

The individual determinants of care-seeking among middle-aged women reporting urinary incontinence: Analysis of a 2273-woman cohort.

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► **To cite this version:**

Xavier Fritel, Henri Panjo, Noëlle Varnoux, Virginie Ringa. The individual determinants of care-seeking among middle-aged women reporting urinary incontinence: Analysis of a 2273-woman cohort.: The determinants of care-seeking among women reporting urinary incontinence. *Neurourology and Urodynamics*, Wiley, 2014, 33 (7), pp.1116-22. <10.1002/nau.22461>. <inserm-00846030>

HAL Id: inserm-00846030

<http://www.hal.inserm.fr/inserm-00846030>

Submitted on 18 Jul 2013

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1 Abstract

2 Aims: Our main objective was to analyze individual determinants that lead middle-
3 aged women to seek medical care for UI.

4 Methods: Observational longitudinal study among GAZEL cohort participants: 2640
5 women aged 50-62 completed a self-administered questionnaire at baseline. Eight
6 years later (2008) 2273 (86%) responded to a follow-up questionnaire. Seeking care
7 for UI was defined as any consultation for UI during the 8-year follow-up period.
8 Individual determinants considered in the regression analysis were social and
9 demographic characteristics, social relations, UI type and severity, and other health
10 factors.

11 Results: Among 1192 women reporting incontinence at baseline, 24.4% had visited a
12 physician at least once for UI during the follow-up period (56.0% of those reporting
13 severe UI). The care-seeking rate increased with age at baseline. Multivariate
14 analysis showed that women who reported severe UI (OR= 4.1; 95%CI 2.6-6.5),
15 mixed UI(2.0; 1.3-3.0), or neurologic disease (1.6; 1.1-2.6), had weak social support
16 (1.4; 1.0-2.0), or talked about their UI with close friends or family (1.5; 1.0-2.1) were
17 more likely to seek care for UI. A model including these factors had a 78% probability
18 of correctly differentiating women with incontinence who chose to seek care from
19 those who did not. Our analysis could not take factors related to the organization of
20 health services into account.

21 Conclusions: Women do not always seek care for UI, even when it is severe. Besides
22 UI severity and type, consultation is associated with aging, weak social support,
23 conversation about it with close friends and family, and neurologic disorders.

24

25 Keywords: female urinary incontinence, care-seeking, longitudinal study

26

27 Introduction

28 Urinary incontinence (UI) is a common symptom in women, one that can cause
29 disability and healthcare expenditures. In a European study of 17 080 women, 35%
30 reported UI; among the latter, only 31% had ever consulted a physician about UI, 5%
31 had used medication for it, and 5% had undergone surgery for it [1]. In the United
32 States the percentage of hospital admissions with a primary diagnosis of UI was
33 44/100 000 in 2000, and the number of outpatient visits 1 845/100 000 [2]. The direct
34 cost of UI in the US was estimated at \$12.4 billion in 1995 [3]. In France and
35 elsewhere, health authorities are actively taking steps to improve care for UI.

36 The demand for care appears to be associated with UI severity [4], and is likely to be
37 proportional to both the severity of symptoms and their impact on quality of life (QoL).
38 It is also likely that social factors, such as social relations, can influence the demand
39 for care. Women may obtain advice from their close friends and family and thus
40 consult their physician less often. But women with strong social relations may also be
41 more likely to receive advice from their relatives to seek care. Middle-aged women
42 often rely on advice from friends and family for their menopause symptoms [5]. A
43 better understanding of the determinants of care-seeking could help adapt health
44 policy in the domain of UI and improve its management.

45 Our main objective in this longitudinal study in the GAZEL cohort was to analyze the
46 individual determinants (severity of disorder, social relations and social and
47 demographic characteristics) associated with seeking care for UI among middle-aged
48 women. Our secondary objective was to analyze the characteristics associated with
49 satisfaction after a medical consultation for UI and after treatment.

50

51 Population and Methods

52 Our sample consisted of middle-aged women participating in the GAZEL cohort,
53 made up of employees of the French public power company who had volunteered in
54 1989 to respond to various self-administered health questionnaires, then and in the
55 years to come (www.gazel.inserm.fr) [6]. They were 50-70 years of age during the
56 period of this study — from 2000 to 2008. In 2000 (baseline), they were questioned in
57 detail about lower urinary tract symptoms [4,7,8]. Additional data were collected in
58 2008 (follow-up) in a questionnaire focusing on lower urinary tract symptoms,
59 doctors' visits, and health care since 2000. Of the 2640 women who had responded
60 in 2000, 2273 (86%) responded again in 2008; they constitute our sample for this
61 analysis.

