Obesity and Continence Care in Nursing Home Residents

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Objectives

1. Describe the demographics and consequences of obesity and UI

2. Examine selected research regarding obesity and continence care in nursing home residents

3. Suggest future practice and research needs
How Is Obesity Defined?
## Weight Classification by Body Mass Index *

*NIH, 2000

<table>
<thead>
<tr>
<th>Classifications</th>
<th>Body Mass Index (kg/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt; 18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5-24.9</td>
</tr>
<tr>
<td>Overweight</td>
<td>25-29.9</td>
</tr>
<tr>
<td>Obesity Class I</td>
<td>30-34.9</td>
</tr>
<tr>
<td>Obesity Class II</td>
<td>35-39.9</td>
</tr>
<tr>
<td>Extreme/Severe Obesity Class III</td>
<td>&gt; 40</td>
</tr>
</tbody>
</table>
Obesity and UI: Epidemiology**

• UI affects 50% of middle-aged/older women
• Obesity in the US:
  – 33% of adult population obese; increasing by 6%/year
  – Severe obesity present equally in women and men
  – Women represent > 75% seeking treatment
• Older Adults
  – 39% overweight; 20% obese
• Most research focused on women
  – > 50% US women overweight/obese
  – 1/3 UK women overweight; ¼ obese

** Hunskaar, 2008; Subak, et al, 2009
BMI and Type of UI in Women**

- **Clear dose-response effect: Increased weight=increased UI**
  - 2X-4-5X increased risk (odds ratio)
- **Stress UI**
  - BMI >35: 2X risk any UI; 3.1X risk severe UI
  - BMI >40: 2.2X risk any UI; 4.1X risk severe UI
- **Urge UI**
  - BMI >35: 1.4X risk any UI; 2.5X risk severe UI
  - BMI >40: 1.9X risk any UI; 3.9X risk severe UI
- **Mixed UI**
  - BMI >35: 3.6X risk any UI; 5.5X risk severe UI
  - BMI >40: 3.9X risk any UI; 6X risk severe UI

** Hannestad, et al
Obesity and UI: Impact of Age**

** Chiarelli, et al
Epidemiology: Summary

• Overweight/obesity important UI risk factors
  – Each 5-unit increase in weight associated with 20-70% increase in risk of daily UI
• Obesity strong risk factor
• UI in women associated with higher BMI
• Most studies: stronger association for stress/mixed UI than urge/OAB
• Little known about impact of body fat distribution
  – Nurse’s Health Study data
Obesity and UI: What Causes It?

• Added weight?
  – Long term impact of obesity on pelvic floor\(^1\)
  – Increased intra-abdominal pressure? \(^2\)

• Age/Chronicity of condition?
  – Risk of stress UI greater in women obese for \(> 30\) years\(^1\)
  – Other factors? \(^3\)

• Additional research necessary

Obesity and UI: Consequences

• Obesity alone:
  – Decreased function
  – Increased risk NH placement
  – Increased mortality and morbidity
  – UI, FI, POP

• Obesity and UI:
  • Pressure ulcers, skin infections, indwelling urinary catheter
  • Decreased QOL; need for more research re: impact
Obesity and UI: Assessment/Evaluation

• History
  – Identify UI or other urologic issues
  – Thorough, and inclusive of weight history
• Physical Examination
• Diagnostic Tests
• Determine plan for treatment/management
Physical Examination

• Calculate BMI
• Abdominal: identify bladder fullness, tenderness, masses
• Genital: irritation, lesions, d/c, atrophic vaginitis, POP, vaginal muscle strength
• Rectal: tone, nerve innervation, muscle strength, constipation, BPH
• Skin
Diagnostic Tests

- U/A and urine culture
- Labs: ???
  - electrolytes
  - BUN, creat
  - thyroid function
  - glucose
- PVR: ? By ultrasound or straight catheter
Diagnostic Tests: Urodynamic Studies (UDS)

• Many studies of obesity and UI do not publish UDS results

• Sugerman, et al and Noblett, et al
  – Elevated $P_{\text{abd}}$ and $P_{\text{ves}}$ in patients with increased abdominal diameter and BMI

• Dietel, et al and Bump, et al
  – For patients with significant weight loss: improvements in stress UI, decreased $P_{\text{ves}}$, cough pressure transmission and urethral mobility
Obesity and UI: Non-Surgical Management

