE News!**

**Brain Data and Dogma: Expanding MNT to Increase Fiscal Reimbursement**

Session Date/Time: October 3rd 11:30 am-3:30 pm

We are thrilled to announce our speakers for this workshop are Dr. Joseph Hibblen, MD (Chief of Nutrition Neuroscience for NIH), Dr. Ralph Carson, PhD, RD (Executive Director for FitRx and international expert on food-based interventions to optimize brain chemistry), and Lisa Kantor, Esq (legal expert for insurance reimbursement). What a distinguished panel of experts!

**BHN FNCE Spotlight Session:**

Food for Recovery: The Critical Role of Resolving Malnutrition and Disordered Eating Patterns in those with Substance Abuse and Addictions.

Session Date/Time: October 5th 3:30pm

by Megan Kniskern MS, RD, CEDRD

**Academy of Nutrition and Dietetics Position Paper**

The Position of the Academy of Nutrition and Dietetics: Nutrition Services for Individuals with Intellectual and Developmental Disabilities and Special Health Care Needs was reaffirmed and published in the April 2015 Journal of the Academy. Congratulations to BHN members who participated as a co-author, Wendy Whittenbrook, MS, RD,
In the BHN Pipeline!
Continued from page 12

CSP, LD, and reviewers, Sharon Lemons, MS, RDN, CSP, LD, FAND and Patricia Novak, MPH, RD. This position paper is available at http://dx.doi.org/10.1016/j.jand.2015.02.002.

In the BHN Pipeline also features current practice resources, book reviews and member products of interest to our members. If you have a resource or product to feature, contact newslettereditor2@bhndpg.org. We look forward to hearing from you!

HOD Delegates Report

Harriet Holt Cloud, MS, RD, FAND

Now that FNCE® for 2014 is behind us many new announcements are coming out from the House of Delegates (HOD) and the Academy. Many of the items being addressed are follow-up to the mega-issues discussed during FNCE®.

Business and Management Skills.
The HOD developed a series of guiding principles for increasing business and management skills were identified. The HOD requested that the Leadership Team establish a task force to review all of the HOD input from the fall meeting and report back to the HOD. The task force has been identified and the members are Stacey Antine, MS, RD, (Chair); Tami Cline, PhD, RD –School Foodservice; Joe Derochowski, Outside Expert; Deborah R. Hutsler, MS, RD, Clinical Nutrition Management, Pediatrics; Alice J. Lenihan, MPH, RD, Public Health, Community Nutrition. The task force will be meeting from February to November 2015 to create a plan to assist members and students in building, enhancing and utilizing skills and knowledge related to business and management. This plan will be disseminated to the HOD in the Fall, 2015.

Council on Future Practice
The Council on Future Practice is now accepting nominations for 2 positions in the 2015-2016 program year. BHN-DPG members should consider nominating themselves or a colleague to serve on the CFP. The CFP has identified practice gaps in its membership and is looking for experts in the following areas:
- Agriculture, sustainability and food systems
- Business, marketing, and communication
- Corporate wellness, health promotion/food retail
- Informatics.

For more information and opportunities for leadership roles visit www.eatright.org/future practice. The Council will offer a session on innovations in Practice and Education during FNCE® in Nashville, Tennessee 2015. The session will showcase innovations in the education and training of students and practitioners.

Diversity Strategic Plan
The HOD hosted a discussion on diversity efforts in the community, workplace or academic setting. The Academy’s Diversity Committee was part of the dialogue and subsequently developed a Diversity Strategic Plan for the period of 2015-2020. The plan contains a vision, mission, definition and four objectives with responsible teams or organizational units, implementation dates and outcome measures. The Diversity Strategic plan will guide the Academy’s efforts in working toward a more diverse membership and profession.

Nutrition Services Payment Committee
At its January 16th meeting the Academy Board of Directors approved changing the name of the Coding and Coverage Committee to the Nutrition Services Committee. The chair of the committee is Becky Sulik, RDN, LD, CDE and the staff partner is Marsha Schofield, MS, RD, LD, FAND. The name was changed to reflect the changing needs of the profession which include coding and coverage, health information technology and the issue of nutrition services delivery and payment which involves a wide range of practice areas and settings. BHN-DPG has had a major concern with the inclusion of many of our areas of practice in the health care settings and payment for those services.

