The Role of Social Support in the Relationship between Urinary Incontinence and Psychological Distress in Older Adults

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RÉSUMÉ

Bien que la relation entre l'incontinence urinaire (IU) et la détresse psychologique chez les personnes âgées ait été établie dans la documentation spécialisée, les mécanismes qui sous-tendent cette relation restent relativement flous. Au moyen d'un échantillon de 4 689 personnes âgées tiré de l'Enquête sur la santé dans les collectivités canadiennes (1.1), nous avons évalué les effets potentiels de médiation et de modération de quatre dimensions du soutien social sur la relation entre l'IU et la détresse. Les personnes âgées incontinentes sont considérablement plus susceptibles de déclarer des niveaux élevés de détresse que les adultes qui ne souffrent pas d'incontinence. Bien que nous n'ayons pas démontré l'effet de médiation d'une quelconque dimension du soutien social, nous avons constaté une interaction appréciable entre l'une des dimensions du soutien social (le soutien tangible) et l'IU. Le soutien tangible a visiblement un effet tampon sur les répondants incontinents, mais pas sur ceux qui ne le sont pas. Ces résultats mettent l'accent sur la nécessité d'évaluer les divers types de soutien social ainsi que le contexte dans lequel ils sont offerts.

ABSTRACT

While an association between UI and psychological distress among older adults has been established in the literature, the mechanisms underlying this relationship remain less clear. Using a sample of 4,689 older adults from the Canadian Community Health Survey (1.1), we test the potential mediating and moderating effects of four dimensions of social support on the UI–distress relationship. Incontinent older adults are significantly more likely to report higher levels of distress than continent adults. Although we do not find support for a mediating effect of any of the dimensions of social support, we do report a significant interaction between one dimension of social support (tangible support) and UI. A buffering effect of tangible support is evident for continent – but not incontinent – respondents. These findings emphasize the need to assess the types of social support and the context in which they operate.

Introduction

Urinary incontinence (UI), defined as the involuntary loss of urine, is a common problem among older adults (Østbyte, Hunskaar, & Sykes, 2002). In Canada, the prevalence of UI has been estimated at six per cent to 37 per cent among older adults living in the community, and as high as between 20 per cent and 60 per cent among older adults residing in long-term care facilities (Østbyte et al., 2002).

In addition to the economic costs and physical complications associated with UI (Cohen et al., 1999; Johnson et al., 1998; McDowell, Engberg, Rogriguez, Engberg, & Sereika, 1996; Roberts et al., 1999) are the resulting threats to emotional and social well-being. Indeed, previous work has identified a relationship between UI and both depressive symptomatology (Al-Shammari & Al-Subaie, 1999; Black, Goodwin, & Markides, 1998; Dugan et al., 2000; Grimby, Milsom,

Molander, Wiklund, & Ekelund, 1993) and psychological distress in middle-aged and older adults (Fultz & Herzog, 2001; Iglesias et al., 2000).

A number of factors explain the relationship between UI and distress in older adults, although these pathways are still not well understood. A potential mediator that has received some attention in the UI–distress literature is the role of social relationships. Studies cite social isolation, loneliness, and withdrawal from social contact resulting from UI as key factors that lead to depression and psychological distress in incontinent individuals (Fultz & Herzog, 2001; Grimby et al., 1993; Herzog, Fultz, Brock, Brown, Brown, & Diokno, 1988). However, while UI may lead to reduced social contact and thereby increase the risk of depression and distress, it is also possible that being a member of a supportive network of friends and family reduces the potential distress associated with UI (providing a moderating or buffering effect). Although the moderating effect of social support has received less attention in the UI–distress literature, supportive family and friends may be able to provide informational support (e.g., treatment options) about UI as well as a supportive environment where their loved ones may feel less anxious or embarrassed about the condition. Moreover, individuals suffering from chronic conditions such as UI might also benefit from the additional instrumental or tangible support (e.g., assistance with daily activities) that family and friends could provide.

