

Association between Urinary Incontinence in Elderly Clients and Caregiver Quality of Life in Menoufia Governorate

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Abstract: Incontinence has negative physical, psychosocial, and economic impact not only on older adults but also their primary caregivers. This study conducted to assess the association between incontinence in elderly clients and caregiver quality of life. A descriptive design was used in this study. This study was conducted at out-patient clinic in Menoufia University Hospital, Shebin El kom Teaching Hospital and AbuBakrElsidik clinic. A purposive sample of 400 caregivers who caring for their elderly relatives participated in the study. Two tools were used and filled by the researchers to collect the data; structured interviewing questionnaire and Adult Carer Quality of Life Questionnaire (AC-QoL). Results: prevalence rate of incontinence was 52% and 42% of them have bladder and bowl incontinence. Low and moderate level quality of life was associated with caring someone with incontinence. There were some factors influencing caregivers' quality of life as age, gender, social status, economic status and work. Conclusion: incontinence more prevalent among elderly. Caring for someone with incontinence can affect caregiver quality of life. Recommendations :More awareness of the growing problem of incontinence should be tackled, and guidelines for distribution of adequate information of services and good examples of incontinence care. Education and training programs for professional knowledge of the carers' situation should have much more attention.

Key words: incontinence, quality of life, elderly, caregiver.

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I. Introduction

Urinary incontinence (UI) is one of health conditions that affect the elderly. (Hägglund, Momats, and Mooney, 2017). International Continence Society (ICS) defines urinary incontinence as a complaint of involuntary loss of urine (Haylen, Ridder, Freeman, Swit, Berghmans and Lee, 2010). Elderly people may think that urinary incontinence is a usual result of old age. They may be ashamed by their incontinence, so they avoid evaluation. In addition, Healthcare personnel infrequently ask the elderly around urinary incontinence. (Sidik, 2010). Urinary incontinence is a worrying and exhausted condition; it has a negative effect on self-esteem and quality of life (Santos, Lebrão, Duarte, & Laurenti, 2011).

Advancing age is associated with increase in state of incontinence. The prevalence is more in postmenopausal women and, after the age of seventy in men until 80 years of age; thereafter, rates of UI are similar in men and women (Khandelwal & Kistler, 2013, Gibson & Wagg, 2017). That affects between 30% to 60% of older women and between 10% to 35% of older men, and up to 80% of nursing home residents worldwide (Miu, Lau & Szeto, 2010). About 51% of people who aged 65 years old and more reported bladder and/or bowel incontinence (Reinberg, 2014). Incontinence in older person is owing to advancing age alterations in the lower urinary tract and an increase in comorbid diseases. In Egypt, the prevalence of UI in community studies in Alexandria was estimated to be 49.6% during the year 2006 (Abed EL-Fatah, 2006). Despite this high prevalence, incontinence is widely under-diagnosed and underreported.

In advancing age, incontinence becomes gradually more complex because of morbidities, polypharmacy, mobility impairment and cognitive abilities impairment that can often make the diagnosis less clear. (Spencer, McManus & Sabourin, 2017). Incontinence has negative physical, psychosocial, and economic impact not only on older adults but also their primary caregivers. Time and cost consumed to providing care at home is significantly greater for older adults with incontinence than for continent. Caregivers may face problems with role change, sleeping, finances, intimacy, and social isolation (Emmons & Robinson, 2014).

A lot of caregivers think that, incontinence included in the most challenging aspects of providing care. Incontinence can be unpredictable, increase dramatically to a workload and be high cost. They may report feeling angry, unfulfilled, isolated, and can't handling well. The impact on caregivers can extend to education, employment chances and family relationships (Continence Foundation of Australia, 2015). Caring for a loved

one can be a very rewarding practice. However, caregiving also has its challenging and tense moments, especially when a loved one is incontinent (Curry, 2017).

Aim of the study:

To assess the association between incontinence in elderly clients and caregiver quality of life.

Research question:

- 1- What is the prevalence of incontinence in the studied sample?
- 2- Does the caring of elderly with incontinence affect caregiver' quality of life?

Subjects and Method:

Design: a descriptive design was used to conduct this study.

Setting: this study was conducted at out-patient clinic in Menoufia University Hospital, Shibin El kom Teaching Hospital and AbuBakrElsidik clinic.

Subjects: A purposive sample of 400 caregivers who caring for their elderly relatives.