62 Seeking UI care was defined as any office visit for UI during the follow-up period. The
63 question asked of each participant was “Since the year 2000, have you consulted a
64 doctor about involuntary urine leakage?” Those who answered yes to the question
65 were asked if the medical visit met their expectations (“not at all”, “a little”,
66 “somewhat”, “very”, or “completely”). Dissatisfaction was defined by an answer of “not
67 at all” or “a little”. Women with doctors' visits for UI were questioned about the
68 treatment provided and whether if its results met their expectations (“poorer than”,
69 “the same as”, or “better than” expected).

70 Independent variables considered were social and demographic characteristics (age,
71 educational level, occupation, household income, size of the city of residence, parity,
72 number of people living in the home, and marital status), and lifestyle data (smoking,
73 alcohol consumption, and physical exercise). Data about social network (an index
74 based on marital status, contacts with children not living at home, parents, parents-
75 in-law, other family members, and friends, and participation in voluntary groups or

76 associations), social support (a scale based on 2 items about emotional support and
77 2 items about instrumental support), and social satisfaction (a scale based on the
78 quality of relationships with individuals the participant feels close to) came from the
79 New Haven EPESE scale [9]. UI was defined as any involuntary urinary leakage
80 reported during the previous 12 months. The Sandvik UI severity score was
81 computed from UI frequency and amount of leakage [10]. UI type, urgency, and
82 frequency were determined with the BFLUTS questionnaire; women were considered
83 to suffer from stress UI, urge UI, or mixed UI if they answered “sometimes”, “most of
84 the time”, or “all of the time” to the questions: “Does urine leak when you are
85 physically active, exert yourself, cough or sneeze?” or “Does urine leak before you
86 can get to the toilet?” [11]. Additional data about discussing UI with close friends or
87 family, partners or colleagues, were also collected. Health variables considered were
88 body mass index, menopausal status, climacteric symptoms, diabetes,
89 endocrinopathy, hypertension, cardiovascular disease, neurologic disease, chronic
90 bronchitis or cough, lumbar (or sciatic) pain, use of diuretics, antidepressants,
91 sleeping pills or other medications, consultations with their general practitioner, and
92 generic health-related QoL (Nottingham Health Profile).

93 First we compared the characteristics of responders and non-responders. The
94 independent variables considered in the analysis of care-seeking were structured in
95 three dimensions: 1) social and demographic characteristics and lifestyle, 2) UI
96 severity and type, and discussion of UI with others, and 3) other health variables
97 (listed in the preceding paragraph). Bivariate and multivariate analyses for each
98 dimension produced separate multivariate models, one focused on social and
99 demographic variables (Model 1), another on UI (Model 2), and a third on health
100 factors (Model 3). Variables were introduced into each model if they were associated

101 with seeking care for UI in the bivariate analysis with $p < 0.20$. A fourth and global
102 multivariate model included the variables associated ($p < 0.15$) with care-seeking in
103 one of the three preceding models. Forward stepwise regression analyses were
104 conducted for each multivariate model to exclude variables with $p > 0.15$.

105 Analyses of dissatisfaction with the consultation for UI, on the one hand, and with the
106 results of the treatment, on the other, were conducted with the same independent
107 variables. Bivariate analyses were performed to select variables associated with
108 dissatisfaction ($p < 0.20$), which were then introduced into the multivariate models.

109 All multivariate analyses were adjusted for age. To assess the fit of our logistic
110 models and measure their predictive power, we performed a receiver operating
111 characteristic (ROC) analysis. We estimated the area under the ROC curve, that is,
112 the c-statistic (or concordance index). Its value varies from 0.5 (predictive power no
113 better than chance) to 1.0 (perfect predictive power) [12]. We also assessed
114 separately the predictive power of each variable included in the final model for care
115 seeking with the same concordance index. All analyses were performed with SAS
116 software (SAS Institute Inc., Cary, NC, USA).

117 The GAZEL cohort scientific committee and the CNIL (French Data Protection
118 Authority) approved this study. This work was funded by the IRESP (Institute for
119 Public Health Research), which had no role in the conduct of the study or the
120 analysis of the data.

121

122

123 Results

124 The 2273 women responding at follow-up had a higher occupational status, reported
125 fewer people living in their home, were more likely to exercise, and less likely to
126 report hypertension, cardiovascular disease, or use of sleeping pills than the 265
127 non-respondents (Table I).

