A Research Approach to Determine the Prevalence of Urinary Incontinence in Competitive Collegiate Female Athletes

Katelyn Keith, Abbey Norris, Jessica Showalter,
M. Paige Stringer, Lauren Waits
Faculty: Jennifer Celso

Department of Physical Therapy, College of Health Professions

Abstract. The prevalence of urinary incontinence (UI) is well documented in the adult female population, but women's health physical therapists have noted it is also affecting younger females. Previous studies focusing on UI in female athletes have provided inconsistent data. This study used self-reported measures to examine the prevalence of UI in female collegiate aged athletes and its impact on their quality of life (QOL). We explored the relationships among prevalence of UI, QOL, sport, and pelvic floor exercise and education. Prevalence of UI was found, and although proven to be a preventative method for stress incontinence, our results found that few athletes perform the recommended amount of Kegel exercises.

1. Introduction

Urinary incontinence is the unintentional loss of urine or the inability to hold urine in the bladder due to loss of voluntary control over the urinary sphincters [1]. The prevalence of urinary incontinence (UI) is well documented in the adult female population. Prevalence of incontinence in female athletes has been studied; however, data is inconsistent and discrepancies exist in results. Physical therapists specializing in women's health and pelvic floor dysfunction play a key role in helping women with UI. Quality of life may also be adversely affected by urinary incontinence due to anxiety, social stigma, embarrassment, and decreased involvement in social activities [2]. The purpose of this study was to examine the sport-specific prevalence of UI in female college-aged athletes, as well as the association between prevalence and number of Kegels performed daily, prevalence and instruction method of Kegel exercises, and prevalence and quality of life (QOL).

2. Experiment, Results, Discussion, and Significance

Subjects

Subjects were selected based on their gender and participation in collegiate athletics. Subjects were excluded if they had previously been pregnant, were currently medically redshirted, or if they had any kind of injury or condition that could result in weakening of the pelvic floor.

Instrument

The International Consultation on Incontinence Questionnaire- Female Lower Urinary Tract Symptoms (ICIQ-FLUTS) was chosen to assess the prevalence of UI in the given population. In addition to this self-report questionnaire, each participant completed additional questions created by the research team and guided by a professional in the field of women's health physical therapy. These questions assessed the nature and frequency of the participants' sport as well the extent of their exposure to pelvic floor training. The ICIQ is based on the previously validated Bristol Female Lower Urinary Tract Symptoms- Short Form (BFLUTS-SF).

Procedures

Each participant received a survey packet including a consent-by waiver form and the two surveys, the ICIQ-FLUTS and one created by our research team (the Female Athlete Urinary Incontinence Questionnaire). The survey packet was filled out by the athletes during their scheduled time and then returned to the research team in manila envelopes to ensure privacy. Upon receiving the completed surveys, data collected was interpreted.

Data Analysis

Data analysis was performed using IBM SPSS program. Frequency analysis and Chi Square analysis were used to determine results. Frequency was used to calculate the associations between prevalence and sport, prevalence and number of Kegels performed daily, prevalence and instruction method of performing Kegels, and prevalence and quality of life. Chi Square was used to examine associations between groups.

Results

Out of 105 participants 21 (20.0%) responded as experiencing UI, while 84 (80.0%) responded that they do not experience UI. Regarding instruction about Kegels; of those that experience UI, 52.4% received

instructions verbally, while 14.3% received written instruction. Regarding instruction about Kegels; of those who do not experience UI, 50.0% received verbal instruction and 7.1% received written instruction.

Table 1
UI by Sport

	Have UI		Do not have UI	
Basketball	5	45.50%	6	54.50%
Volleyball	5	27.80%	13	72.20%
Track	5	31.30%	11	68.80%
Field	1	6.30%	15	93.80%
Cross Country	1	100%	0	0.00%
Golf	0	0.00%	6	100%
Softball	2	10.00%	18	90.00%
Tennis	0	0.00%	9	100%

Table 2
Number of Kegel Exercises Performed Daily

	Those Who Did Not Have UI		Those Who Have UI	
0	54	64.30%	10	47.60%
5 to 10	10	11.90%	3	14.30%
11 to 20	8	9.50%	4	19.00%
21 to 40	10	11.90%	2	9.50%
41 to 60	1	1.20%	0	0.00%
61 to 80	1	1.20%	1	4.80%
> 201	0	0.00%	1	4.80%
	n=84		n=21	

Discussion

This study demonstrates a significant relationship between sport and prevalence of UI. However, the low number of participants representing cross country, golf, and tennis do not sufficiently reflect characteristics of all participants in that collegiate sport, making the significance suspect. For this reason, the results must be interpreted with caution.

Number of Kegels performed daily and prevalence of UI were assessed. Regardless of experiencing UI or not, the majority of the participants surveyed completed zero Kegels daily, despite recent studies showing 30-80 Kegels are recommended for maintenance of continence [3].

If the participant received verbal instruction it was primarily provided by an athletic trainer, not by a medical professional. Approximately half of the participants experiencing UI received verbal instruction on performing Kegel exercises. If 52.40% of participants experiencing UI receive verbal instruction, one would expect to see a similar percentage doing the recommended number of Kegels. However, Table 2 shows only 4.80% of participants who experience UI completed the recommended daily number of Kegels. The authors question if the disconnect between the 52.40% receiving verbal instruction and the 4.80% actually performing the recommended amount is due to the source of instruction (coach, PCP, OB/GYN, AT, parent, other), method of instruction (written, verbal), or insufficient quality of instruction. It is important for medical professionals to be proactive in instructing females at all ages about maintenance of continence.

QOL was implied in this study based on how participants responded to a bothersome scale (0= not bothersome to 10=extremely bothersome). Questions 7-9 on the BFLUTS assessed situational UI and whether or not the presence of UI had an effect on QOL. Of those who reported leakage when coughing, sneezing, upon exertion and with physical activity, 23% responded that their leakage bothered them.

3. Conclusions

Prevalence of UI was found in nulliparous college-aged female competitive athletes. Although proven to be a preventative method for stress incontinence, our results show that few young female athletes are performing the daily recommended amount of Kegel exercises. Further studies should explore preventative physical therapy interventions through education of younger athletes for the medical condition of UI, now that prevalence has been proven in this population. Additionally, further studies of the impact of UI on QOL should be explored.

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4. References

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