• Weight Loss:
  – Subak, et al, 2005
  – Subak, Wing, et al 2009
Obesity and UI: Non-Surgical Urologic Treatments

• PME/Behavioral UI Therapies?
    • Found no evidence for effect of PME

• Medications
Obesity and UI: Surgical Treatment

• For UI:
  – Concerns about safety/feasibility of surgery
  – Some evidence re: TVT
  – Treatment of FI and POP

• For obesity:
  – Reviews of bariatric surgical procedures
    • Hunskaar, 2008; Subak, et al 2009
Roux-en-Y Gastric Bypass

- Esophagus
- Small Pouch
- Stomach
- Duodenum
- Staples
Weight Loss Surgery in Morbidly Obese Women

** Burgio, et al 2007
Obesity and UI in Long-Term Care

**Obesity in Older Individuals**

- 1992-2002: % newly admitted obese residents increased from 15% to > 25%.
- 30% of those with BMI of >35.0 were < 65
- 77% female
- 13.4% non-Hispanic black

**Obesity and Continence Care**

- Rogers, et al, 2008: NH residents weighing ≥250 pounds at admission were 2X as likely to have an indwelling catheter as those < 250 pounds
- Bradway, et al: 2010
Continence Care for Obese NH Residents*: Methods

- Qualitative descriptive design
- Medical record review
- Interviews of nurses caring for obese residents
- Interviews of obese residents
- Direct observation of care between nursing staff and obese residents

* Bradway, et al, 2010
## Description of the Sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Resident Participants (N=5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age (years)</td>
<td>65 (range=47-75)</td>
</tr>
<tr>
<td>Race</td>
<td>African American=1</td>
</tr>
<tr>
<td></td>
<td>White=4</td>
</tr>
<tr>
<td>Female Sex</td>
<td>n=3</td>
</tr>
<tr>
<td>Mean Weight (pounds)</td>
<td>323 (range=273-428)</td>
</tr>
<tr>
<td>Mean Body Mass Index</td>
<td>53 (range=50-57)</td>
</tr>
<tr>
<td>Urinary Incontinence</td>
<td>n=3*</td>
</tr>
<tr>
<td></td>
<td>Functional=3</td>
</tr>
<tr>
<td></td>
<td>Urge=1</td>
</tr>
<tr>
<td></td>
<td>Urinary Retention=1</td>
</tr>
<tr>
<td>Fecal Incontinence</td>
<td>n=3*</td>
</tr>
<tr>
<td>Strategies for Managing UI</td>
<td>Anticholinergic Medication n=1</td>
</tr>
<tr>
<td></td>
<td>Pads/products n=3</td>
</tr>
<tr>
<td></td>
<td>Indwelling urinary catheter n=1</td>
</tr>
</tbody>
</table>
Findings

• Three primary themes

• From interview and observational data:
  
  *Obese and Incontinent Day to Day*
  
  *Fitting In the Environment*
  
  *“It’s Rough...But We Want to Do It”*
Dealing with Continence and Incontinence

**Indwelling Catheters**
- “I had one [an indwelling urinary catheter] when I first came here. After about a month, it was removed. I asked them to replace it, but was told they were not allowed to do that…I think it helped keep me dry. Even if [I get the urge]…call the nurse, they might not get here in time, and then I get wet…”

**Complex Schedules**
- “[The NAs] need a Hoyer lift to get me out of bed because I can’t bear weight. I can’t use a toilet or bedside commode, so I wear a diaper. I’m out of bed from 11AM-7PM and don’t go the bathroom in-between. The diaper gets wet. I could ask to go to bed at 4PM [and probably not be as wet or maybe even stay dry] but I want to stay up until 7PM…it’s a choice I make.”
Fitting in the Environment

- Tight spaces
- Working with equipment and products
- Fitting in
Working with Equipment and Products

- [It would be] “nice to have a shower stretcher that fits the patients better, but if they [facility] got it, it would not fit through the doorway to the patient’s room or the doorway to the shower.” (Nurse participant #3)

- “diapers are scratchy, especially if you are overweight...if the diaper does not fit the tabs end up not being closed, then the tabs lay against the skin and rub the area. They stick to you...those plastic tabs are sharp!”
“It’s Rough...But We Want to Do It”

• Time and staffing

• Physically exhausting and challenging care

• Caregiving with respect and dignity
Physically Exhausting and Challenging Care

• “It’s really rough. It’s hard on us. It takes a couple people [and] sometimes it is too much”

• [The] “wear and tear on your body [is] not discussed...We hear about good body mechanics, and we DO that, but when you are moving a very large person, EVEN WITH good mechanics, your shoulders hurt when you get home, just from the extra pushing with your body.”