Spring Virtual Meeting
The HOD will meet virtually on May 2-3, 2015. The May 2nd meeting will be on Malnutrition. I hope many of the BHN-DPG members will review the backgrounder on this topic on: www.eatright.org/resources/leadership/house of delegates/about-hod-meetings. Malnutrition (undernutrition) is common across many nutrition and dietetic practice settings, including but not limited to acute care, long-term care, outpatient/ambulatory clinics, public/community health settings, and schools, and it affects children, adults, and the elderly. The objectives for the virtual meeting are that the participants will be able to:
- Recognize the magnitude, contributing factors and consequences of malnutrition in the United States.
- Expand awareness of the impact/outcomes of managing malnutrition (identification, diagnosis intervention) across all dietetic practice setting.
- Affirm and promote the role of and the opportunities for RDN’s and Nutritional and Dietetic Technicians, Registered (NDTRs) in management of malnutrition.

This should be an interesting topic for all the HOD members. If you have thoughts about this topic please contact me by email at HODrepresentative@bhndpg.org, Facebook at https://www.facebook.com/harriet.cloud, and even that forgotten tool, the phone.

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HODrepresentative@bhndpg.org
205-871-0582
Schizophrenia and Diabetes: Review and Case Study

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Alyce Thomas, RD
Department of Obstetrics and Gynecology
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Paterson, NJ

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East Orange, NJ
CAPT Deborah B. Nixon, RN
Nurse Officer
United States Public Health Service (USPHS)
Commissioned Corps

Abstract

Schizophrenia is a chronic neurologic disorder that has the potential for severe disability among affected patients. In addition to the mental and behavioral problems associated with the disease are numerous nutrition-related comorbidities. The coexistence of schizophrenia and other mental disorders with diabetes has been related to the use of antipsychotic medications, but some research has suggested that patients who have schizophrenia are more prone to the development of diabetes than the general population. More research is required to elucidate the association of mental disorders with metabolic disturbances, but the coexistence of diabetes with schizophrenia necessitates evaluation and treatment of affected patients.

Overview of Schizophrenia

Schizophrenia affects about 24 million individuals worldwide and 2.4 million (1%) of the United States population.1 This chronic and potentially severely disabling neurologic disorder involves pathways to the prefrontal cortex of the brain.1

Although understanding of schizophrenia has improved over the years (Table 1), much is yet to be learned. Both positive and negative symptoms are seen with schizophrenia, and cognitive symptoms may be difficult to recognize. Symptoms generally are noted initially between 16 and 30 years of age.2 Although the diagnosis requires the presence of specific symptoms, these may be difficult to discern from typical adolescent behaviors. Historically, “bad parenting” was blamed for this developmental brain disease, but more recently, research has shown possible genetic underpinnings.1

In the past, medical professionals and society were ill-prepared to treat individuals with schizophrenia and other mental disorders, and as recently as 1971, an estimated 433,000 Americans were institutionalized.3 Evidence-based treatment guidelines have been limited and poorly disseminated. A significant change began in 1992, when the Agency for Health Care Policy and Research partnered with the National Institute of Mental Health (NIMH) in establishing a Patient Outcomes Research Team for schizophrenia at the University of Maryland School of Medicine and the Johns Hopkins University of Public Health.4 This consortium is focused on developing and disseminating recommendations for the treatment of schizophrenia based on existing scientific evidence.5

Metabolic Abnormalities and Psychiatric Disorders

The coexistence of diabetes and psychiatric illnesses, including schizophrenia, has been observed for centuries.7 Several theories were offered as possible explanations for this relationship:8,9

• Increased levels of stress and anxiety, depressive symptoms, and decreased self-esteem following a diagnosis of diabetes and the related challenges of managing a chronic illness
• Schizophrenia as an independent risk factor for glucose intolerance and diabetes
• An association between poor glycemic control and subsequent complications of diabetes