The benefits of social support for physical and mental health are well documented in the literature (see Antonucci, 2001, for a review); however, less is known about the function of social support in the relationship between chronic health conditions such as UI and mental health among older adults. Previous work suggests that exchanges of instrumental support and feelings of loneliness can vary among older adults who experience different chronic health conditions (Penninx, van Tilburg, Boeke, Deeg, & van Eijk, 1999). As such, it would be erroneous to assume that the influence of social support on the relationship between chronic health conditions and psychological distress is uniform across different health conditions. A great deal of work has also explored the ability of social support to buffer the negative effects of stressful life events (e.g., bereavement) and other stressors (Cohen & Wills, 1985; Krause, 1986; 1987; 1990; 1995).

Although the potential positive moderating effects of social support have received considerable attention in the stress process literature (e.g., Pearlin, 1999), we know of no published work that has examined the potential buffering effect of social support on the UI–psychological distress relationship. Consistent with a stress process approach, we consider UI to be a chronic stressor (Turner & Noh, 1988). As such, we test the mediating and moderating (or buffering) effect of four types of social support on the relationship between UI and psychological distress. Four dimensions of social support are measured from the Medical Outcomes Study Social Support Survey (the MOS scale) and include tangible support, affection, positive social interaction, and emotional and informational support. Figure 1 outlines the conceptual model to be tested in this paper.
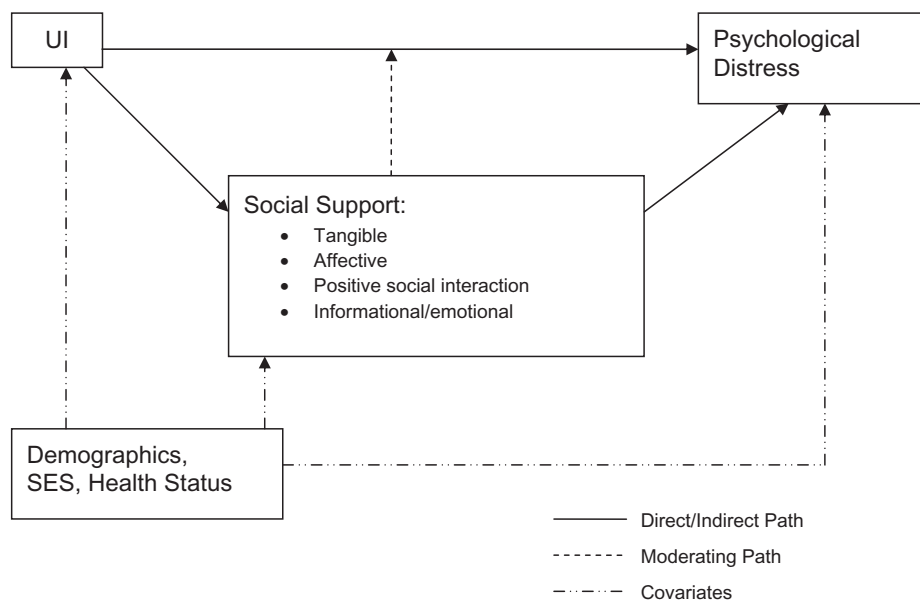

Figure 1: Conceptual model of research question

Methods

The data for this study come from the Canadian Community Health Survey (CCHS) (1.1) by Statistics Canada (2001). The CCHS is a cross-sectional survey of Canadians aged 12 years and older living in private dwellings. Each province was divided into health regions (HRs), while each territory was designated as a single HR. In total, 136 HRs were sampled using a multi-stage, stratified cluster design. Face-to-face interviews were conducted with the majority of the sample (88%), and the remaining respondents were interviewed by telephone. Data were not collected from individuals living on Indian reserves or Crown lands, residents of institutions, full-time members of the Canadian Armed Forces, or residents of certain remote areas. In 82 per cent of households, one member was randomly selected to provide detailed information and two people were randomly chosen in the remaining households in order to increase the representation of both seniors and youth in the survey. Of the 142,421 possible respondents aged 12 and older, 130,827 participated, yielding a response rate of 91.9 per cent. Adults aged 60 years and older were selected for analysis, providing a sample size of 31,385. Individual HRs were able to custom design the questionnaire to suit the unique needs of each region. As a result, not all measures were collected in all regions. For this reason, our total sample size was limited to a subgroup of individuals (aged 60 and over) who were administered all scales relevant to this study (e.g., distress, social support). This restriction reduced our sample size to 5,502. Following the deletion of cases with missing values, our final sample size was 4,689. Given the complexity of the sampling design, software packages such as STATA are typically used to calculate unbiased standard errors. However, as a result of restrictions on data release imposed by Statistics Canada (2001), access to the design information necessary to use such software was not available. Therefore, in order to address the underestimation of variances because of cluster sampling, sampling weights were further adjusted by dividing the weights by the overall design effect of the survey (2.34). The result is more conservative variance estimates in line with those produced by programs such as STATA or SUDAAN (Lipman, Offord, & Boyle, 1997).

Dependent Variables

Psychological distress was assessed using a six-item measure of generalized distress developed at the University of Michigan. Respondents were asked, ''During the past month, how often did you feel: (1) so sad nothing could cheer you up, (2) nervous, (3) restless or fidgety, (4) hopeless, (5) worthless, (6) that everything was an effort?''

Respondents answered each query using a 5-point Likert response set. Higher scores indicate higher levels of distress ($\alpha = 0.79$).

Independent Variables

Urinary Incontinence

In the survey, respondents were asked about a number of chronic health conditions, including UI. The wording from the questionnaire is as follows: ''Now I'd like to ask you about any chronic health conditions you may have. Long-term conditions refer to conditions that have lasted or are expected to last 6 months or more. Do you have any of the following long-term conditions that have been diagnosed by a health professional: urinary incontinence?'' Respondents who indicated they had a diagnosis of UI received a score of 1; all others received a score of 0.

Social Support

Four measures of social support, derived from the Medical Outcomes Study Social Support Survey (the MOS scale), are available in the CCHS. These include tangible support, affection, positive social interaction, and emotional/informational support (see Sherbourne & Stewart, 1991, for details on the survey development and evaluation).

Tangible support assesses the amount of instrumental support available to respondents. Questions include whether or not respondents have someone to help them if they were confined to bed, to take them to the doctor, to prepare their meals, or to do their daily chores if asked.

Affection assesses the amount of love and warmth the respondent receives. Questions include whether or not respondents have someone who shows them love, hugs them, or makes them feel wanted.

Positive social interaction is a measure of how much respondents are involved in positive social interaction. Questions assess whether they have someone to have a good time with, get together with for relaxation, do things with to get their mind off things, or do something enjoyable with.

Emotional/informational support determines the amount of emotional and informational support respondents receive. Questions assess whether or not they have someone to listen and advise them in a crisis, give them information and confide in and talk to, or understand their problems.

All four dimensions were found to be reliable with all alphas greater than 0.91 (Sherbourne & Stewart, 1991).

Physical Health Status

Since chronic conditions in older adults such as UI seldom occur in isolation, but may represent only one of a set of co-morbid conditions that in turn influence mental well-being, it is necessary to account for the overall physical health status of the individual. For example, UI might be associated with other chronic health problems or disability, which in turn is distressing to the older adult (has a confounding effect). Here it is not UI itself that is distressing, but other associated chronic conditions more generally. Failure to account for health status could result in a spurious relationship between UI and distress or depression (Herzog et al., 1988). Health status is based on a measure of chronic conditions and limitations in activities of daily living. For chronic health conditions, respondents were asked a series of questions about the presence of 20 chronic conditions; for example, "Do you have diabetes diagnosed by a health professional – yes or no?" Other chronic conditions about which respondents were questioned include allergies, asthma, fibromyalgia, arthritis or rheumatism, back problems, high blood pressure, migraines, chronic obstructive pulmonary disease, epilepsy, heart disease, cancer, stomach/intestinal ulcers, effects of a stroke, bowel disorder, cataracts, glaucoma, thyroid condition, Parkinson's, multiple sclerosis, chronic fatigue syndrome, and multiple chemical sensitivities. Following previous work, an additive index was created summing *yes* responses to each health condition (0 to 22). Urinary incontinence was not included in the chronic condition index.

