

ON THE RELATIONSHIP OF OBJECTIVE MEASURES OF INCONTINENCE AND PHYSICAL ACTIVITY IN OLDER WOMEN

Hypothesis / Aims of study

Urinary incontinence is known to be inversely related to activity report, mailed objective measures clinically studied, been documented. clinic to test the on an objective physical activity scores compared to those with a dry standing stress test, and H2) in the subset of women who do leak on standing stress test, there will be a positive correlation between self-reported frequency of that leakage and physical activity scores.

Study Design, Materials and Methods

Baseline data were available from 52 women enrolled in a parent prospective clinical trial. Criteria were: female, 60 years or older, ambulatory, mentally intact with Mini-Mental State scores above 23, community dwelling, and self-reported history of leakage with coughing. Exclusion criteria included prior urethral or bladder surgery, current urinary tract infection, or prolapse below the level of the hymenal ring. Women with symptoms of urge incontinence in addition to stress urinary incontinence were permitted to participate. Presence of objectively tested stress-related urine loss was demonstrated by a paper towel standing stress test using 3 hard coughs (designated the 'SST').

Frequency of stress-related urine loss was determined by questionnaire prior to the standing stress test using the following question: "Do you ever leak urine or lose control of urination during physical activity?"; response categories were: 'never', 'few times per year', 'few times per month', 'few times per week', or 'daily'. Physical activity was measured via the Yale Physical Activity Survey (YPAS), a reliable and well-validated interview instrument specific to older adults [3] with two components: the YPAS I elicits information about very specific physical activities and the YPAS II is calculated for general activity categories and includes a seasonal adjustment.

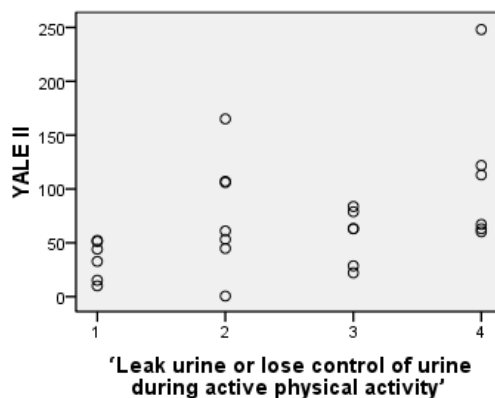
Results

Of the n=46 participants who had complete data report of UI with cough, 67% demonstrated as positive for leakage on the SST. An t-test was conducted to compare the YPAS negative (n=15) and SST positive (n=31) women, and YPAS II scores independently for analysis. no statistical difference was found between higher physical activity scores were found for (mean [SD]: 125.70 [70.12] points) compared to (77.56 [57.79] points, $P < .05$). The magnitude of means was large (eta squared = 0.12), indicating demonstrable stress incontinence participate less

To further explore the data, the YPAS II scores subset of participants with positive SST and the questionnaire item regarding leakage during (n=25). A positive correlation between the YPAS frequency of leakage experienced ($R=0.446$, $p=0.025$) was demonstrated, indicating that when women with demonstrable SUI do participate in greater activity levels it is indeed associated with greater frequency of leakage. Figure 2 portrays the Yale II data and questionnaire item data graded leakage few/year (coded 1) few/mo (coded 2) few/wk (coded 3), or daily (coded 4).

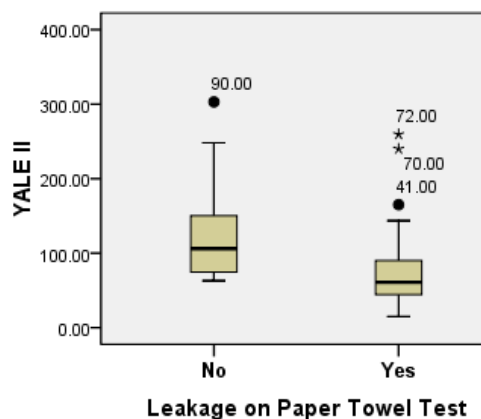
Interpretation of Results

Of the women who reported leakage on coughing, those with demonstrable leakage showed curtailed physical activity levels compared to those who were dry on SST. These findings are further strengthened by the fact that reported leakage frequency with physical activity was positively correlated with the YPAS II score. These findings are consistent with our hypotheses and support prior work from survey data, while adding specificity of incontinence type through objective demonstration of stress-type leakage. Although our study design cannot speak to cause and effect, our data suggest that SUI is a barrier to physical activity because as an incontinent older woman increases her physical activity she experiences the negative feedback of increased frequency of urinary leakage. We speculate that the YPAS I did not show differences between women with and without positive



BETWEEN URINARY ACTIVITY IN

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including subjective stress incontinence independent-samples scores for SST using both YPAS I For YPAS I scores, groups. For YPAS II, SST negative women SST positive women the differences in the that women with in physical activity.

were analyzed in a positive response to physical activity physical activity II score and the

standing stress test because of its focus on very specific activities, such as childcare, golfing, or home repair, which study participants may or may not be engaged in due to person preference, income, or social situation.

Study Limitations: Our sample size was small, however adequate power was indicated by the large effect size demonstrated in the analysis using the YPAS II scores. A larger sample may offer more insight into the YPAS I score analysis. Use of longitudinal data would permit determination of whether the onset of stress incontinence predicts a decrease in physical activity in women or, alternatively, if lower activity levels predates stress incontinence onset.

Concluding Message

This study underscores and adds to the accumulating body of evidence on the potential negative effect that objectively demonstrable stress incontinence can have on the physical activity of older women. Clinical implications of the findings point to use of pessaries or other forms of treatment for exercise-related exacerbation of symptoms, a component that should not be overlooked in a population of older clinical patients with mixed urinary incontinence.

References

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3. Dipietro, L., Caspersen, C., Ostfeld, A., & Nadel, E. (1993). A Survey for Assessing Physical Activity Among Older Adults. *Medicine and Science In Sports and Exercise*, 25(5), 628-642.

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<i>Is this a clinical trial?</i>	Yes
<i>Is this study registered in a public clinical trials registry?</i>	No
<i>Is this a Randomised Controlled Trial (RCT)?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	University of Michigan Institutional Review Board, IRBMED #93-384
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes