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A PARTICIPATORY ACTION RESEARCH TO EVALUATE THE OUTCOMES OF CARE OF A NURSE-LED CONTINENCE CARE SERVICE FOR CHINESE PRIMARY CARE PATIENTS WITH LOWER URINARY TRACT SYMPTOMS: A TWO-YEAR PROSPECTIVE LONGITUDINAL STUDY

Hypothesis / aims of study

This study aimed to evaluate the outcomes of care of a nurse-led continence care service for Chinese primary care patients with lower urinary tract symptoms (LUTS).

It was hypothesized that a nurse-led continence care service would be more effective than usual care provided by primary care doctors in alleviating LUTS severity and improving health-related quality of life (HRQOL), general health perception and patient enablement.

Study design, materials and methods

The Nurse and Allied Health Clinic for Continence Care (NAHC-CC) is a government funded service located in the General Out-patient Clinics (GOPCs). Patients may be referred to the programme by their primary care doctor, or may be self-referred. Interventions are provided by nurses with specialist training in urology. These included the initial and follow-up assessments, and protocol-driven conservative treatments. The initial assessment included: a general physical examination, bladder stress testing, uroflowmetry, measurement of pelvic floor muscle strength and estimation of the post-void residual urine volume. Conservative measures were tailored for each patient according to the type of LUTS and may have included: instructions on pelvic floor muscle exercise, diet modification advice, bladder training exercises and urethral massage. Patients who were identified to have more serious LUTS or who failed to improve with conservative nurse-led treatments were referred to secondary care for further medical assessment and treatment.

The quality of the NAHC-CC was evaluated and enhanced through 3 audit cycles that identified areas for improvement and strategies for enhancement (1). A two-year cohort study was conducted after the first audit cycle to evaluate the outcomes of care and establish evidence on the effectiveness of the NAHC-CC service.

Two parallel cohorts of patients were recruited. For the intervention group, all new patients enrolled into the NAHC-CC service were recruited. Patients were excluded if they were aged < 18 years, could not understand Cantonese, or were too ill to give consent. For the comparison group, primary care patients with LUTS attending GOPCs where the NAHC-CC service was not available were identified by use of a screening questionnaire and recruited. Patients in the comparison group were excluded if they were aged < 18 years, could not understand Cantonese, were too ill to give consent, or had received any services from the NAHC-CC or a specialist urology clinic within the previous one year for his/her LUTS. Both cohorts were assessed at baseline, 12-months and 24-months.

The study instruments included: International Prostate Symptoms Score (IPSS) to measure LUTS severity and LUTS-specific HRQOL; Modified Incontinence Impact Questionnaire-Short Form (IIQ-7) to measure LUTS-specific HRQOL; the Short Form-12 v2 (SF-12 v2) Health survey; the Patient Enablement Instrument (PEI); and the Global Rating of Change Scale (GRS).

The primary outcome was LUTS severity as measured by the IPSS. A sample size for estimating the difference in the mean change of the IPSS total symptom score at 24-months between the intervention and control groups with moderate effect size 0.3 was calculated. Using these parameters, a sample size of 176 subjects in each group was needed in order to have 80% power and 5% level of significance by independent t-test. Using a predicted attrition rate of 50%, the minimum number of subjects required at baseline was calculated to be 352 per group.

Multiple linear regressions and logistic regressions controlling for confounding factors (socio-demographics, baseline LUTS severity and the respective outcomes at baseline) were used to examine the effects of NAHC-CC on the outcomes.

The study protocol of the present study was approved by institutional review broads. Written informed consent was obtained from all individual participants included in the study.

Results

720 subjects (360 in each group) were recruited. 335 subjects (intervention group: 170 subjects; control group: 165 subjects) completed the 24-month follow-up. 7 subjects in the control group were excluded because they had joined the NAHC-CC service during the 24-month follow-up period.

The multiple linear regression analysis found that the intervention group showed a greater reduction in LUTS severity as measured by the IPSS ($P<0.05$), greater improvement in HRQOL as measured by the IIQ-7 ($P<0.05$) and SF-12 v2 Mental Component Summary ($P<0.05$). Multiple logistic regression found that the intervention group was more likely to have greater patient enablement as measured by PEI ($P<0.01$) and improved general perception of their health as measured by GRS scale ($P<0.01$).

Interpretation of results

This was the first study to evaluate the long term effects (24-months) of nurse-led continence care primary care services on Chinese male and female patients with LUTS. We found that the NAHC-CC services were more effective than usual care provide by a primary care doctor in improving patient-reported outcomes namely symptom severity, HRQOL, patient enablement and general health perception, and that the effects were sustained for at least 24 months. These findings add to evidence from earlier studies which evaluated the shorter term effectiveness up to 12-months (2).

Given that the prevalence of LUTS is increasing worldwide and that nurse-led continence care services have been shown to be effective with effects that persist beyond the period of the intervention, such services should be made more broadly available and accessible in primary care settings so that more individuals with LUTS can benefit.

There were some limitations. First, a randomized control trial was not conducted which would be the gold standard for studying effectiveness. The two cohorts were from slightly different settings which may be susceptible to selection bias. Despite this, one advantage of our design was that the study was conducted in a pragmatic primary care setting, which may provide better translational evidence. Second, all outcomes were self-reported which may be prone to recall bias. However, the amount of suffering associated with LUTS can be quite subjective, and use of subjective measures may be a more valid method for measuring the impact of LUTS on the individual than objective measures of continence.

Concluding message

We conclude that the NAHC-CC service is effective in alleviating the symptom severity and impact on health-related quality of life in patients with LUTS, and that these improvements are sustained for at least 2 years. Recipients of this service were also better enabled and had improved general health. Although more patients with LUTS would benefit if these services were widely available in primary care, it is suggested that a cost analysis be conducted to ensure that it is cost-effective before undertaking a further roll-out of the service.

References

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Disclosures

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