More recently, research suggests that individuals with psychiatric disorders have a 1.5-to 2-fold greater risk of developing diabetes than the general population.10 This increased risk for diabetes is often associated with use of second-generation antipsychotic agents (SGAs), such as atypical psychotropes.11-13 At present, SGAs are often considered as first-line therapy for the treatment of schizophrenia and other psychiatric disorders because of fewer adverse effects (such as tardive dyskinesia and other impairments in physical movement) compared with the first-generation typical antipsychotic medications. Data linking SGAs to metabolic disturbances are conflicting, with some studies documenting a high incidence of metabolic syndrome, insulin resistance, and diabetes in individuals with psychotic and affective disorders that is independent from use of antipsychotic medications.14-16

Rapid weight gain has been documented during the first several months of SGA treatment,10 but data linking use of SGAs as a causal effect on weight gain are mixed. Confounding factors include data showing that individuals suffering from psychiatric disorders are frequently physically inactive, consume poorly balanced diets, and have limited access to quality health care and other resources.17 For example, one study of drug-naïve patients with schizophrenia found they had more than three times the intra-abdominal fat as age- and body mass index-matched controls.18

Not surprisingly, one strategy suggested to address the weight gain and metabolic abnormalities associated with antipsychotic medication use and schizophrenia is to select alternate medications for treatment. Mukandan and associates19 concluded that although such an approach would appear to be prudent, the research supporting a change in medications is

continued on page 14
### Table 1. Schizophrenia at a Glance1-5

| Prevalence | • 24 million affected worldwide; 2.4 million in the United States  
• No discrimination in gender or ethnic group  
• Rarely seen in children, but awareness and diagnosed cases increasing  
• Symptoms first noted between 16 and 30 years of age  
• Most individuals diagnosed before age 45 |
|---|---|
| **Positive symptoms** (psychotic behaviors not seen in healthy persons) | • Hallucinations of all the senses  
• Delusions (e.g., grandeur, paranoia, persecution, bizarreness)  
• Thought disorders (e.g., disorganized thinking, creation of meaningless words, garbled talk)  
• Movement disorders (e.g., agitated or repetitive body movements versus catatonia)  
• Difficulty with critical thinking processes  
• Easily distracted; difficulty focusing on a topic  
• Difficulty in retaining and readily applying new information |
| **Negative symptoms** (disruptions of normal emotions and behaviors; may be mistaken for depression) | • Flat affect  
• Lack of pleasure in everyday life  
• Inability to initiate and continue planned activities (including activities of daily living and independent activities of daily living)  
• Limited verbal interaction |
| **Cognitive symptoms** (often difficult to recognize) | • Difficulty with critical thinking processes  
• Easily distracted; difficulty focusing on a topic  
• Difficulty in retaining and readily applying new information |
| **Diagnosis2** | • 1) Presence of 2 of 5 of these symptoms: delusions; hallucinations; incoherent, derailed, or disorganized speech; catatonic or extremely disorganized behavior; negative symptoms (reduced speech or flat affect); and 2) presence of at least 1 of these 3 symptoms: delusions, hallucinations, and disorganized speech  
• Difficult to diagnose in teens because symptoms resemble adolescent behaviors that occur periodically, such as changing friendships, a decline in grades for coursework, changing sleep patterns, irritability  
• Combination of factors highly predictive for diagnosis in teens (identifies up to 80% of those at high risk): isolation and withdrawal from others + increased frequency of unusual thoughts and suspicions + family history of psychosis |
| **Etiology** | Genetics:  
• Occurs in 10% with affected first-degree relative  
• 40% to 65% occurrence in identical twins  
• Believed to be due to genetic mutation(s) resulting in disruption of brain chemical development  
• Appears genetically related to bipolar disorder  
Possible environmental factors:  
• Exposure to viruses or malnutrition in utero  
• Problems during birth delivery  
• Yet unknown psychosocial factors  
Possible imbalance and dysregulation of neurotransmitters and structural differences that may have begun in utero but are not evident until puberty or after |
| **Relationship to other mental disorders and behavioral problems** | • Increased risk (10% of this population) for suicide attempts (highest in young adult males)  
• Increased risk for tobacco abuse compared to general population (nicotine addiction is 3 times greater)  
• Increased risk for alcohol or substance abuse compared to general population |
| **Social implications** | • Inability to care for oneself or obtain/maintain employment, results in dependence on family/community/governmental services for survival  
• Homelessness |

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1-5: References or sources are not provided within the document.

