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Mental Illness and Diabetes in Vulnerable Populations: developing a diabetes champion program

American Association of Diabetes Educators
Houston, Texas
Monday, August 12, 2019

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Disclosure to Participants

- Notice of Requirements For Successful Completion
 - Please refer to learning goals and objectives
 - Learners must attend the full activity and complete the evaluation in order to claim continuing education credit/hours
- Conflict of Interest (COI) and Financial Relationship Disclosures:
 - Speaker's Bureau: Astra Zeneca, Insulet
 - Advisory Board: BD
 - Stock Holder: Medtronic Diabetes

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Objectives

- Identify one risk factor for type 2 diabetes in people with serious mental illness.
- State one difference in a traditional diabetes champion program versus one for psychiatric nurses.

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Introduction

- Master's Project
- RN, CDE at a tertiary care hospital with an existing diabetes champion program (DCP) and an adjacent psychiatric hospital with no CDE or any diabetes resources.
- Identified sub-optimal diabetes care and education for psychiatric patients transferred to my tertiary care hospital.
- Opportunity to improve outcomes in this vulnerable population by educating mental health nurses on diabetes care & education.
- Chose a mentor from Nurs Educ at the affiliated psychiatric hospital.
- Started to look for some data to collect before I started an intervention.

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What classifies as “mental illness?”

- Refers collectively to all diagnosable mental disorders.
- Characterized by sustained, abnormal alterations in mood, thinking, or behavior w distress & impaired functioning.
- Accounts for more disability than any other illness including cancer and heart disease (WHO).
- Present in ¼ adults in U.S. and ½ over lifetime.
- U.S. costs an estimated \$300 billion annually (2002, 2003).

Reeves, W.C., et al. CDC, Morbidity and Mortality Weekly Report, September 2, 2011 / 60(03); 1-32.



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Scope of the Problem

- Multiple stakeholders
- High incidence of poor glucose control in psychiatric patients
 - 78.8 to 84.3% of pts had BG ≥ 200 mg/dL (spring '15)
 - 13.4 to 17% with BG ≥ 300 mg/dL
- DM and SMI are frequent co-morbidities
 - Literature reports 8 to 17% of psychiatric patients have DM
- Together impact life expectancy
 - ↓ life expectancy by 20-25 years

De Hert, et al., 2009, European Psychiatry, 24(6), 412-424; McIntyre, et al., 2005, Clinical Psychiatry, 17(2), 83-93.



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Literature on DCPs

- ↓ in 30 day re-admissions (Healy et al; Corl et al)
- ↓ in insulin errors (Jornsay & Garnett)
- ↑ in patient education (Spolett '93; Jornsay & Garnett)
- ↑ RN confidence and knowledge (Modic, et al)
- Improved in-patient glycemia (Spolett '06)
- Improved case management (Welch et al)

Healy, et al, 2014; Corl, et al, 2015; Jornsay & Garnett, 2014; Spolett, 1993; Modic, et al, 2014; Spolett, 2006; Welch, 2010.



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Literature on DCPs for Psych RNs

- None exists
- But, there is an increased call for nursing involvement in the management of medical co-morbidities
 - Wellness programs for patients with SMI (Chiverton et al)
 - DM Self management education (Lawless et al)
 - ↓ causes of premature mortality (Bradshaw & Pedley)
 - Patient centered medication adherence (Pyne et al)
 - Best practices for psychiatric patients (Sajatovic et al)

Chiverton et al, 2007; Lawless et al, 2016; Bradshaw & Pedley, 2012; Pyne et al, 2013; Sajatovic, 2011 #AADE19

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Theoretical Program Basis

- **Jean Watson's Theory of Caring**
 - Dr. Watson worked as a psychiatric RN
 - Her view of a human being as "valued person ...to be cared for, respected, nurtured, understood and assisted"
 - Given the marginalization of people w SMI, Watson's *actual caring occasion* promotes RN/patient relationship
- **Patricia Benner's Novice to Expert**
 - DM Champion info and skills sequentially built week by week

Watson, J. (1988); Benner, P. (1984)

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Program Design

- Program design based on the educational research of Trivette and colleagues
 - Total enrollment < 30 people
 - Program education on multiple occasions
 - Total number of hours >10
- Chose 15 hours-total CEUs needed to sit for CDE exam

Trivette, et al (2009) Research Brief, 3(1), 1-33.