128 At follow-up, the respondents' mean age was 63 (sd \pm 3.36; range 58-70; no
129 difference with non-respondents, data not shown). At baseline, 52.4% (1192) had
130 reported some UI. Among these 1192 incontinent women, 291 (24.4%) had visited a
131 physician for UI at least once during the follow-up period. This rate increased with the
132 frequency of leakage at baseline: 18.1% (166/916) if less than once a week, 40.0%
133 (56/140) if weekly, and 50.7% (69/136) if daily. It also increased according to age at
134 baseline, 20.6% (58/282) at 49-51 years, 23.9% (91/380) at 52-54, 25.9% (69/266) at
135 55-57, and 27.7% (73/264) at 58-62. Among the 1065 women continent at baseline,
136 the incidence of UI in 2008 was 50.0% (532), and the rate of seeking care for UI
137 during the follow-up period was 5.3% (57).

138 Seeking care for UI was associated with high parity and weak social support (Table
139 II, Model 1), with severe UI, mixed UI, and discussing UI with close friends or family
140 (Table II, Model 2), and with poor QoL, a GP visit during the past 12 months, and
141 neurologic disease (Table II, Model 3). In the final model, care-seeking was
142 associated with severe UI, mixed UI, neurologic disease, discussion about UI with
143 friends or close relatives, and weak social support (Table II). The concordance index
144 of our final model was high (0.78). The c-statistic calculated for each variable
145 included in the final model showed that the four variables that contributed most to
146 predicting care-seeking were UI severity (c=0.74), UI type (c=0.72), discussing UI

147 with friends or close relatives ($c=0.71$), or with colleagues ($c=0.70$). The concordance
148 index for the other variables (age, social support, quality of life, consultation with GP,
149 and neurologic disease) was poor (between 0.52 and 0.58).

150 Of the 348 women (15.3%) who visited a physician for UI during the follow-up period,
151 21.6% (75) were not satisfied with the consultation (Table III). Dissatisfaction was not
152 significantly associated with age (19.6% before 55 versus 25% after). The risk of
153 dissatisfaction was associated with weak social support, urgency, and urge UI (Table
154 IV). Women who reported chronic bronchitis or coughing were less likely to report
155 dissatisfaction (Table IV).

156 During the 8-year follow-up period, 11.9% (270/2273) of the women were treated for
157 UI; treatment outcome was consistent with or exceeded expectations for 52.6%
158 (142/270) (Table III). Satisfaction was not significantly associated with age (47.6%
159 before 55 versus 58.4% after). Women reporting diabetes were more likely to be
160 satisfied with their treatment, and women with mixed UI or those with a poor QoL
161 were more likely to be dissatisfied (Table V).

162

163 Discussion

164 In our sample of 2273 women aged 58-70 years reporting on events over an 8-year
165 period, 348 (15.3%) visited a physician, and 270 (11.9%) underwent treatment for UI
166 during the follow-up period. UI severity at baseline was the main reason for seeking
167 healthcare for it. The percentage of women visiting a physician because of UI
168 increased independently with both age and UI severity; other factors associated with
169 consultation for UI were UI type (mixed), weak social support, discussing UI with
170 close friends or family, and neurologic diseases. Rates of dissatisfaction with the visit
171 and the treatment were 21.6% and 39.6% respectively.

172 It is unsurprising, even obvious, that the more severe the UI, the greater the demand
173 for care. Nonetheless, confirming this clinical intuition requires following a sample of
174 women likely to have UI, characterizing their urinary symptoms, and collecting
175 information over a sufficient period of time. Strengths of our study include its
176 longitudinal nature and our consideration of numerous factors collected in the GAZEL
177 cohort, including occupational, social, demographic and medical characteristics, all of
178 which may influence care-seeking. A cross-sectional study cannot provide a rigorous
179 analysis of the association between current urinary symptoms and past care because
180 the symptoms might have been improved or induced by the treatment, similarly, it
181 cannot indicate whether current wishes for care will be followed up by actual care-
182 seeking.

183 Of 331 women from the Boston area who reported UI on a weekly basis, 45% had
184 sought care at least once [13]. Among those who sought care, 60% received it. In
185 47% of the cases, treatment was pelvic floor muscle exercise. This cross-sectional
186 study found that neither socioeconomic level nor type of health insurance was
187 associated with seeking care or treatment. Despite numerous differences, related in

188 particular to health insurance, survey method, and population, the rates of
189 consultation and treatment in this Boston study are close to those observed in ours.
190 This finding suggests that private health insurance is not a major obstacle to
191 treatment for UI. In another cross-sectional survey, 26% of 6625 incontinent women
192 had seen a physician for their UI [14]. Care-seeking increased with their age, UI
193 severity, UI duration, and urge or mixed UI compared with stress UI. These results
194 are consistent with ours; we showed a higher consultation rate for mixed UI (29.6%),
195 a slightly lower one for urge UI (22.6%), and a rate of 12.9% for stress UI. This higher
196 rate of consultation in case of mixed or urge UI is also found in other surveys [15,16].
197 Urge UI has a greater impact on QoL than stress UI [15]. The multiplicity of
198 circumstances of leakage, their unpredictable character, urgency and abundance
199 may explain this stronger demand for care in women with mixed UI. Our analysis also
200 shows that, at equal levels of severity, those who report urge UI are much more
201 dissatisfied with their medical consultation than the women with stress UI.
202 The women were, for the most part (75%), satisfied with their consultation, but only
203 half (53%) found that the treatment outcome met or exceeded their expectations.
204 Surveys in the general population usually show poor results compared to clinical
205 trials performed by medical experts on selected patients. In the population-based
206 study by Black et al. of women who had surgery for SUI, 28% were cured and 66%
207 reported that the outcome met or exceeded their expectations [17].
208 In our study, more than 40% of the women with severe UI had not discussed it with a
209 physician. The EPINCONT cross-sectional survey found similar results, with no
210 consultation for 46% of the women who reported severe UI [14]. This lack of
211 consultation may be explained by women's belief that UI is a normal consequence of
212 aging or of motherhood, or the embarrassing nature of the situation, reluctance to be

213 treated over a long term, or lack of knowledge about the treatments [18,19]. Other
214 elements may be related to the woman's personality or her social relations. Women
215 who talk about their UI to others are more likely to see a physician for it [16,18]. We
216 found that those who talked about their UI to their family or friends are those who
217 sought care, probably because they were less ashamed or embarrassed about
218 talking about it, whether to friends or a physician.

219 Weak, versus strong social support was significantly associated with a higher rate of
220 care-seeking (20.6% vs 12.4%). We hypothesize that women with UI symptoms who
221 have strong social support are likely to receive help and advice without needing to
222 ask their physician, while those with low social support consult their physicians,
223 perhaps precisely because they have no one else to rely on. Social support was
224 defined by 4 questions exploring instrumental and emotional support, but only the
225 questions concerning instrumental support were significantly associated with care-
226 seeking for UI (data not shown).

227 The rate of consultation for UI was slightly higher among women with poor health-
228 related QoL (20.2%) than among those with a good QoL score (10.7%). Poor health-
229 related QoL probably results in more medical consultations and therefore increases
230 the opportunities to seek care for urinary disorders. Two studies found that women
231 were more likely to request care for UI when they were consulting a physician for
232 another reason than to make a special appointment for it [14,16], and women who
233 consulted their physician for UI have more comorbidities and saw physicians more
234 frequently [18]. It may be that a medical consultation is the occasion for screening for
235 symptoms or diseases not directly related to the initial reason for the consultation.
236 The case of neurologic diseases is particular because in some situations these can

237 affect continence. Unfortunately we do not have details about these neurologic
238 diseases to develop further hypotheses.

239 In France, women may see a gynecologist without having to be referred by their GP;
240 this is not the case for other specialists. This may explain why 53.5% consulted a
241 gynecologist for UI and only 23.6% a urologist. Moreover there were substantially
242 more gynecologists practicing in France than urologists [20].

243 O'Donnell et al found higher consultation rates for women with UI in France (33%)
244 and Germany (40%) than in Spain (24%) or the UK (25%) [16]. These differences
245 may be related to differences in the healthcare system (number of and access to
246 specialists, university training, and information provided to women). Because our
247 study was limited to France, we were unable to test any of these hypotheses. Other
248 potential differences may be demographic, such as parity, or cultural, such as social
249 support; both were significantly associated with seeking care for UI in our analysis.
250 Another limitation of our work is linked to characteristics of the GAZEL cohort, which
251 is made up of present or past employees. Because they were all covered by public
252 health insurance, we were not able to consider the possible effect of that factor. It is
253 interesting to note that many incontinent women do not consult even though they are
254 covered by health insurance. We do not know whether the medical consultations
255 involved the woman's specific request or if the subject was broached on the occasion
256 of a consultation for another reason. We were not able to consider the duration of
257 symptoms, which is likely to play a role in the decision to see a physician. The
258 reluctance to talk about incontinence that some women or some physicians may feel
259 was not addressed in our study. We can not rule out the possibility of a recall bias
260 relative to medical visits or treatment. Unfortunately healthcare records were not
261 available to confirm the information.

262 Conclusions

263 Our results confirmed that even in a country where the healthcare system ensures
264 reimbursement for medical expenses, including doctors' visits, numerous women do
265 not see physicians although they have severe UI. The determinants of healthcare
266 utilization are not only clinical; social relations also play a role. Progress is needed to
267 give the many women who do not consult doctors despite severe UI a chance to talk
268 to a physician about their condition and receive appropriate management that meets
269 their expectations.