Limitations in activities of daily living (ADLs) are also included as a measure of health status, as they are associated with psychological distress among older adults, as well as with disability that may be related to UI. In this part of the questionnaire, respondents were prompted to answer *yes* or *no* to six questions: "Do you need the help of another person with (1) meal preparation, (2) grocery shopping, (3) housework, (4) heavy household chores, (5) personal care, (6) moving about in your home?" All *yes* responses were summed together to create an index (0 to 6). Higher scores indicate more limitations in ADLs.

Socioeconomic Status

Household income was coded into two dummy variables comparing low and middle income to high income from a measure of income adequacy. Income adequacy is based on the total household income and the number of people living in the household. The variable reflecting the highest educational attainment of the respondent was coded into 4 categories: (1) less than secondary school graduation, (2) secondary school graduation, no post-secondary education, (3) some post-secondary education, and (4) post-secondary degree or diploma.

Previous work has also identified age as a potential confounding variable in the UI–distress relationship (Herzog et al., 1988). Age was originally coded in 5-year intervals (60–64, 65–69, 70–74, 75–79) except for the last interval, which included those aged 80 and over. A 5-point scale for age was then created by setting each scale value to the midpoint of the interval ($1 = 62$). For the last interval, the midpoint was set to 90. Gender was coded 1 for females and 0 for males. Marital status consists of two dummy variables comparing married, previously married (separated, divorced, or widowed), and single, where married is the reference group.

Results

Sample characteristics are provided in Tables 1 and 2. Urinary incontinence is significantly associated with psychological distress in our sample.

To assess the effects of age, gender, socio-demographic and health status, and social support on the relationship between UI and psychological distress, we performed an ordinary least squares (OLS) regression analysis, where each grouping of variables is entered independently to assess its influence on the relationship between UI and psychological distress. The results of this analysis are summarized in Table 3. Model 1 shows the relationship between UI and psychological distress after adjusting for gender, marital status, income, and education. On average, individuals who are incontinent reported distress scores that were 2.24 (unstandardized *b*-coefficient) points higher than their continent counterparts. In Model 2, we controlled for age, which had little effect on the UI coefficient. Two measures of physical health status – chronic health conditions and limitations in ADLs – were entered in Model 3. These two measures decreased the UI coefficient by 43 per cent from Model 1, but the relationship between UI and psychological distress remained statistically significant.[1] In order to assess whether this result was due to one or both of the measures, we entered both the number of chronic conditions and limitations in ADLs separately (not shown). Each accounted for approximately the same proportional decrease in the UI coefficient. To assess a mediating effect of social support, we entered the four measures of social support – tangible support, affection, positive social interaction, and emotional/informational support – in Model 4. Combined, these four variables decreased the UI coefficient by 17 per cent from Model 1, and the relationship between UI and distress remained statistically significant, suggesting that they did not

Table 1: Sample characteristics (N = 4,689) of gender, marital status, and differences in income adequacy between continent and incontinent respondents

Variable	n	%	Continent %	Incontinent %	χ^2
Urinary Incontinence					
Yes	250	5.3	–	–	–
No	4439	94.7	–	–	–
Gender					
Female	2855	60.9	96.8	3.2	17.66*
Male	1834	39.1	93.2	6.8	
Marital Status					
Married	2286	48.8	96.0	4.0	
Previously married	2076	44.3	92.1	7.9	19.27**
Single	327	7.0	96.6	3.4	
Income					
Low	1378	29.4	91.5	8.5	
Middle	1861	39.7	94.5	5.5	20.11**
High	1450	30.9	96.6	5.2	

*$p<0.01$, **$p<0.001$.

Table 2: Overall scores and mean differences in psychological distress, age, education, social support, and physical health, by continence status

Variable	Overall Mean (SD)	Continent	Incontinent	t
Psychological Distress	2.76 (3.69)	2.57	5.19	6.90**
Age	71.40 (8.79)	70.51	76.48	7.07**
Education	1.83 (1.24)	2.00	1.63	−3.72**
Tangible Support	12.84 (4.09)	13.27	11.98	−3.19*
Affection	9.57 (3.03)	9.93	8.77	−4.03
Positive Social Interaction	12.73 (3.91)	13.18	11.40	−4.61**
Emotional/Informational Support	25.34 (7.64)	25.78	22.97	−4.13**
Chronic Health Conditions	2.11 (1.61)	1.90	3.18	7.93**
Limitations in ADLs	0.69 (1.61)	0.61	1.47	6.12**

*$p<0.01$, **$p<0.001$.

significantly mediate the UI–distress relationship. In Model 5, all measures were entered simultaneously, and together they decreased the UI coefficient by 46 per cent from Model 1 (the effect of UI on distress remained statistically significant). Together, the variables in Model 5 account for approximately 24 per cent of the variance in psychological distress.

In order to test for a moderating (buffering) effect of social support, we created interaction terms for UI and each of the four measures of social support.[2] These terms were then entered simultaneously into Model 5 of the OLS regression equations. There was a significant interaction between UI and tangible support in our sample ($b = 0.18$ [0.09], $p<0.05$), suggesting that the relationship between UI and distress is conditional on the level of reported tangible support. This interaction is graphed in Figure 2 to facilitate interpretation. Here, two lines

Table 3: OLS regression of distress on urinary incontinence, physical health, and social support (N = 4,689)

Variables	Model 1	Model 2	Model 3	Model 4	Model 5
Urinary Incontinence (UI)	2.24*** (0.301)	2.26*** (0.30)	1.28*** (0.29)	1.85*** (0.29)	1.21*** (0.28)
Age		−0.00 (0.01)			−0.04*** (0.01)
Number of Chronic Conditions			0.41*** (0.04)		0.36*** (0.04)
Limitations in ADL			0.69*** (0.06)		0.70*** (0.06)
Tangible Support				−0.06* (0.02)	−0.07** (0.02)
Affection				0.06 (0.04)	0.06 (0.04)
Positive Social Interaction				−0.35*** (0.03)	−0.27*** (0.03)
Emotional/Informational Support				0.02 (0.02)	0.01 (0.01)
Female	0.69*** (0.14)	0.70*** (0.14)	0.41** (0.14)	0.67*** (0.14)	0.39** (0.13)
Single	0.08 (0.28)	0.08 (0.28)	0.11 (0.27)	−0.78** (0.29)	−0.56* (0.27)
Previously Married	0.45** (0.17)	0.47** (0.17)	0.22 (0.16)	−0.30 (0.17)	−0.21 (0.16)
Low Income	0.62** (0.21)	0.62** (0.21)	0.33 (0.19)	0.23 (0.20)	0.03 (0.19)
Middle Income	0.30 (0.16)	0.31* (0.16)	0.13 (0.15)	0.18 (0.15)	0.11 (0.14)
Education	−0.21*** (0.06)	−0.22*** (0.06)	−0.18*** (0.05)	−0.22*** (0.05)	−0.21*** (0.05)
Constant	2.24	2.53	1.33	6.82	8.44
R^2	0.03	0.06	0.06	0.18	0.24

*$p < 0.050$, **$p < 0.010$, ***$p < 0.001$. Unstandardized coefficients are reported. Standard errors are reported in parentheses.
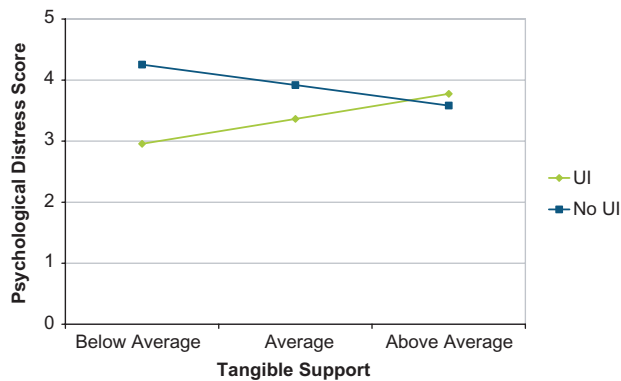

Figure 2: Interaction between urinary incontinence and tangible support

are graphed, one for each level of the independent variable (continent vs. incontinent). Continent individuals who report lower levels of tangible support also report slightly higher levels of distress than their incontinent counterparts. For continent individuals, reported distress decreases as tangible support increases (to average and above-average levels). In contrast, among incontinent respondents, reported psychological distress increases as tangible support increases.

We felt that the counterintuitive finding that individuals with UI report greater distress at higher levels of social support warranted some further investigation. To that end, we hypothesized that perhaps a third factor – health status – was also influencing this relationship. We compared mean scores on chronic health conditions and limitations in ADLs across respondents with and without UI, and across respondents reporting below-average, average, and above-average levels of social support (analyses not shown). At all levels of tangible support, incontinent individuals report more chronic health problems and limitations in ADLs than their continent counterparts. Individuals who reported below-average levels of tangible support report the most chronic conditions and limitations in ADLs, followed by those who report average and above-average levels of tangible support. On the basis of these results, we hypothesized that the relationship between UI, tangible support, and distress might be further moderated by health status. That is, perhaps distress is highest among those reporting greater social support and poorer general health status. In order to test this possibility, we created three-way interaction terms between UI, tangible support, and the two measures of health status, and entered these terms into the full model. We found a significant three-way interaction between UI, social support,
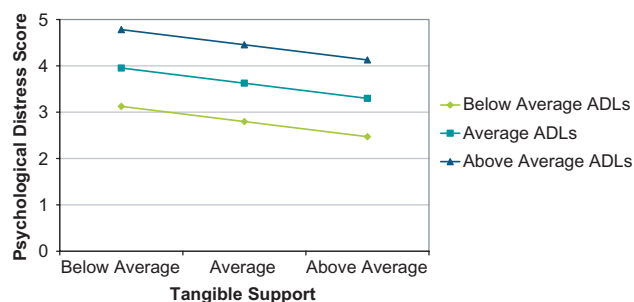
Figure 3: Three-way interaction: UI, tangible support, and limitations in activities of daily living among continent individuals
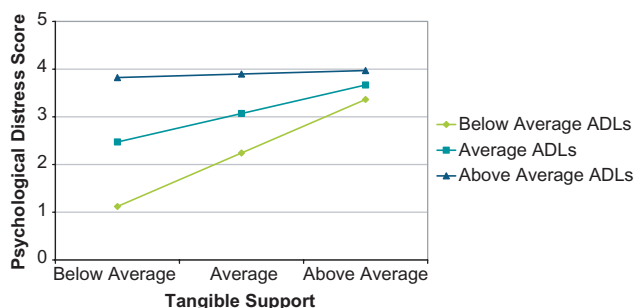

Figure 4: Three-way interaction: UI, tangible support, and limitations in activities of daily living among incontinent individuals

and limitations in ADLs ($b = -0.106$, [0.34], $p < 0.01$). This three-way interaction is graphed in Figures 3 and 4.

In Figure 3, only continent respondents are considered. Three lines representing the relationship between UI, tangible support, and psychological distress across three levels of limitations in daily activities (below average, average, above average) are shown. In Figure 4, the same three lines are graphed for incontinent respondents only. For continent respondents, tangible support functions as we might have expected: across all levels of limitations in ADLs, greater tangible support is associated with lower levels of psychological distress. Among individuals with UI; however, our findings are not as intuitive. Here, lower levels of tangible support are associated with lower psychological distress for all three groups. Average or higher levels of tangible support are associated with higher levels of psychological distress. While this effect is weak among individuals reporting above-average limitations in ADLs, the effect is much stronger for those reporting average and below-average limitations in ADLs.

Discussion

Consistent with previous research, we find that UI is positively associated with psychological distress (Bogner et al., 2002; Dugan et al., 2000; Fultz & Herzog, 2001; Grimby et al., 1993). Compared to continent individuals, individuals with UI in these studies reported feeling more sad, lonely, and anxious. Contrary to previous work by Herzog et al. (1988), we report a positive and significant relationship between UI and psychological distress, even after controlling for demographic variables, age, and health status, and we did not find support for a mediating effect of social support. However, the relationship between UI and psychological distress appears to be more complex than previously reported.

We find a significant moderating effect of tangible support on the relationship between UI and psychological distress. As expected, among continent respondents, higher levels of tangible support are associated with lower levels of psychological distress. However, this same positive buffering effect of tangible support does not hold for incontinent individuals. While incontinent respondents report less distress at lower levels of tangible support, this same group reports higher levels of distress at higher levels of tangible support. Following further investigation, we report that the relationship between UI, tangible support, and distress is further moderated by a measure of health status – limitations in ADLs.

Among continent respondents, tangible support is associated with lower psychological distress across all levels of limitations in activities of daily living. This same buffering effect is not evident for respondents with UI. There is little effect of tangible support on distress among incontinent individuals who report greater limitations in ADLs. For incontinent respondents reporting average or lower levels of limitations in ADLs, greater tangible support is actually associated with higher levels of psychological distress. This effect is most pronounced among incontinent individuals with few limitations in ADLs. In other words, individuals with UI, low levels of ADLs, and high tangible support report the highest levels of distress. The measure of tangible support used in this study assesses the degree to which respondents feel that they have assistance at their disposal in the event of need, such as someone to take care of them when they are ill, drive them to medical appointments, or prepare their meals if they were unable to do so themselves. While this type of social support might be especially salient for older adults who experience a number of physical limitations, it might be less crucial for individuals suffering from UI. Rather, for older adults with UI and no other major health problems,

the increased presence of others and their willingness to provide (or insistence upon providing) assistance might simply infringe on their sense of autonomy and independence. While we recognize that there is some conceptual overlap between the measures of limitations in ADLs and tangible support, it is unlikely that this influenced the statistical interaction, since the correlation between the two measures is weak ($r = -0.08$).

Previous work on the relationship between UI and psychological distress has identified a loss of independence and an eroded sense of personal mastery as other possible mediating mechanisms in the relationship (Chiverton, Wells, Brink, & Mayer, 1996; Dowd, 1991). It seems plausible that increased tangible support in the absence of a specific physical need might only intensify psychological distress associated with the condition, rather than decrease it, precisely because such help challenges one's own independence and personal control. Although it is beneficial to have assistance when needed, in the absence of that need, it may simply be a reminder of one's own health problems. Given the potentially embarrassing nature of UI, being surrounded by others when assistance is not required might be distressing for incontinent older adults, for the simple reason that they may be concerned about having an accident in front of their family and friends. The significant three-way interaction between UI, tangible support, and limitations in activities of daily living is consistent with this idea. However, in the absence of measures of personal control, we could not test this hypothesis directly. Further research with a full range of stress process measures should be conducted.