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## Table 1. Schizophrenia at a Glance

<table>
<thead>
<tr>
<th>Potential impact on eating habits and nutritional status</th>
<th>Continued from page 14</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Increased appetite and weight gain is common</td>
<td></td>
</tr>
<tr>
<td>• Reduced energy needs (280 kcal/day) with dozapine; monitor weight trend with other antipsychotics and adjust as indicated</td>
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<tr>
<td>• Dental problems</td>
<td></td>
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<tr>
<td>• Dry mouth, increased thirst related to adverse effects of antipsychotic medications</td>
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<tr>
<td>• Polydipsia and resultant water intoxication</td>
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<tr>
<td>• Constipation; check fiber intake</td>
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<tr>
<td>• Omission of food groups related to food insecurity, limited resources</td>
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<tr>
<td>• Effects of alcohol and substance abuse on food choices and nutrient deficiencies</td>
<td></td>
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<tr>
<td>• Limited ability/decision-making skills to shop for and prepare nutrient-dense foods</td>
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<tr>
<td>• Alterations in utilization, potential for nutrient deficiencies, and supplementation needed for: vitamin C, thiamin, riboflavin, vitamin D, niacin, magnesium, copper, zinc, omega-3 fatty acids</td>
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</tr>
<tr>
<td>• Drug-nutrient interactions: a) Ziprasidone and quetiapine fumarate: avoid grapefruit; b) Risperidone: may increase vitamin D metabolism; c) Phenothiazines (chlorpromazine, mesoridazine, perphenazine): may increase need for riboflavin, decrease absorption of vitamin B-12; if magnesium supplements taken, give 2 hours before or after food</td>
<td></td>
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<tr>
<td>• Alcohol intake contraindicated with many antipsychotics</td>
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</table>

<table>
<thead>
<tr>
<th>Treatment modalities: Medications</th>
<th>Treatment modalities: Behavioral and psychosocial approaches</th>
</tr>
</thead>
<tbody>
<tr>
<td>• First-generation “typical” antipsychotics available since the mid-1950s: chlorpromazine, haloperidol, perphenazine, fluphenazine</td>
<td></td>
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<tr>
<td>• Second-generation “atypical” antipsychotics available since the 1990s: clozapine, risperidone, olanzapine, quetiapine, ziprasidone, aripiprazole, paliperidone</td>
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</tr>
<tr>
<td>Potential adverse effects:</td>
<td></td>
</tr>
<tr>
<td>• Agranulocytosis (clozapine)</td>
<td>• Cognitive and behavioral therapy to reduce severity of symptoms and risk for relapse</td>
</tr>
<tr>
<td>• Drowsiness</td>
<td>• Coping strategies to address challenges with activities of daily living, interpersonal relationships, consistent attendance at work, school, medical appointments</td>
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<tr>
<td>• Dizziness related to change in position</td>
<td>• Identification of early warning signs of relapse to enable prevention</td>
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<tr>
<td>• Blurry vision</td>
<td>• Integrated treatment for those with concomitant substance abuse improves outcomes</td>
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<tr>
<td>• Tachycardia</td>
<td>• Rehabilitation programs for job counseling/training, financial management, oral and written communication skills</td>
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<tr>
<td>• Photosensitivity</td>
<td>• Inclusion and ongoing education and support of family and other caregivers</td>
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<tr>
<td>• Skin rashes</td>
<td>• Involvement in self-help groups for support and advocacy efforts</td>
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<tr>
<td>• Menstrual irregularities</td>
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<tr>
<td>• Weight gain and associated changes in metabolism (glucose and lipid concentrations)</td>
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<tr>
<td>• Impairments in physical movement (e.g., rigidity, tremors, muscle spasms, restlessness)</td>
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</tr>
<tr>
<td>• Tardive dyskinesia (uncontrollable muscle movements, often affecting facial muscles around the mouth); less common in second-generation antipsychotics</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Treatment modalities: Nutrition and lifestyle change programs</th>
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</thead>
<tbody>
<tr>
<td>• Weight management, with ongoing follow-up evaluation</td>
<td>• Cognitive and behavioral therapy to reduce severity of symptoms and risk for relapse</td>
</tr>
<tr>
<td>• Vitamin/mineral supplementation to correct deficiencies</td>
<td>• Coping strategies to address challenges with activities of daily living, interpersonal relationships, consistent attendance at work, school, medical appointments</td>
</tr>
<tr>
<td>• Interdisciplinary team approach</td>
<td>• Identification of early warning signs of relapse to enable prevention</td>
</tr>
<tr>
<td>• Referral to other providers</td>
<td>• Integrated treatment for those with concomitant substance abuse improves outcomes</td>
</tr>
<tr>
<td>• Referral to community agencies/programs</td>
<td>• Rehabilitation programs for job counseling/training, financial management, oral and written communication skills</td>
</tr>
<tr>
<td>• Family/caregiver support</td>
<td>• Inclusion and ongoing education and support of family and other caregivers</td>
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<tr>
<td></td>
<td>• Involvement in self-help groups for support and advocacy efforts</td>
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Schizophrenia and Diabetes: Review and Case Study
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relatively weak due to a limited number of trials and small sample sizes.