• “Your hand is in pain when you have to hold up that belly and then try to wash.”
Study Discussion/Conclusions

• Pilot study with small sample size
• First study to observe and interview residents and staff re: continence and obesity
• Obese residents younger and heavier than “typical” LTC resident
• At high risk for incontinence and containment problems
• Need for evidence re: use of indwelling urinary catheters
• Products, supplies, and equipment impact continence care
• Residents and staff acknowledge environmental issues and physical burden
Case Study*

- 72 y.o. male, BMI 50.2
- Incontinent of bowel and bladder
- 2-3 certified nurse assistants to bathe/shower
- 105 minutes
  - Vs. 45 minutes for non-obese patient**

- Rose, et al, 2007; Bradway & Felix, under review
Effect of Weight on IDUC Use Among LTC Facility Residents*: Methods

- Longitudinal cohort design
- Medical record review
  - All federally certified LTC facilities in Arkansas
  - MDS data from all older adults admitted during quarter one in 2008 (N=3,879)
  - All 4 quarters during a one year period examined
- Descriptive stats to characterize LTC residents
- Generalized estimating equation (GEE) model to examine effect of obesity on indwelling urinary catheter use over time

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<th>Resident Participants (N=3,879)</th>
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<tbody>
<tr>
<td>Mean Age (SD)</td>
<td>84.1 (8.4)</td>
</tr>
<tr>
<td>*African American</td>
<td>10.2% (N=393)</td>
</tr>
<tr>
<td>*Female Sex</td>
<td>66.9% (N=2593)</td>
</tr>
<tr>
<td>Underweight (BMI &lt;18.5)</td>
<td>9% (N=346)</td>
</tr>
<tr>
<td>Normal weight (BMI 18.5-24.9)</td>
<td>43.5% (N=1673)</td>
</tr>
<tr>
<td>Overweight (BMI 25-29.9)</td>
<td>27.8% (N=1067)</td>
</tr>
<tr>
<td>Obesity (BMI 30-34.9)</td>
<td>11.89% (N=456)</td>
</tr>
<tr>
<td>Severe obesity (BMI &gt; 35)</td>
<td>7.9% (N=302)</td>
</tr>
</tbody>
</table>
Results: At Admission

- Prevalence rate of IDUC: 16.8%; decreased to 4.1% by 4\textsuperscript{th} quarter
- Obese had higher prevalence of IDUC than non-obese (19.4% vs 16.2%; p=0.034); borderline significance at 2\textsuperscript{nd} quarter (p=0.09); no difference in 3\textsuperscript{rd} and 4\textsuperscript{th} quarters
Results: GEE Model

- Obese residents (BMI 30-34.9) had increased odds (OR=1.69) of having IDUC; not statistically significant (p=0.40)
- Only significant association was re: time
  - Over time, likelihood of IDUC was significantly lower (p=0.04)
- Trends:
  - Females less likely (OR=0.67; p=0.09) to have IDUC than males
  - AA more likely (OR=1.6; p=0.08) to have IDUC than Caucasians
• Higher than national quality benchmark rate at admission for IDUC use in all residents as well as obese residents
• Substantial decrease in IDUC use within one year
• Obesity did not increase risk of IDUC use, except at admission
• Need for additional examination of race and gender
Implications for Practice and Research

- Indwelling catheter use
- Use of anticholinergic medications
- Incorporation of behavioral strategies
- Dually incontinent residents
- Time, effort, and costs of care
- Prevention strategies
- Urologic specialists must partner with other providers/specialties
Summary and Conclusions

• Obesity is a strong, independent risk factor for UI
• The exact mechanism is unknown
• Need evidence re: appropriate assessment
• Conservative and surgical weight loss should be considered in obese women with UI
• The NH environment is an area in need of additional research
References

References


References