

528 Associations between Financial Strain and Bladder Health among Women: Underutilization of Healthcare as a Potential Mediator

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Background

- Social determinants of health (SDoH) – such as food insecurity, housing insecurity, unreliable transportation, and difficulty paying for utilities – are associated with overactive bladder, stress urinary incontinence, urge urinary incontinence, and other lower urinary tract symptoms (LUTS) [1].
- Different mechanisms may explain associations between SDoH and LUTS:
 - Less access to and utilization of healthcare [1,2]
 - Cumulative damage to biological systems through stress responses [3]

Study Aim

- Examine whether underutilization of healthcare, assessed in 2005-06 and 2010-11, mediates a potential association between financial strain, assessed in 1995-96 and 2000-01, and LUTS and their impact, assessed in 2012-13

Methods

- **Source of Data:** CARDIA is a prospective cohort study of the development of cardiovascular disease (CVD) that recruited 5,115 Black and White women and men aged 18-30 years at baseline (1985-86) from the populations of four U.S. cities (Birmingham, Alabama; Minneapolis, Minnesota; Chicago, Illinois; Oakland, California).
- **Analytic Sample:** Women with complete data for analyses involving mediation tests of data collected at 4 assessments (n=951).
- **Assessment of Financial Strain:** Separate dichotomous variables were created to indicate how hard it was for women and their families to pay for (1) the very basics like food and heating and (2) medical care in 1995-96 (Year 10) and 2000-01 (Year 15).
 - Responses of “not very hard” were coded as 0, and all other responses were coded as 1.
 - “Difficulty paying for the very basics” and “difficulty paying for medical care” variables were created by summing across values for each of the two assessments (range of values, 0-2).
- **Assessment of Healthcare Access – Underutilization of Care:** In 2005-06 (Year 20) and 2010-11 (Year 25), women were asked whether there was any time during the past two years when they did not seek medical care because it was too expensive or health insurance did not cover it, excluding dental care.
 - Responses of “yes” were coded as 1; responses of “no” were coded as 0.
 - An “underutilization of care” variable was created by summing across values for each of the two assessments (range of values, 0-2).
- **Assessment of LUTS and Their Impact:** In 2012-13 (Post-Year 25), self-reported data on LUTS and their impact were collected.
 - A LUTS/impact composite variable was previously developed through a cluster analysis of four constructs: UI severity, UI impact, other LUTS severity, and other LUTS impact [4].
 - Women were classified into bladder health (44%) versus mild (31%), moderate (20%), or severe (5%) symptoms/impact clusters.
- **Analysis:** Structural equation modeling was conducted to simultaneously estimate direct and indirect effects of financial strain variables on LUTS/impact, with underutilization of healthcare as a potential mediator.