270

271 Acknowledgment

272 We thank Jo Ann Cahn for editing assistance. We thank all the women who
273 participated in our study. We thank the French national gas and electricity company
274 Electricite de France–Gaz de France (EDF-GDF), especially the Service-Général-de-
275 Médecine-de-Contrôle and the Caisse-centrale-d’action-sociale-du-personnel-des-
276 industries-électriques-et-gazières. We also acknowledge the “cohortes” team of the
277 Unit INSERM 1018 Versailles-St-Quentin University responsible for GAZEL database
278 management.

279 Funding

280 Our longitudinal study inside the GAZEL cohort was funded by the IRESP (Institute
281 for Public Health Research). The funding organization was not involved in collection,
282 analysis or interpretation of data.

283

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Table I: Characteristics and comparison of respondents to the follow-up questionnaire (N=2273) and non-respondents (N=265), analysis adjusted for age.

| Characteristics at baseline (2000) except: *1989, **1990-96, ***1994. | Follow-up questionnaire (2008) | | | | | p |
|--|----------------------------------|------|---------------------------|-----|------|-------|
| | Responders (N=2273) | | Non-responders (N=265) | | | |
| | n | % | n | % | | |
| Age | <55 | 1282 | 56.4 | 134 | 50.6 | 0.07 |
| | 55+ | 991 | 43.6 | 131 | 49.4 | |
| Occupational category* | management | 192 | 8.7 | 16 | 6.3 | 0.008 |
| | supervisor, sales representative | 1460 | 66.1 | 157 | 61.8 | |
| | office worker, employee | 556 | 25.2 | 81 | 31.9 | |
| Parity ** | 0-1 | 925 | 40.7 | 101 | 38.1 | 0.36 |
| | >=2 | 1348 | 59.3 | 164 | 61.9 | |
| Number of persons at home | >=3 | 626 | 27.5 | 91 | 34.3 | 0.004 |
| Physical exercise | yes | 1205 | 53.0 | 102 | 38.5 | 0.001 |
| BMI (kg/m ²) | <25 | 1489 | 65.5 | 157 | 60.1 | 0.14 |
| | >=25 | 784 | 34.6 | 104 | 39.9 | |
| Social support scale *** | weak | 541 | 26.5 | 56 | 27.2 | 0.71 |
| | moderate | 699 | 34.3 | 73 | 35.4 | |
| | strong | 798 | 39.2 | 77 | 37.4 | |
| Social satisfactionscale*** | good | 1335 | 65.2 | 122 | 58.6 | 0.06 |
| | poor | 714 | 34.8 | 86 | 41.4 | |
| Social network index *** | weak | 1303 | 68 | 133 | 67.5 | 0.88 |
| | strong | 614 | 32 | 64 | 32.5 | |
| Difficulty retaining urine | Yes | 1260 | 56.4 | 144 | 55.6 | 0.78 |
| Involuntary urinary leakage | Yes | 1192 | 52.8 | 127 | 48.9 | 0.21 |
| UI hygienic or social problem | Yes | 518 | 23.3 | 52 | 20.1 | 0.23 |
| | No UI | 1065 | 47.1 | 133 | 50.8 | |
| | Stress UI | 337 | 14.9 | 32 | 12.2 | |
| | Urge UI | 62 | 2.7 | 8 | 3.1 | |
| | Mixed UI | 782 | 34.6 | 88 | 33.6 | |
| UI type | Undetermined UI type | 16 | 0.7 | 1 | 0.4 | 0.67 |
| | No UI (0) | 1065 | 47.2 | 133 | 51.1 | |
| | Mild (1-2) | 845 | 37.4 | 86 | 33.1 | |
| | Moderate (3-4) | 231 | 10.2 | 23 | 8.9 | |
| | Severe (6-8) | 116 | 5.2 | 18 | 6.9 | |
| UI severity (Sandvik score) | | | | | | 0.69 |
| Hypertension or cardiovascular disease | yes | 641 | 28.2 | 95 | 35.8 | 0.02 |
| Medication use | yes | 1299 | 58.4 | 165 | 64.7 | 0.08 |
| Sleeping pill use | yes | 198 | 8.9 | 37 | 14.5 | 0.001 |

Table II: Women's characteristics at baseline associated with care-seeking for UI during the 8-year follow-up period. Each logistic regression is adjusted for age. ORs are in bold when $p < 0.05$.

| Characteristics | Model 1 Social demographic | | | Model 2 Urinary incontinence | | | Model 3 Health issues | | | Final Model | | |
|--|-------------------------------|------|------------------------|---------------------------------|------|------------------------|--------------------------|------|------------------------|-------------|------|------------------------|
| | N | % | adjusted OR [95%CI] | N | % | adjusted OR [95%CI] | N | % | adjusted OR [95%CI] | N | % | adjusted OR [95%CI] |
| Age/ 3-year | 1859 | | 1.1 [1.0-1.3] | 2257 | | 1.1 [1.0-1.3] | 2159 | | 1.1 [1.0-1.3] | 1931 | | 1.1 [1.0-1.3] |
| Parity | | | | | | | | | | | | |
| <2 | 730 | 13.4 | 1 | | | | | | | | | |
| >=2 | 1129 | 17.1 | 1.4 [1.1-1.9] | | | | | | | | | |
| Number of persons at home | | | | | | | | | | | | |
| <3 | 1351 | 16.6 | 1 | | | | | | | | | |
| >=3 | 508 | 13.2 | 0.8 [0.6-1.1] | | | | | | | | | |
| Social network index | | | | | | | | | | | | |
| good | 595 | 13.1 | 1 | | | | | | | | | |
| weak | 1264 | 16.9 | 1.3 [0.9-1.7] | | | | | | | | | |
| Social support scale | | | | | | | | | | | | |
| strong | 744 | 12.4 | 1 | | | | | | | 748 | 13.1 | 1 |
| moderate | 643 | 15.9 | 1.2 [0.9-1.7] | | | | | | | 668 | 15.4 | 1.2 [0.8-1.6] |
| weak | 472 | 20.6 | 1.6 [1.1-2.2] | | | | | | | 515 | 20.0 | 1.4 [1.0-2.0] |
| Social satisfaction scale | | | | | | | | | | | | |
| good | 1236 | 14.1 | 1 | | | | | | | | | |
| poor | 623 | 18.8 | 1.2 [0.9-1.6] | | | | | | | | | |
| UI severity at baseline (Sandvik) | | | | | | | | | | | | |
| no UI | | | | 1065 | 5.3 | 0.5 [0.3-0.7] | | | | 898 | 5.3 | 0.5 [0.3-0.8] |
| mild | | | | 845 | 17.5 | 1 | | | | 733 | 17.9 | 1 |
| moderate | | | | 231 | 33.8 | 1.9 [1.4-2.7] | | | | 197 | 34.0 | 1.8 [1.2-2.6] |
| severe | | | | 116 | 56.0 | 4.4 [2.9-6.7] | | | | 103 | 56.3 | 4.1 [2.6-6.5] |
| UI type | | | | | | | | | | | | |
| no UI (2000) | | | | 1065 | 5.3 | . | | | | 898 | 5.3 | . |
| stress UI | | | | 333 | 12.9 | 1 | | | | 292 | 13.0 | 1 |
| urge UI | | | | 62 | 22.6 | 1.7 [0.9-3.5] | | | | 56 | 23.2 | 1.9 [0.9-3.9] |
| mixed UI | | | | 781 | 29.6 | 2.1 [1.4-3.0] | | | | 675 | 30.1 | 2.0 [1.3-3.0] |
| Discussion of UI with friends or close relatives | | | | | | | | | | | | |
| no UI (2000) | | | | 1065 | 5.3 | . | | | | 898 | 5.3 | . |
| no | | | | 886 | 20.7 | 1 | | | | 751 | 20.9 | 1 |
| yes | | | | 306 | 35.3 | 1.4 [1.0-2.0] | | | | 282 | 35.1 | 1.5 [1.0-2.1] |
| Discussion of UI with colleagues | | | | | | | | | | | | |
| no UI (2000) | | | | 1065 | 5.3 | . | | | | 898 | 5.3 | . |
| no | | | | 1107 | 23.0 | 1 | | | | 954 | 23.4 | 1 |
| yes | | | | 85 | 42.4 | 1.5 [0.9-2.6] | | | | 79 | 41.8 | 1.5 [0.9-2.7] |
| Quality of life (NHP) | | | | | | | | | | | | |
| good | | | | | | | 717 | 10.7 | 1 | 643 | 10.6 | 1 |
| moderate | | | | | | | 717 | 15.5 | 1.5 [1.1-2.0] | 636 | 16.0 | 1.3 [0.9-1.9] |
| poor | | | | | | | 752 | 20.4 | 2.0 [1.5-2.7] | 652 | 20.6 | 1.3 [0.9-1.9] |
| Consultation with GP in the last 12 months | | | | | | | | | | | | |
| no | | | | | | | 86 | 14.6 | 1 | 81 | 4.9 | 1 |
| yes | | | | | | | 2073 | 16.0 | 3.3 [1.2-9.2] | 1850 | 16.2 | 2.4 [0.8-6.9] |
| Neurologic disease | | | | | | | | | | | | |
| no | | | | | | | 2001 | 14.7 | 1 | 1797 | 14.9 | 1 |
| yes | | | | | | | 158 | 25.9 | 1.6 [1.1-2.4] | 134 | 26.9 | 1.6 [1.1-2.6] |
| Hypertension or cardiovascular disease | | | | | | | | | | | | |
| no | | | | | | | 1550 | 14.1 | 1 | | | |
| yes | | | | | | | 609 | 19.2 | 1.3 [1.0-1.6] | | | |
| concordance index | | 0.60 | | | 0.77 | | | 0.62 | | | 0.78 | |

OR for age was calculated continuously but is reported by 3-year increments.

Variables not found to be significant and not shown: educational level, occupation, household incomes, size of city of residence, marital status, physical exercise, alcohol consumption, smoking, discussion of UI with partner, UI as hygienic or social problem, frequency, urgency, BMI, menopausal status, hot flushes, vaginal dryness,

diabetes or endocrinopathy, chronic bronchitis or cough, lumbar or sciatic pain, drug consumption, diuretic consumption, antidepressant consumption, and sleeping pill use.

Table III: Consultation, treatment for UI, and satisfaction (N=2273)

| | | N | % |
|-------------------------------------|---------------------------------|------|------|
| <u>Consultation for UI</u> | | | |
| | none | 1925 | 84.7 |
| | one | 236 | 10.4 |
| | several | 112 | 4.9 |
| Physicians' gender | man | 152 | 43.7 |
| | woman | 133 | 38.2 |
| | both | 33 | 9.5 |
| | data missing | 30 | 8.6 |
| Physicians' specialty | General Practitioner | 150 | 43.1 |
| | Gynecologist | 186 | 53.5 |
| | Urologist | 82 | 23.6 |
| | other | 20 | 5.8 |
| Satisfied with consultation | missing data | 12 | 3.4 |
| | not at all or a little | 75 | 21.6 |
| | somewhat, very or completely | 261 | 75.0 |
| <u>Treatment of UI</u> | | | |
| | none | 2003 | 88.1 |
| | one | 189 | 8.3 |
| | several | 81 | 3.6 |
| Surgery | one procedure | 88 | 32.6 |
| | several | 4 | 1.5 |
| Medication | one type | 30 | 11.1 |
| | several | 24 | 8.9 |
| Pelvic floor exercise | one prescription | 93 | 34.4 |
| | several | 91 | 33.7 |
| Other treatment | one | 6 | 2.2 |
| | several | 2 | 0.7 |
| Satisfaction with treatment outcome | missing data | 21 | 7.8 |
| | poorer than expected | 107 | 39.6 |
| | same as or better than expected | 142 | 52.6 |

Table IV: Women's characteristics at baseline associated with dissatisfaction with the doctor's visit for UI during the 8-year follow-up period. Logistic regression adjusted for age. OR are indicated bold when $p < 0.05$.

| Characteristics | N | Age adjusted OR [95%CI] | Full adjusted OR [95%CI] |
|--|-----|-------------------------|--------------------------|
| Number of persons at home | | | |
| <3 | 262 | 1.0 | |
| >=3 | 74 | 0.5 [0.3-1.1] | |
| Social support scale | | | |
| strong | 99 | 1 | 1 |
| moderate | 102 | 0.7 [0.3-1.5] | 0.9 [0.4-2.1] |
| weak | 105 | 1.9 [1.0-3.7] | 2.2 [1.2-5.3] |
| Urgency | | | |
| no | 133 | 1 | 1 |
| yes | 197 | 3.7 [2.0-7.0] | 2.7 [1.2-5.9] |
| UI hygienic or social problem | | | |
| no | 110 | 1 | |
| yes | 162 | 1.6 [0.9-2.8] | |
| UI Type | | | |
| stress UI | 42 | 1 | 1 |
| urge UI | 14 | 15 [2.6-89] | 16 [1.5-171] |
| mixed UI | 224 | 7.1 [1.7-31] | 6.0 [0.7-48] |
| UI severity (Sandvik) | | | |
| mild | 142 | 1 | 1 |
| moderate | 76 | 2.7 [1.4-5.3] | 1.8 [0.8-3.9] |
| severe | 64 | 2.4 [1.2-4.8] | 2.0 [0.9-4.4] |
| Quality of life (NHP) | | | |
| moderate or good | 192 | 1.0 | |
| poor | 144 | 1.7 [1.0-2.9] | |
| Hot flushes | | | |
| no | 165 | 1.0 | |
| yes | 171 | 1.6 [0.9-2.7] | |
| Chronic bronchitis or cough | | | |
| no | 310 | 1 | 1 |
| yes | 26 | 0.4 [0.1-1.4] | 0.2 [0.0-0.9] |
| Hypertension or cardiovascular disease | | | |
| no | 223 | 1.0 | |
| yes | 113 | 1.5 [0.9-2.5] | |
| Medication use | | | |
| no | 119 | 1.0 | |
| yes | 209 | 1.7 [0.9-3.1] | |
| Antidepressant use | | | |
| no | 275 | 1.0 | |
| yes | 53 | 1.6 [0.8-3.1] | |
| concordance index | | | 0.77 |