Further research is warranted to elucidate the temporal relationship between various psychiatric disorders and diabetes and the medications used for treatment.

Prevention of Diabetes and Lifestyle Change Interventions
In 2004, triggered by numerous reports of metabolic disturbances in glycemic control, dyslipidemia, and significant weight gain in individuals treated with SGAs, the American Diabetes Association, American Psychiatric Association, American Association of Clinical Endocrinologists, and North American Association for the Study of Obesity published findings from a consensus development conference on antipsychotic drugs and obesity and diabetes.10 Recommendations for practitioners included:

• Obtain baseline screening measures before or soon after the initiation of any antipsychotic medication

• Assess parameters on an ongoing basis (frequency of monitoring based on personal/family history of obesity, diabetes, dyslipidemia, hypertension, or cardiovascular disease): weight and height (to calculate body mass index), waist circumference, blood pressure, fasting plasma glucose, and fasting lipid profile

Several studies have demonstrated the efficacy of a lifestyle intervention program for individuals with the dual diagnosis of schizophrenia and diabetes. The 24-week Diabetes Awareness and Rehabilitation Training (DART) study assigned patients older than age 40 to either the DART or the usual care plus information (UCI) group.20 Results showed a mean loss of 5 lb for those participating in the DART, while those in the UCI group gained a mean of 6 lb. In addition, the DART program was associated with a lowering of serum triglyceride values and increases in self-reported physical activity, diabetes knowledge, and self-efficacy. However, positive changes were not shown for fasting plasma glucose or glycated hemoglobin values.20

Menza and colleagues21 conducted a year-long prospective trial of exercise, nutrition interventions, and behavioral therapy among patients with schizophrenia and diabetes. The interventions resulted in weight loss and improved glycemic control.

Positive data also were seen in an NIMH-funded study of people with schizophrenia, bipolar disorder, and major depression who lost weight and sustained the weight loss through a modified lifestyle intervention program.22 To overcome psychosocial and economic factors that often prevent individuals with psychiatric disorders from participating in lifestyle change programs, the Achieve Healthy Lifestyles in Psychiatric Rehabilitation (ACHIEVE) Trial was conducted onsite at 10 psychiatric rehabilitation outpatient programs in Maryland. The randomized trial compared usual care, which provided information on nutrition and physical activity, to 6 months of intensive intervention, which consisted of weekly individual or group weight loss classes and exercise classes three times a week. Patients in both arms of the study were followed for an additional year after the initial study period. Most participants were taking an average of three psychotropic medications, with lithium or another mood stabilizer (to treat bipolar disorder) prescribed for at least 50%. All of these medications have been shown to cause weight gain. Participants in the intensive intervention arm not only lost 7 lb more than those in the control group, but they continued to lose weight without recidivism, despite a reduction in frequency of class offerings and counseling sessions over time.22

