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WHAT ARE THE DETERMINANTS OF DEMAND FOR CARE IN URINARY INCONTINENCE? ANALYSIS OF A COHORT OF 2273 WOMEN.

Hypothesis / aims of study
Urinary incontinence (UI) is a very common symptom in women. It is reported by more than 50% of women after 50 years and it is causing health costs estimated at over $ 4 billion per year in France. Despite the frequency and cost of this disease, the care pathway of women remains unknown. We do not know what proportion of women who report the symptom, suffer in their daily lives and how many are seeking treatment. Individual determinants that lead to care are unknown. The exact proportion of care undertaken has not been studied in a general population out of recruiting by healthcare facilities.
It is plausible to assume that the demand for care is proportional to the severity of symptoms and impact on quality of life. But it is also likely that social factors, such as social support or the quality of relationships with peers, can influence the demand for care. The ICS was holding in its former definition of the concept of urinary incontinence as hygienic or social problem.
Our main objective in this cohort study is to analyze what are the individual determinants (severity of disorder, of course, but also social relations and socio-economic) that lead to the demand for care in the field of urinary incontinence in women after 50 years. Our secondary objective is the study of the satisfaction of women who sought care for urinary incontinence. In a first questionnaire women were interviewed about their urinary incontinence and were asked, 8 years later, about consultations undertaken and care because of urinary incontinence.

Study design, materials and methods
Our sample consists of women aged 55 to 69 years participating in the GAZEL cohort (www.gazel.inserm.fr). The women included were employees of the French public power company's volunteered to respond to self-health questionnaires. They receive a generic health questionnaire every year and a questionnaire specific to women's health every 3 years. The women were interviewed in detail in 2000 on urinary incontinence. Additional data were collected in 2008 through a new questionnaire that focused on urological disorders and medical care undertaken since 2000. Of the 3907 women contacted in 2008, we received 3220 responses (82%). Among the 2640 women who had responded in 2000, 2273 (86%) responded again in 2008 and constitute our sample for this analysis.
The variables used in the analysis are the demographic characteristics of women (age, educational level, occupation, household income, marital status, parity, number of people per household), social relationships (social support, relationships with peers, index social network), the severity of urinary incontinence in 2000 and its impact on quality of life measured by a generic questionnaire (NHP) and a specific questionnaire (Contilife), lifestyle (smoking, of alcohol, exercise), other health points (BMI, chronic diseases like diabetes or endocrine disease, hypertension or cardiovascular disease, history of depression, perceived health, medication taken).
Demand for care is defined as any consultations for urinary incontinence between 2000 and 2008. Women who consulted for urinary incontinence between 2000 and 2008 were asked whether the consultation met their expectations.

Results
The 2273 respondents in 2008 did not differ from the 265 non-respondents for parity, BMI, social support, relationships with peers, urinary disorders in 2000, or taken drugs. In contrast, respondents had a higher occupational status, fewer people at home, did more sports, suffered less from hypertension and consumed fewer sleeping pills.
Between 2000 and 2008, 348 (15.3%) had consulted one or more times for UI. They were satisfied (somewhat, very or completely) by the consultation in 75% of cases. Treatment was undertaken in 157 cases (73.9%). The treatment outcome was consistent with or exceeds the expectations of women in 137 cases (53.3%). There was an association between impaired quality of life urinary (Contilife) in 2000 and consulting for UI between 2000 and 2008, this change affected all Contilife dimensions except for the dimension sexuality.

Table: Determinants associated with consultation for UI between 2000 and 2008, Multivariate models (N = 2273).

Women characteristics	Model1 adjOR (95%CI)	Model 2 adjOR (95%CI)	Model 3 adjOR (95%CI)	Final model adjOR (95%CI)
Parity ≥2	1.5 (1.1-1.9)			
Number of people in household ≥3	0.7 (0.5-1.0)			
Index of low social network	1.4 (1.0-1.8)			
Medium social support	1.3 (0.9-1.7)			1.2 (0.9-1.7)
Low social support	1.7 (1.2-2.4)			1.5 (1.1-2.1)
Unsatisfactory relationship	1.2 (0.9-1.6)			
Household income 1600-2600€	1.5 (0.9-2.5)			1.4 (0.8-2.4)
Household income >2600€	1.8 (1.1-3.0)			1.8 (1.1-2.9)
UI hygienic or social problem		1.4 (1.0-1.9)		
Slight UI		4.8 (3.3-7.1)		3.5 (2.5-4.9)
Moderate UI		10.0 (6.7-15)		8.2 (5.4-12)
Severe UI		23.1 (15-37)		20.9 (13-34)
Symptom score 6-9			1.3 (1.0-1.8)	
Symptom score 10-12			1.7 (1.2-2.5)	

Middle NHP score	1.4 (1.0-1.9)	1.4 (1.0-1.9)
Bad NHP score	1.6 (1.2-2.2)	1.4 (1.0-2.0)
Nervous system disease	1.6 (1.1-2.3)	1.8 (1.1-2.79)
Hypertension	1.2 (0.9-1.6)	

The multivariate analysis showed that the consultation for UI was associated with low social support, high-income household, UI severity, impaired generic quality of life and disease of the nervous system (Table).
The probability of not being satisfied or poorly satisfied after consultation for UI was associated with low social support (2.1, 1.2-3.8), and a moderate or severe UI (2.3, 1.3-4.1).

Interpretation of results

In our population of women aged 55 to 69 years, the severity of UI is the main reason for the consultation. Other factors associated with the consultation are high income, social isolation, impairment of health-related quality of life and diseases of the nervous system. Two of these factors, the severity of UI and social isolation are risk factors of dissatisfaction following the consultation for UI.
It seems obvious that more the UI is severe and more there is a demand for care. But to confirm this clinical intuition is more difficult than it seems, since it requires to have a sample of women likely to suffer from UI, to ask them about their urinary symptoms and then followed them a sufficient period of time. Our cohort study conducted over a period of 8 years confirms this clinic intuition on a large sample. The data collected by the GAZEL cohort allow us to test many other factors as occupational, social, demographic or medical characteristics.
In case of UI symptoms, women who have a strong social support are likely to receive help and advice, while the woman with low social support will consult her physician. It is also likely that UI is not a priority in case of low income. The poor quality of life related to health probably increases the number of medical consultations and therefore increases the opportunities to seek care for urinary disorders. The role of neurological sickness needs to be clarified.
A weakness of our study is that the use of care, consultation and treatment is declaratory and not verified by data from health insurance.

Concluding message

Our study shows that besides the severity of symptoms consultation for UI can also be a result of low social support, higher incomes, poor quality of life and neurologic disorders.

Specify source of funding or grant	**IRESP (French Institute for Public Health Research)**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**It is an observational study by postal questionnaire and inclusion in the GAZEL cohort was on a voluntary basis. In this case an ethics committee approval is not required by French Law. Nevertheless the GAZEL cohort scientific committee and the CNIL (French Data Protection Authority) approved the study.**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**