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Curriculum Design

- Based on American Association of Diabetes Educators (AADE) 7 healthy behaviors
- Designed to bridge the transition to out-patient diabetes and mental health care
- Skill/concept taught to RN was to be taught to a patient before the next class
- Discussion of how this teaching went at the beginning of each class

Haas, et al, 2013; Shivastava, et al, 2013



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Curriculum

- Nine classes in total, each 90 minutes long
- Each class had:
 - An initial discussion of how their teaching went
 - A didactic portion related to the topic
 - A hands-on portion also related to the topic



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Curriculum

OBJECTIVES	CONTENT (Topics)	TIME FRAME	PRESENTER	METHODS
<p>1. Explain the importance of patient education</p> <p>2. Explain the role of the diabetes educator</p> <p>3. Explain the role of the diabetes educator in the community</p> <p>4. Explain the role of the diabetes educator in the workplace</p> <p>5. Explain the role of the diabetes educator in the home</p>	<p>1. Role of the diabetes educator</p> <p>2. Role of the diabetes educator in the community</p> <p>3. Role of the diabetes educator in the workplace</p> <p>4. Role of the diabetes educator in the home</p>	90 minutes	<p>Stephanie Harvey, RN, CDE, NCS</p> <p>Christina Smith, RN, CDE</p> <p>Christina Smith, RN, CDE</p> <p>Christina Smith, RN, CDE</p>	<p>Didactic, role-play, simulation, and case study presentations</p> <p>Small group</p> <p>PowerPoint, video, and audio</p> <p>Small group</p> <p>Small group</p> <p>Small group</p>
<p>1. Explain the importance of patient education</p> <p>2. Explain the role of the diabetes educator</p> <p>3. Explain the role of the diabetes educator in the community</p> <p>4. Explain the role of the diabetes educator in the workplace</p> <p>5. Explain the role of the diabetes educator in the home</p>	<p>1. Role of the diabetes educator</p> <p>2. Role of the diabetes educator in the community</p> <p>3. Role of the diabetes educator in the workplace</p> <p>4. Role of the diabetes educator in the home</p>	90 minutes	<p>Stephanie Harvey, RN, CDE, NCS</p> <p>Christina Smith, RN, CDE</p> <p>Christina Smith, RN, CDE</p> <p>Christina Smith, RN, CDE</p>	<p>Didactic, role-play, simulation, and case study presentations</p> <p>Small group</p> <p>PowerPoint, video, and audio</p> <p>Small group</p> <p>Small group</p> <p>Small group</p>



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Curriculum



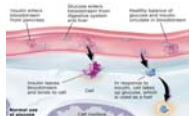
• Session 1: Patient Education

- DC can explain the role of the Diabetes Champion.
- DC can identify an effective patient education strategy and resource
- DC can describe one critical component of Teach Back
- DCs teach one another any skill and then present to the group what they learned from this experience.

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Curriculum



• Session 2: Pathophysiology

- Type 1 5 x 8 index cards with
- Type 2 different characteristics of
- Pre-Diabetes the various diabetes types
- LADA
- GDM

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Curriculum



• Session 3: Mental Illness



- Impact of Psychiatric Meds on glycemia
- Postpartum depression
- Diabetes distress
- Community attitudes towards mental illness
- Only session that did not have a hands-on component

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Curriculum

- **Session 4: Medical Nutrition Therapy & Exercise**
 - Plate method
 - Carb counting
 - 150 minutes/week with no more than 2 days off


Used Panera's foods to get participants to guess carb and fat grams

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Curriculum

- **Session 5: Blood Glucose Monitoring**
 - Blood glucose targets
 - Need to individualize
 - Relationship between BGs and A1c
 - DCs given a meter and check their own glucose
 - Alternative site testing/CGMs




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Curriculum

- **Session 6: Orals and Injectables**
 - Mechanisms of action of different drug classes
 - Game associating medication with target organs




Stomach <ul style="list-style-type: none"> - Gastric emptying ↓ - Gastric motility ↓ 	Brain <ul style="list-style-type: none"> - Food uptake ↓ - Body weight ↓
Colon <ul style="list-style-type: none"> - Food transit time ↓ 	Pancreas <ul style="list-style-type: none"> - Insulin biosynthesis ↑ - Glucagon secretion ↓
Adipose tissue <ul style="list-style-type: none"> - Thermogenesis of BAT ↑ - Browning of white adipose tissue ↑ - Energy expenditure ↑ 	<ul style="list-style-type: none"> - β-cell apoptosis ↓ - β-cell survival ↑ - Glucose transporter gene ↑


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Curriculum




- **Session 7: Insulins and Hypoglycemia**
 - Onset, peak and duration of all
 - Different insulin concentrations
 - How to teach the insulin pen
 - Hypoglycemia and glucagon
 - Self injection to understand patient anxiety
 - Team activity: arrange insulin by fastest to slowest



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Curriculum



Session 8: Insulin pumps / glucose sensors

- Review hospital policy/documents
- Time to play with all the pumps; features detailed by company clinical experts
- How to calculate doses, ISF, ICR




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Curriculum

Session 9: ADA Standards of Care

- Complication surveillance, prevention, detection
- Foot Care



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Program Outcomes

- To educate and develop a multidisciplinary group of diabetes champions (DCs)
- DC Roles:
 - Direct patient and family diabetes education
 - Staff Education
 - Performance improvement projects around diabetes

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Program Outcomes, con't

- DC Evaluation:
 - Competency assessment for teaching blood glucose monitoring
 - Competency assessment for teaching insulin pen techniques
 - Pre to post test score comparison
 - Passing grade of 85% or greater

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Program Analysis

- Program Evaluation: 4.8 on a scale of 5
- All DCs demonstrated competency in teaching blood glucose monitoring and insulin pen use
- DC pre- to post-test scores:
 - Pre-test average of 39.3%; range 21-54%
 - Post-test average of 90.7%; range 75 to 98%

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Program Analysis, con't

- Long-term Goals:
 - ↑ in patient education
 - ↓ in blood glucose values
 - ↓ in transfers to the tertiary care hospital for BG control
 - A full-time CDE position in the psychiatric hospital

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Program Analysis: Unintended Program Outcomes

- Quarterly rotation of hospitalist coverage for medical problems in the psychiatric hospital
- Funding for a part-time CDE position was obtained
- Proposal for a FT CDE; transfer to tertiary care hospital and BG data for Apr-June 2016 included in proposal
- DC monthly Journal Club—first one was held 4-14-16.
- Full time CDE was hired 8 months later and she continues this work

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Graduation

- 18 nurses and 1 dietitian completed this program
- They are a multi-ethnic group of champions
 - in NYS 90% of CDEs are Caucasian
- 47 % of DCs speak a 2nd language
 - Only 17% of NYS CDEs speak a second language
- DCs pinned as a sign of their success



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ZHH Diabetes Champions



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My Learner Outcomes

- The post test scores and the participant evaluations let me know my teaching was effective.
- Personally, designing a curriculum and evaluation methods was very rewarding.
- My leadership & communication skills were enhanced

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My Learner Outcomes, con't

- DCs comments:
- "I loved the interactive exercises—these really drove home the teaching";
- "I never believed I could test my own blood glucose";
- "You made diabetes come alive for me";
- "Wow, I was so, so nervous before I gave a shot, and it didn't even hurt".

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Thank you, thank you, thank you...

- Dr. Patricia Bitar, for your direction, feedback and encouragement,
- Dr. Robin DeWald, for your early direction and approval of my idea,
- Dr. Nataliya Shaforost, for your friendship, and guidance with scaling back my ideas,
- Maira Barnes, MS, RN-BC, CNE for your mentorship, support and understanding of what it means to live with serious mental illness.
- And last but never least...
- Ann Marie Hasse, MSN, RN, CDE for teaching and developing the program with me...

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Leadership Role

- Identified the problem and lack of appropriate education and care for this underserved population
- This started a conversation in senior leadership
- The DCP became one piece of a bigger solution
- Inter-professional collaboration was key
 - Letting the division chief know what I was doing and why
 - Communicating to nursing leadership at tertiary care hospital and at psychiatric hospital

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Leadership Role, con't

- This project highlights AADE's new vision for our profession, PROJECT VISION
- As CDEs, WE are diabetes experts and we need to get ourselves to the table(s) to:
 - -advocate for people living with diabetes,
 - to advocate for changes in the way(s) we deliver care
 - Increase our population health efforts

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Toda dankie Gracias

shukran Thank You dēkuji

xie xie P hufi



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