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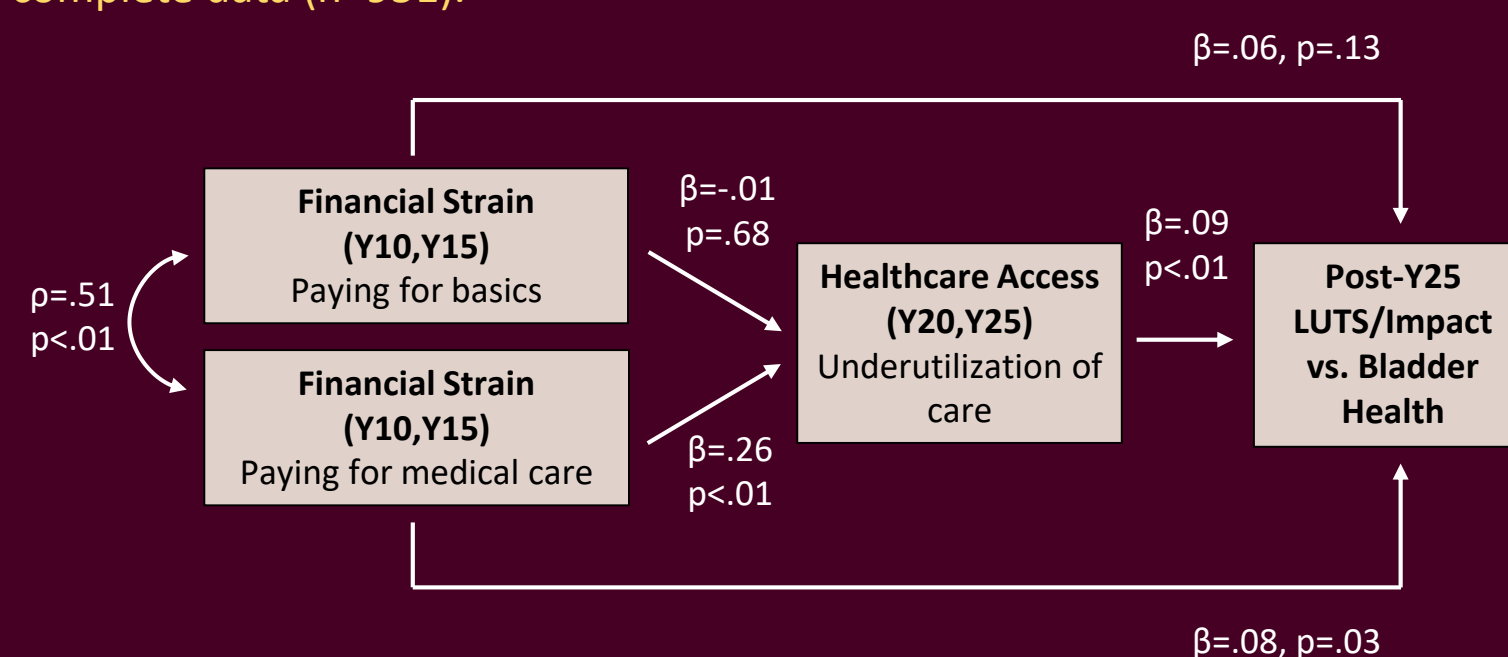
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Results

Table. Percentage of CARDIA women reporting financial strain and underutilization of healthcare, within total sample and by 2012-13 LUTS/impact cluster categories (n=951).

	2012-13 LUTS/Impact Cluster Categories				
	Total Sample	Bladder Health	Mild LUTS/Impact	Moderate LUTS/Impact	Severe LUTS/Impact
	n=951	n=399 (42%)	n=310 (32.5%)	n=199 (21%)	n=43 (4.5%)
	% Yes	% Yes	% Yes	% Yes	% Yes
Financial Strain – Paying for Basics					
1995-96	25.3	20.6	29.7	25.6	37.2
2000-01	19.0	14.5	22.3	19.1	37.2
Financial Strain – Paying for Medical Care					
1995-96	21.8	17.3	21.9	29.1	27.9
2000-01	15.8	12.5	15.5	19.6	30.2
Healthcare Access – Underutilization of Care					
2005-06	10.8	10.0	9.0	15.1	11.6
2010-11	14.9	11.0	14.2	20.1	32.6

Figure. Direct and indirect effects of financial strain variables on 2012-13 LUTS/impact cluster group membership among CARDIA women with complete data (n=951).



Explanation of Figure: When difficulty paying for the very basics and medical care were adjusted in the same model, only difficulty paying for medical care was directly associated with greater LUTS/impact (see bottom arrow; $\beta = .08$, $p = .03$). Difficulty paying for medical care was also indirectly associated with greater LUTS/impact through underutilization of healthcare (see bottom mediation pathway; $\beta = .26$ $p < .01$; $\beta = .09$ $p < .01$).

Study Limitations

- LUTS and impact were not assessed during the first 25 years of the CARDIA cohort study, which was designed to study the etiology of cardiovascular disease.
 - This prevented examination of incident LUTS or change in LUTS/impact over time.
 - It is conceivable that LUTS/impact may lead to financial strain, or that financial strain may lead to progressively worse LUTS/impact among those who already have symptoms.

Conclusions

- Financial strain may constrain other SDOH that are meant to be health promoting – namely, utilization of healthcare.
- In the present study, however, healthcare utilization only partially explained an association between financial strain and LUTS/impact.
- Research is needed to examine other mechanisms that may explain the association between financial strain and LUTS/impact, such as stress responses.
- This study and others may inform interventions to increase access to LUTS treatment and ameliorate financial strain.

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