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Abstract

Background: Hospitalization has a negative effect on the functional and clinical outcomes of elderly patients.

Aims: To evaluate the effect of a care transition intervention on functional and clinical outcomes and quality-of-life of elderly patients in the Islamic Republic of Iran after hospital discharge during a 3-month follow-up.

Methods: We conducted a randomized controlled trial of 304 elderly hospitalized patients in Tehran from December 2018 to January 2020. The intervention group (n = 152) received care transition intervention and the control group (n = 152) received routine hospital discharge. All patients were assessed during hospital stay and at 30, 60 and 90 days after hospital discharge. Participants were evaluated using the Minimum Data Set–Home Care form, which assesses daily living activity, instrumental daily living activity, cognitive performance, cognition, pain, and

depression. Rehospitalization and quality-of-life were evaluated, and differences between the groups and trends in quality-of-life were assessed.

Results: Only instrumental daily living activity in the functional outcomes and quality-of-life were greater in the intervention group than the controls. The intervention (odds ratio (OR): 0.11; 95% confidence intervals (CI): 0.01–0.97), age (OR: 1.16; 95% CI: 1.01–1.33), and cognition (OR: 1.24; 95% CI: 1.02–1.51) predicted instrumental daily living activity. Age (coefficient: –0.009, P = 0.001), depression (coefficient: –0.157; P 75 years and fewer than 3 comorbidities; 75 years and more than 3 comorbidities; and 0.05) (Table 2).

The effect size had a moderate effect on the improvement of EQ-5D and EQ-VAS scales of the participants in the intervention group (Table 3).

Trend analysis
Functional outcomes

The IADL trend changed during follow-up after the intervention in both intervention and control groups. Figure 2a shows the trend in IADL from baseline to 3-month follow-up in the two groups. Higher scores indicate greater dependence. Although the intervention group was more dependent than the control group at hospital discharge (baseline assessment), the IADL score decreased (less dependency) in the intervention group during follow-up whereas it increased in the control group, showing higher levels of dependence (Table 2).

Clinical outcomes

No significant differences between the two groups were seen for pain, depression, readmission to the emergency department and rehospitalization after the follow-up ($P > 0.05$).

Quality-of-life

Figure 2 (b and c) shows the trends in quality-of-life (EQ.5D and EQ.VAS) during follow-up in both groups. Higher scores indicate better conditions. While EQ.5D and EQ.VAS scores fell in both the Control and intervention groups, the degree of decline in quality-of-life in the control group was greater than in the intervention group. The intervention group had significantly higher scores in EQ-5D and EQ.VAS than the control group (Table 2).

Regression analysis

The intervention [odds ratio (OR): 0.11; 95% confidence intervals (CI): 0.01–0.97, $P = 0.04$], age (OR: 1.16; 95% CI: 1.01–1.33, $P = 0.02$) and cognition (OR: 1.24; 95% CI: 1.02–1.51, $P = 0.02$) were considered predictive factors of IADL status in the fully adjusted logistic regression analysis. In other words, ageing and cognitive impairment decreased the chances of functional independence, whereas implementing the CTI improved the functional status of elderly patients.

The total score of quality-of-life had near normal distribution. In a linear regression analysis of the predictive factors of quality-of-life, age, depression, cognitive status and pain were all significantly associated with quality-of-life. Therefore, elderly patients who were depressed, had cognitive impairment, or suffered from pain had a lower quality-of-life (Table 4).

Discussion

This study was a single-blinded randomized control trial that aimed to evaluate the effectiveness of CTI on functional indicators, clinical indicators and quality-of-life among hospitalized elderly patients after discharge from hospital.

Our results show that providing a CTI and a 3-month follow-up after discharge led to significant changes in IADL and quality-of-life. However, the intervention did not produce better functional and clinical outcomes. The intervention, age and cognition were predictive factors of IADL status in the regression analysis, whereas age, depression, cognition status and pain predicted quality-of-life.

IADL

Post-discharge care significantly reduced the dependence of elderly patients in the intervention group compared with the control group. A 2011 study also reported that the use of CTI in elderly patients after hospital discharge improved IADL functions of the elderly compared with before the intervention (21). Providing a home rehabilitation programme for elderly people with musculoskeletal problems was reported to significantly change their functional dependence during the assessment period and improve their IADL dependence levels (20). However, a study in Australia found no significant changes in IADL functional status with provision of CTI for elderly people (6). An analysis of the effects of home care programmes on elderly people in Germany found that implementation of CTI did not change the IADL of the elderly participants (22).

It seems IADL is affected by the clinical situation of elderly people after hospital discharge. For example, in longitudinal studies, IADL trends after critical illness and after discharge from hospital were downward and upward, respectively (23). It may be argued that the post-discharge care programme leads to greater awareness among families and elderly people about the treatment process and reduces fears of the unknown dimensions of illnesses. Such programmes are also assumed to result in the greater likelihood of elderly people and their families to seek medical care. In the CTI model, the focus of the care team is on empowering the patient and their family in areas such as drug management, awareness of danger signs and attendance of follow-up appointments with the physician. On the other hand, in this care model, the elderly patient communicates with the care team by telephone. Drug management and making telephone calls are two items of the IADL that are reinforced in this care model. Therefore, the CTI model could be effective in increasing the independence of elderly people.

The intervention, age and cognition impairment were the predictive factors of IADL in our regression analysis. These factors were also predictive in another study (24). Performing some IADL activities requires coordination and unimpaired brain activity. If a patient has some degree of cognitive impairment, they may have difficulty performing some IADL activities (25). It is not unreasonable to expect that IADL activities will decline with age. Cognitive problems will also greatly affect the elderly, and the first symptoms in people with cognitive impairment are deficits in IADL activities.

Quality-of-life

The main goal of the CTI for elderly patients is to improve quality-of-life. Lack of or inadequacy of discharge programmes may lead to distress, anxiety, medication errors and insufficient adherence to the treatment process. This will lead to a decline in quality-of-life among elderly patients (26). In our study, the quality-of-life of participants in the intervention group was significantly better than the control group. This finding was also reported in a 2014 study that assessed patients with chronic obstructive pulmonary disease (27). However, a 2019 study in which home care was provided to elderly people with chronic obstructive pulmonary disease found no improvement in their quality-of-life (28). In another study, providing CTI improved the self-management ability of elderly people, decreased dependency and changed their lifestyles (29). CTI affected their cognitive, behavioural and emotional responses and hence helped maintain quality-of-life (29).

Many older adults live alone. Implementing the CTI model, in addition to providing the opportunity for a specialist medical visit at home, allows elderly people to interact by telephone with the care team. Hence, the feeling of being supported and interacting with the care team can reduce some of their anxiety about disease management and indirectly affect their sense of well-being and quality-of-life.

Age, depression, cognition status and pain were predictive factors of quality-of-life in our regression model which has been found in other studies (30,31). As people age, they may have chronic pain, cognitive impairment and a combination of pain and decreased mobility which may cause depression and dependency and poorer quality-of-life status.

Our study had some limitations. Only one researcher evaluated the elderly participants in the two groups (completing the MDS-HC and accurate coding of the data required a trained and skilled evaluator), and hence the evaluator could not be blinded. We followed the participants for 3 months and it is possible that more follow-up time is needed to detect changes in cognition and mood among elderly patients and obtain clearer results.

To conclude, the CTI model appeared to be effective in maintaining the independence of older adults after hospital discharge and improving their quality-of-life. In the Islamic Republic of Iran, there are no formal guidelines for CTI and older adults are discharged with verbal training provided by a nurse. Consideration should be given to implementing formal transitional care for an elderly patient being discharged from a hospital in the Islamic Republic of Iran.

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Effets des soins de transition entre l'hôpital et le domicile sur l'état de santé des patients âgés en République islamique d'Iran

Résumé

Contexte : L'hospitalisation a un effet négatif sur les performances fonctionnelles et cliniques des patients âgés.

Objectifs : Évaluer l'effet d'une intervention de transition des soins sur l'évolution fonctionnelle et clinique et sur la qualité de vie des patients âgés en République islamique d'Iran après leur sortie de l'hôpital au cours d'une période de suivi de trois mois.

Méthodes : Nous avons mené un essai contrôlé randomisé auprès de 304 patients âgés hospitalisés à Téhéran entre décembre 2018 et janvier 2020. Le groupe d'intervention (n = 152) a bénéficié d'une intervention de transition des soins, tandis que le groupe témoin (n = 152) a suivi une procédure de sortie d'hôpital habituelle. Tous les patients ont été évalués pendant leur séjour à l'hôpital, puis 30, 60 et 90 jours après leur sortie de l'hôpital. Les participants ont été évalués à l'aide du formulaire Minimum Data Set–Home Care (ensemble minimal de données pour les soins à domicile), qui évalue les activités de la vie quotidienne, l'activité instrumentale de la vie quotidienne, les performances cognitives, la cognition, la douleur et la dépression. Le taux de réadmission à l'hôpital et la qualité de vie ont été évalués, ainsi que les différences entre les groupes et les tendances en matière de qualité de vie.

Résultats : Seule l'activité instrumentale de la vie quotidienne dans les résultats fonctionnels et la qualité de vie étaient supérieures chez les patients du groupe d'intervention à ceux du groupe témoin. L'intervention (odds ratio (OR) : 0,11 % ; intervalle de confiance (IC) à 95 % : 0,01-0,97), l'âge (OR : 1,16 ; IC à 95 % : 1,01-1,33) et la cognition (OR : 1,24 ; IC à 95 % : 1,02-1,51) ont permis de prédire l'activité instrumentale de la vie quotidienne. L'âge (coefficient : –0,009, p = 0,001), la dépression (coefficient : –0,157 ; p