Sample size was calculated based on:

- 1- Total elderly population size was about 6700000 (N) = 6700000
- 2- Hypothesized % frequency of violence in the population (p): 30% +/-5
- 3- Confidence limits as % of 100 (absolute +/- %) (d): 5%
- 4- Design effect (for cluster surveys-DEFF): 1
- 5- Sample Size (n) for 95% Confidence Levels was 385 which were approximate to 400 caregivers,

Equation:

$$\text{Sample size } n = \frac{[DEFF * N * p(1-p)]}{[(d^2 / Z^2 * (1-p) + p * (1-p))]}$$

Tools of data collection: Two tools were used and filled by the researchers to collect the data. It included:

Tool (1): Structured interviewing questionnaire: It was developed by the researchers based on review of the related literatures, which involved the following:

- A. Socio-demographic characteristics for elderly: it included eight questions such as age, sex, income, if the elderly live with the caregiver or not, if he suffered incontinence or not,....etc.
- B. Socio-demographic characteristics for caregivers: it included eleven questions such as age, sex, marital status, education, occupation, family income, long of caring, numbers of hours in providing care,.....etc.

Tool (2): Adult Carer Quality of Life Questionnaire (AC-QoL). The Adult Carer Quality of Life Questionnaire (AC-QoL) is a 40-item instrument that measures the over-all quality of life for adult carers, and subscale scores for eight domains of quality of life: support for caring; caring choice; caring stress; money matters; personal growth; sense of value; ability to care; and carer satisfaction.

Scoring of the AC-QoL:

For the following questionnaire items:

1, 2, 3, 4, 5, 17, 18, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 39, & 40

Score: never 0, some of the time 1, a lot of the time 2, always 3

For the following questionnaire items:

6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 19, 37 & 38:

Score: never 3, some of the time 2, a lot of the time 1, always 0

Interpretation of the Scores:

Scores can be worked out for the total quality of life using the whole questionnaire, or for each subscale. Scores on the overall questionnaire have a range of 0 to 120 with higher scores indicating greater quality of life.

- 0-40 indicates a low reported quality of life, and may propose problems or difficulties.
- 41-80 Indicates a mid-range reported quality of life
- 81+ Indicates a high reported quality of life

Scores on each of the eight subscales have a possible range of 0 to 15, with higher scores demonstrating greater quality of life on that subscale.

- 0-5 indicates a low reported quality of life, and may propose problems or difficulties.
- 6-10 Indicates a mid-range reported quality of life on that subscale
- 11+ Indicates a high reported quality of life on that subscale

Validity and reliability: The tool 1. Was developed by the researchers after review of the related literature and tested for its content validity. Tool 2. Was developed by Elwick H., Joseph S., Becker S. & Becker F. (2010) translated and modified to Arabic version by the researchers to collect the essential data. Validity indicated the degree to which the tool measures what it is expected to measure, therefore, in this study, questionnaire content validity was determined by a panel of five experts specialized in medical surgical nursing and community health nursing. Adjustments were carried out as stated by the panel decision on clarity of the sentences and appropriateness of the contents. Reliability was assessed by applying the questionnaire on 20 caregivers using test-retest with 15 days between them. Between the two scores correlation coefficient was calculated. The reliability of the study instrument was tested using Cronbach Alpha. Correlation coefficient was 0.85 for the second tool

Pilot study: Pilot study was conducted on 5% of the sample. This sample was excluded from the total sample. The pilot study was carried out to test the applicability and lucidity of the constructed questionnaire and detect any problems that might arise during the actual collection of data. Then the necessary adjustments and clarifications of some questions were done according to the findings of the pilot study and final form was developed and used in data collection.

Ethical considerations and human rights: Protection of human rights was emphasized on subjects that the participation in the study was voluntary. Anonymity and confidentiality of responses was respected. Caregivers were given an opportunity to refuse to participate in the study and they were notified that they could withdraw at any stage of the research. Caregivers who interested to voluntary participate in the study included and their oral consent was obtained .

Data collection procedure:

- This study was conducted during the period starting from December 2017 to the end of November 2018.
- Necessary approval was obtained from the director of Menoufia University Hospital, ShibinElkom Teaching Hospital, and Abo Baker Elsidik Clinic after issuing letter to them from the Faculty of Nursing, Menoufia University explaining the aim of the study in order to obtain permission and help.
- After obtaining approval and informed consent to conduct the study, the researchers were initiated data collection from caregivers who attended to the outpatient clinic two days per week for ten months through using self-administered structured questionnaire which included socio demographic data questions for caregivers and their relatives. Adult Carer Quality of Life Questionnaire.
- Before distributing the questionnaire, the researchers introduced themselves and a brief explanation about the purpose of the study was given to the participants.
- The AC-QoL is a self-report questionnaire that most carers will find straightforward to use. Carers invited to complete the questionnaire by themselves although some may require assistance. Carers given as much time as they need to fill in the questionnaire. Instructions on how to complete the questionnaire are given in the respondent information, and should read before starting the questionnaire. The average time taken for completing questionnaire was around 30-45 minutes. The researchers manipulate the reported data using the appropriate statistical system.

Statistical Analysis:

Data was coded and transformed into specially designed form to be suitable for computer entry process. Data was entered and analyzed using SPSS (Statistical Package for Social Science) statistical package version 16. Quantitative data were presented by mean (X) and standard deviation (SD). Qualitative data were presented in the form of frequency distribution tables, number and percentage. It was analyzed by chi-square (χ^2) test. However, if an expected value of any cell in the table was less than 5, Fisher Exact test was used (if the table was 4 cells), or Likelihood test (if the table was more than 4 cells). Level of significance was set as P value.

II. Results

Table 1: Socio demographic data of studied caregivers. This table showed that, mean age of the caregivers was 40.7 ± 10.7 . More than two thirds of the caregivers were female. About half of the caregivers have high education and more than half of them are working. The majority of the caregivers (80.2%) are married.

Table 2: Data of caring for elderly among 400 studied care givers. This table illustrated that, more than half of caregivers take care of elderly people at a rate of 31 to 80 hours per week, in addition to forty percent of them caring for a long period (5-10) years. Most of the caregivers (90%) caring for one elderly while just 10 % caring for two elderly persons. Finally, more than half of caregivers caring for their parents.

Table 3: Socio demographic data of elderly distributed by their urinary incontinence. This table shows that, mean age of elderly is 76.3 ± 7.9 with the prevalence rate of incontinence 52% and 42% of them have bladder and bowl incontinence with statistical significant difference.

Table 4: Association between incontinence in elderly clients and caregiver quality of life. This table showed that, high level quality of life appear more among caregivers who caring for elderly without incontinence. While low and moderate level quality of life was associated with caring someone with incontinence.

Table 5: Relation between socio demographic characters of studied caregivers and their quality of life categories. This table illustrated that, there were some factors influencing caregivers' quality of life as age, gender, social status, economic status and work. The age group range from (20- 29) have mid-range quality of life with percent 77.5%. Male have high quality of life than women. High quality of life scores appears more among single and working caregivers. Caregivers with enough income have high level quality of life.

Table1: socio demographic data of studied caregivers

| | Frequency | Percent |
|--------------------------------------|--------------------|--------------|
| Age groups of caregivers | | |
| 20-29 years | 71 | 17.8 |
| 30-39 years | 104 | 26.0 |
| 40 - 49 years | 129 | 32.2 |
| 50 - 60 years | 96 | 24.0 |
| Mean ± SD | 40.7 ± 10.7 | |
| Gender | | |
| Male | 129 | 32.2 |
| Female | 271 | 67.8 |
| Education level for caregiver | | |
| Illiterate | 56 | 14.0 |
| basic education | 32 | 8.0 |
| moderate education | 114 | 28.5 |
| high education | 198 | 49.5 |
| Caregivers work | | |
| Work | 217 | 54.2 |
| Not work | 183 | 45.8 |
| Caregivers marital status | | |
| Single | 55 | 13.8 |
| Married | 321 | 80.2 |
| Divorced | 8 | 2.0 |
| Widowed | 16 | 4.0 |
| Caregivers income | | |
| enough for all needs | 151 | 37.8 |
| enough necessary needs | 169 | 42.2 |
| not enough | 80 | 20.0 |
| Total | 400 | 100.0 |

Table 2: Data of caring for elderly among 400 studied caregivers

| | Frequency | Percent |
|--|-----------|---------|
| Caring hours per week groups | | |
| 0 - 30 working hours/week | 183 | 45.8 |
| 31 - 80 working hours/week | 217 | 54.2 |
| How long of caring: | | |
| less than five years | 119 | 29.8 |
| 5 - 10 years | 160 | 40.0 |
| more than 10 years | 121 | 30.2 |
| Number of elderly person receiving care | | |
| One | 360 | 90.0 |
| Two | 40 | 10.0 |

| Relation between caregiver and elderly | | |
|--|------------|--------------|
| husband or wife | 24 | 6.0 |
| father or mother | 225 | 56.2 |
| grandfather or grandmother | 39 | 9.8 |
| father or mother in low | 88 | 22.0 |
| Other | 24 | 6.0 |
| Total | 400 | 100.0 |

Table 3: Socio demographic data of elderly distributed by their urinary incontinence status.

| | Urinary incontinence | | | | Total NO. % | P value |
|-------------------------------|----------------------|----------------|-----------------|--|-------------------------------------|---------|
| | Yes NO. % | No NO. % | Total NO. % | | | |
| Age groups of elderly | | | | | | |
| 60 - 70 years | 8 8.3% | 88 91.7% | 96 100% | | X ² =141, P=0.000 HS | |
| 71 - 80 years | 104 52% | 96 48% | 200 100% | | | |
| 81 - 95 years | 96 92.3% | 8 7.7% | 104 100% | | | |
| Mean ± SD | 76.3 ± 7.9 | | | | | |
| Gender of elderly | | | | | | |
| Male | 105 56.8% | 80 43.2% | 185 100% | | X ² =3.10, P= 0.07 NS | |
| Female | 103 47.9% | 112 52.1% | 215 100% | | | |
| Income for elderly | | | | | | |
| No income | 16 40% | 24 60% | 40 100% | | X ² =3.6, P= 0.14 NS | |
| Yes & enough for needs | 89 50.3% | 88 49.7% | 177 100% | | | |
| Yes & not enough for needs | 103 56.3% | 80 43.7% | 183 100% | | | |
| Living with caregivers | | | | | | |
| Yes | 185 56.2% | 144 43.8% | 329 100% | | X ² =13.3, P=0.000 HS | |
| No | 23 32.4% | 48 67.6% | 71 100% | | | |
| Stool incontinence | | | | | | |
| Yes | 89 100% | 0 0% | 89 100% | | X ² =105, P=0.000 HS | |
| No | 119 38.3% | 192 61.7% | 311 100% | | | |
| Total | 208 52 % | 192 48% | 400 100% | | | |

Table 4: Association between incontinence in elderly clients and caregiver quality of life.

| | | caregivers QoL categories | | | | | | P value |
|---|-----|---------------------------|-----------|---------------|--------------|------------|--------------|------------------------------------|
| | | Low QoL | | Mid-range QoL | | High QoL | | |
| | | NO. | % | NO. | % | NO. | % | |
| Urinary incontinence | Yes | 16 | 7.7% | 151 | 72.6% | 41 | 19.7% | X ² =59.4, P=0.000HS |
| | No | 0 | 0% | 88 | 45.8% | 104 | 54.2% | |
| Urinary incontinence & Stool incontinence | yes | 16 | 18% | 56 | 62.9% | 17 | 19.1% | LR=59.1, P=0.000 HS |
| | No | 0 | 0% | 183 | 58.8% | 128 | 41.2% | |
| Total | | 16 | 4% | 239 | 59.8% | 145 | 36.2% | |

Table 5: Relation between socio-demographic characters of studied caregivers and their QoL categories

| Socio-demographic characters | Overall scores caregivers QoL | | | | | | P value | | |
|------------------------------|-------------------------------|-------|---------------|--------|----------|-------|---------|--------|--------------------------|
| | Low QoL | | Mid-range QoL | | High QoL | | | Total | |
| | N0. | % | N0. | % | N0. | % | N0. | % | |
| Age groups | | | | | | | | | |
| 20 - 29 years | 0 | 0 | 55 | 77.5% | 16 | 22.5% | 71 | 100% | LR=55.4 p=0.000HS |
| 30 - 39 years | 16 | 15.4% | 48 | 46.2% | 40 | 38.5% | 104 | 100% | |
| 40 - 49 years | 0 | 0 | 80 | 62% | 49 | 38% | 129 | 100% | |
| 50 - 60 years | 0 | 0 | 56 | 58.3% | 40 | 41.7% | 96 | 100% | |
| Gender | | | | | | | | | |
| Male | 0 | 0% | 40 | 31.0% | 89 | 69% | 129 | 100% | X2=90.3, P=0.000HS |
| Female | 16 | 5.9% | 199 | 73.4% | 56 | 20.7% | 271 | 100% | |
| Education level | | | | | | | | | |
| Illiterate | 0 | 0% | 56 | 100.0% | 0 | 0% | 56 | 100.0% | LR=105.9, p=0.000HS |
| Basic education | 0 | 0% | 16 | 50.0% | 16 | 50.0% | 32 | 100.0% | |
| Moderate education | 16 | 14.0% | 64 | 56.1% | 34 | 29.8% | 114 | 100.0% | |
| High level education | 0 | 0% | 103 | 52.0% | 95 | 48.0% | 198 | 100.0% | |
| Caregivers work | | | | | | | | | |
| Work | 0 | 0% | 104 | 47.9% | 113 | 52.1% | 217 | 100.0% | X2=628, P=0.00 OHS |
| Not work | 16 | 7.8% | 135 | 73.8% | 32 | 17.5% | 183 | 100.0% | |
| Marital status | | | | | | | | | |
| Single | 0 | 0% | 31 | 56.4% | 24 | 43.6% | 55 | 100.0% | LR=16.6, P=0.01 Sig. |
| Married | 16 | 5.0% | 192 | 59.8% | 113 | 35.2% | 321 | 100.0% | |
| Divorced/widowed | 0 | 0% | 16 | 66.7% | 8 | 33.3% | 24 | 100.0% | |
| Caregivers income | | | | | | | | | |
| Enough for all needs | 0 | 0% | 64 | 42.4% | 87 | 57.6% | 151 | 100.0% | LR=140.2, P=0.000 HS |
| Enough necessary | 0 | 0% | 111 | 65.7% | 58 | 34.3% | 169 | 100.0% | |
| Not enough | 16 | 20.0% | 64 | 80.0% | 0 | 0% | 80 | 100.0% | |
| Total | 16 | 4.0% | 239 | 59.8% | 145 | 36.2% | 400 | 100.0% | |