In a broader sense, these findings present an opportunity to consider our assumptions about the types of social support and their function in various contexts. The benefits of social support for both physical and mental health have been clearly documented (e.g., Antonucci, 2001), but there is also some literature to suggest that not all social support and social interaction have a positive influence on psychological well-being (e.g., Krause & Rook, 2003; Walen, & Lachman, 2000). In one study, unwanted or unneeded assistance (negative interactions) were associated with lower morale and increased psychiatric symptoms among recent stroke patients (Stephens, Kinney, Norris, & Ritchie, 1987). These studies, and our findings, challenge the assumption that all facets of social support are beneficial.

Although a great deal of literature has demonstrated the positive aspects of social support for both physical and mental health, all types of support might not be beneficial in all situations. The provision of social support to incontinent individuals in the absence of any real physical need may only erode feelings of independence, autonomy, and sense of control. It also assumes that individuals receiving support are willing to engage in the support relationship, regardless of their ability to reciprocate. Such a finding is consistent with the results reported here. Furthermore, our findings here are only a first step to better understanding the potential influence of social support on psychological distress among older adults suffering from chronic health conditions. The influence of social support on distress among individuals with other chronic conditions seems warranted.

There are a number of limitations in this work that deserve mention. First, the prevalence of UI in our sample is on the lower end of reported prevalence among community-dwelling older adults reported in the literature (Østbyte et al., 2002). The question that assesses UI specifically asks whether or not they have been diagnosed by a medical professional. However, we also know that less than half of all incontinent older adults discuss the problem with their physician (Cohen et al., 1999). Future work might include self-report questions about bladder control and a more detailed assessment of UI that includes questions about the duration of the condition, the type of UI, and severity.

In this study, social support is assessed using four distinct dimensions of support from the Medical Outcomes Survey. Of note is that two of the four measures of social support were not at all related to UI in this sample (affection and emotional/information support). This finding may be due in part to the nature of the questions, in that they do not specifically ask about social support as it relates to health. Future work should also include measures of support that assess how social support is influenced by chronic conditions such as UI. For example, a measure that assesses the degree to which a chronic condition inhibits social interaction or perceptions about the presence of others during illness might better inform our understanding of the role of social support for individuals with chronic health problems.

While we were not principally interested in the effect of marital status on the relationship between UI and psychological distress, marital status likely exerts an important influence on reported levels of social support. In regression models where the social support measures are not included (Models 1, 2, and 3), compared to the experience of married individuals, being single or previously married is associated with greater psychological distress. However, when measures of social support are included (Models 4 and 5),

being single or previously married is associated with lower psychological distress relative to the experience of married individuals. The sign reversal indicates a suppression effect: After taking into account social support, there is no longer a psychological advantage (protective effect) to being married. In fact, once social support has been adjusted for in the model, married individuals report more distress than do single or previously married individuals. Such a finding is worthy of further investigation and could be addressed in future work. Perhaps a third or unmeasured variable (e.g., relationship stress) is driving the change in association between marital status and distress, when measures of social support are included in the regression model.

Third, as with any cross-sectional data, we are unable to assess if UI precedes distress in time. Finally, given the intimate nature of UI, we must also consider the possibility that respondents provided a socially desirable response to the question about UI, not wanting to disclose potentially embarrassing or personal information.

Notwithstanding these limitations, we were able to examine the impact of UI on psychological well-being in older adults using a large sample of community-dwelling older adults. To our knowledge, this is the first study to report a moderating effect of social support on the UI–distress relationship. Understanding the role of social support in the UI–distress relationship has important implications for how family and friends can assist and provide appropriate support to their loved ones who suffer from UI. The findings reported here are only a first step in better understanding how tangible support moderates the UI–distress relationship, and future work might also consider looking at other chronic conditions and how they too may be moderated by measures of social support.

Notes

1   A second index of chronic conditions was also created that excluded conditions unrelated to UI (e.g., glaucoma, allergies). This reduced index did not yield results significantly different from those reported in Table 3.

2   All variables were mean centred prior to the calculation of interaction terms.

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