Case Study
A 37-year-old African American obese male is admitted to a university medical center for uncontrolled diabetes for the third time in 3 months. He was diagnosed with type 2 diabetes (T2DM) 3 years ago while receiving psychiatric care for schizophrenia. The patient is referred to the diabetes support team, which consists of a registered dietitian (RD), registered nurse, pharmacist, social worker, and clinical psychologist, for self-management education.

The patient is 69 inches tall and weighs 245 lb (BMI 36.2). His laboratory results upon admission are:

• Fasting Glucose: 145 mg/dL
• Hemoglobin A1C: 8.5%
• Cholesterol: 235 mg/dL
• Low-density lipoprotein cholesterol: 130 mg/dL
• Triglycerides: 165 mg/dL
• High-density lipoprotein cholesterol: 50 mg/dL
• Blood urea nitrogen: 21 mg/dL
• Creatinine: 0.8 mg/dL
• Estimated glomerular filtration rate: 80 mL/min/1.73 m²

He is currently taking risperidone (an antipsychotic), an angiotensin-converting enzyme (ACE) inhibitor for hypertension, and 500 mg metformin twice a day. He does not take any over-the-counter multivitamin-mineral, dietary, or herbal supplements.

This high school graduate has never been married and has no children. He is currently unemployed and lives with his mother, who was diagnosed with T2DM 10 years ago. He has been unable to obtain full-time employment and live independently because of schizophrenia.

During a previous hospitalization for schizophrenia and diabetes management, he received medical nutrition therapy by an inpatient RD. His mother could not attend this session because of a conflict with her work schedule.

The diabetes support team concludes that the patient and his mother would benefit from attending the diabetes self-management education sessions together. During the initial evaluation, the RD determines that the patient had a limited understanding of diabetes-related nutrition principles. He states, “I like what I like and I am getting tired of people telling me what I need or what is best for me to eat.” His eating habits consist of breakfast and dinner prepared by his mother, which are consistent with the nutrition guidelines for the management of diabetes. He frequently snacks on cheese and crackers, canned soup, and single-serving apple pies. He also eats cheeseburgers at a local fast food establishment twice a week.
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The RD provides an individualized nutrition plan that incorporates some of the patient’s personal preferences. She also suggests modifying previous habits in an effort to meet mutually identified goals for improved health and diabetes management. She uses the Teach-back technique to help reinforce her nutrition recommendations at his level of cognition.

To prevent relapse, one member of the diabetes team is designated to meet with the patient and his mother on a weekly basis. Additional services will be arranged by the social worker, including a community-based adult care agency that provides day, evening, and weekend services. This agency specializes in managing patients with multiple medical and psychiatric needs. The ongoing support “is expected to” benefit the patient and provide a respite for his mother, who oversees his diabetes and schizophrenia management.

Discussion

Persons with a dual diagnosis of schizophrenia and diabetes require additional attention and comprehensive nutrition counseling. The RD needs a basic understanding of this neurologic brain disorder to tailor the nutrition counseling accordingly.

Asking the patient to recount instructions for taking medication or to describe a proposed procedure or skill can illustrate the individual’s needs and challenges. The Teach-back technique is an effective counseling method that promotes dialogue between the patient and practitioner. The educator first presents material on a topic(s) and then asks the patient to repeat or “teach-back” the content or skills. This helps confirm the patient’s understanding and ability to implement the recommendations. Based on the patient’s response, the clinician either presents the same information in a different format or adds new information as needed.

Best practice for the management of the person with diabetes and schizophrenia is a coordinated, concentrated team approach. Incorporating management strategies such as the Teach-back technique provides the environment to enhance learning and promote positive behavioral change. In addition, the Academy of Nutrition and Dietetics Nutrition Care Manual and the Evidence Analysis Library contain teaching materials and research data for the medical nutrition professional and others working with this patient population.

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