III. Discussion

Ageing may have associated with higher prevalence of urinary incontinence (UI). The total numbers of older persons with UI are increasing exponentially around the world (DuBeau, Kuchel, Johnson, Palmer, and Wagg, 2010). Urinary Incontinence (UI) encompasses adverse physical, psychological, and social effects, including skin breakdown, frequent urinary tract infections, impaired sleep, falls, fractures, social isolation, anxiety, depression, embarrassment and low self-esteem. Increased health care cost to individuals and society is another vital consequence of urinary incontinence. Direct costs include payments on diagnostic investigations, medical or surgical interventions and rehabilitations. Indirect costs include patient and carer expenditures on laundering, cleaning, special absorbent and skin treatment products (Haylen, et al., 2010).

Regarding prevalence of incontinence, the present study revealed that, the prevalence rate of incontinence in the studied sample was 52%. This result was in line with study by Ahmed, Osman, Al-Alaf, & Al-Tawil, (2013) who studied at "the Prevalence of Urinary Incontinence and Probable Risk Factors in a Sample of Kurdish Women". They reported that, the overall prevalence of UI was 51.7%. El-Azab, Mohamed & Sabra (2007) studied "the prevalence and risk factors of urinary incontinence and its influence on the quality of life among Egyptian women". They revealed that, the prevalence of UI among study subjects was 54.8%.

As regard to association between incontinence in elderly clients and caregiver quality of life. The present study showed that, high level quality of life appears more among caregivers who caring for elderly without incontinence. While low and moderate level quality of life was associated with caring someone with incontinence. This result was in the same line with Lamura & Rose, (2015) who studied "The Impact of Incontinence Management on Informal Caregivers' Quality of Life". Results display that, the caregivers' Quality of Life was better when no incontinence was reported, Emmons & Robinson (2014) reported that, urinary incontinence can have a profound impact on the quality of life. That, may be due to the more responsibilities relies on the caregiver where the elderly with incontinence needs a lot of care as he/she became more dependent especially if their elderly disabilities.

The present study revealed that, there were some factors influencing caregivers' quality of life as age, gender, marital status, economic status and work. This result was in agreement with Morley, Dummett, Peters, et al., (2012) their study entitled "Factors Influencing Quality of Life in Caregivers of People with Parkinson's Disease and Implications for Clinical Guidelines" and stated that, Outcomes propose various effects on caregivers' quality of life. These comprise caregiver age, gender, health status, and duration of the caregiving role. Also Meecharoen, et al., (2013) who studied "Factors Influencing Quality of Life among Family Caregivers of Patients with Advanced Cancer". They found that, caregivers' age, family hardness and social support had important direct positive effects on caregiver quality of life. In addition to caregiver Quality Of Life (QOL) was unfavorably influenced by disability of the affected person and by the carers' age, gender, and physical health (McCullagh, Brigstocke, Donaldson & Kalra, 2005). That can be explained by regarding the age the caregivers as they aging, may have a chronic problems and increase burden on them. As regard to gender, female caregivers have more responsibilities than men that may lead to more burden. For marital status single caregivers may have fewer responsibilities than married. In relation to employment, working caregivers have a part of time he/she can spend away from caregiving. Enough income can contribute in increasing and improve quality of life as it help caregivers to meet their needs.

IV. Conclusion

According to the previous results it can be concluded that, incontinence more prevalent among elderly. Caring for someone with incontinence can affect caregiver quality of life.

Recommendations

More awareness of the growing problem of incontinence should be tackled, and guidelines for distribution of adequate information of services and good examples of incontinence care. Education and training programs for professional knowledge of the carers' situation should have much more attention.

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