Variables not found to be significant and not shown here: educational level, occupation, household incomes, marital status, parity, size of the city of residence, physical exercise, alcohol consumption, smoking, BMI, social network index, social satisfaction scale, discussion of UI with friends close relatives, colleagues, or partner, frequency, consultation with GP, menopausal status, vaginal dryness, diabetes or endocrinopathy, neurologic disease, lumbar or sciatic pain, diuretic use, and sleeping pill use.

Table V: Women's characteristics at baseline associated with dissatisfaction with UI treatment during the 8-year follow-up period. Logistic regression adjusted for age. OR are indicated bold when $p < 0.05$.

| Characteristics | N | Age adjusted OR [95%CI] | Full adjusted OR [95%CI] |
|---|-----|-------------------------|--------------------------|
| Marital status | | | |
| alone | 52 | 1 | 1 |
| couple | 197 | 0.6 [0.3-1.1] | 0.6 [0.3-1.2] |
| BMI | | | |
| <25 | 167 | 1 | |
| 25+ | 82 | 1.3 [0.8-2.3] | |
| Social network index | | | |
| weak | 157 | 1 | 1 |
| good | 62 | 0.6 [0.3-1.0] | |
| UI Type | | | |
| stress UI | 37 | 1 | 1 |
| urge UI | 10 | 3.1 [0.7-13.3] | 2.5 [0.5-11.7] |
| mixed UI | 165 | 2.8 [1.2-6.3] | 2.8 [1.2-6.6] |
| UI severity (Sandvik) | | | |
| mild | 110 | 1 | 1 |
| moderate | 57 | 1.6 [0.8-3.0] | 1.5 [0.7-3.2] |
| severe | 47 | 2.2[1.1-4.4] | 2.1 [1.0-4.5] |
| UI treatment* | | | |
| surgery | 77 | 1 | 1 |
| médication | 37 | 1.3 [0.6-3.0] | 1.6 [0.7-3.9] |
| pelvic floor exercise | 129 | 1.1 [0.6-1.9] | 1.6 [0.8-3.1] |
| Discussion of UI with friends or close relatives | | | |
| no | 132 | 1 | |
| yes | 82 | 1.5 [0.9-2.7] | |
| Discussion of UI with colleagues | | | |
| no | 184 | 1 | 1 |
| yes | 30 | 1.8 [0.8-4.1] | 2.1 [0.8-5.1] |
| Urgency | | | |
| no | 99 | 1 | 1 |
| Yes | 145 | 2.1 [1.2-3.6] | |
| Quality of life (NHP) | | | |
| moderate or good | 149 | 1 | 1 |
| poor | 100 | 2.1 [1.3-3.6] | 2.1 [1.2-3.7] |
| Hypertension or cardiovascular disease | | | |
| no | 165 | 1 | 1 |
| yes | 84 | 1.4 [0.9-2.5] | 1.8 [1.0-3.3] |
| Diabetes or endocrinopathy | | | |
| no | 197 | 1 | 1 |
| Yes | 52 | 0.6 [0.3-1.1] | 0.4 [0.2-0.8] |
| Concordance index | | | 0.70 |

Variables not found to be significant and not shown here: educational level, occupation, number of persons at home, household incomes, parity, size of the city of residence, physical exercise, alcohol consumption, smoking, social satisfaction scale, social support scale, UI hygienic or social problem, discussion of UI with partner, frequency, consultation with GP in the last 12 months, menopausal status, hot flushes, vaginal dryness, chronic bronchitis or cough, neurologic disease, lumbar or sciatic pain, medication use, antidepressant use, diuretic use, and sleeping pill use.

*Type of treatment was defined as followed: surgery: alone or combined with another type of treatment; medication: alone or combined with another treatment except surgery; pelvic floor exercise: alone or combined with another treatment except medication or surgery.