

# ROLE OF COMPONENTS OF FRAILITY ON QUALITY OF LIFE IN DIALYSIS PATIENTS.

## A CROSS-SECTIONAL STUDY

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### Introduction

The characteristics of patients on dialysis treatment have dramatically changed over the last years. (Bremer et al., 1989)

The main differences are represented by:

- old age, (Panzetta et al., 2009; Brown & Johanson 2010)
- many comorbidities, (Maasi et al., 2008)
- disabilities, (Cook & Jassal 2008)
- malnutrition, (de Mutser et al., 2009)
- mental disorders, (Murray et al., 2006)
- sometimes depressive mood. (Son et al., 2009)

All these conditions are determinants of frailty <sup>2</sup>

### Background



A lot of studies explored the role of various factors on quality of life (QoL) in patients with chronic renal disease. (De Santo et al., 2008)

To date there is no agreement yet on this topic. (Cleary & Drennan 2005)

In the dialysis population frailty condition is significantly represented not only among elderly people, but even in people younger than 40-50 years. (Johansen et al., 2007)

However, studies on the contribution of components of frailty to QoL are still rare, not conclusive or have taken into account only small populations. (Antoine et al., 2004; Johansen et al., 2007; Saito & Jassal 2007; Soni et al., 2010) <sup>3</sup>

### Objective



The study aims to evaluate the role of the following components of frailty:

- physical disability,
- dependence,
- nutritional status,
- comorbidities,
- social and economic conditions, (Panzetta et al., 2009)

on QoL of dialysis patients. <sup>4</sup>

### Methods



#### Materials for research:

- Short Form-36 questionnaire (Ware & Sherbourne 1992);
- Mini Mental State Examination (Folstein et al., 1975);
- Activity of Daily Living (Katz 1963);
- Instrumental Activity of Daily Living (Lawton et al., 1969);
- Karnofsky Index (Karnofsky & Burchenal 1949);
- Subjective Global Assessment (Detsky et al., 1987);
- Evaluation of:
  - comorbidities;
  - social condition.

#### Data analysis:

Multiple linear regression model (stepwise), test ANOVA

#### Software employed:

Microsoft Excel 2007, Gestione SF36 mdb, SPSS v. 18.0. <sup>5</sup>

### Short Form-36 questionnaire

(Ware & Sherbourne 1992; Apolone et al., 1997 Official Italian version)

36 multiple choice questions divided in 8 scales measuring:

- physical functioning** → how people manage common daily living activities; difficulties in activities linked to one's role due to physical health.
- bodily pain** → pain and its effects on daily activities \*(last four weeks before questionnaire administration);
- general health** → personal perception of health;
- vitality** → sensation of energy/mental fatigue;
- social functioning** → time dedicated to it and physical or emotional problems interfering\*;
- role emotional** → how emotional factors interfere with work or other activities;
- mental health** → psychological well being or suffering; mainly anxiety and depression.

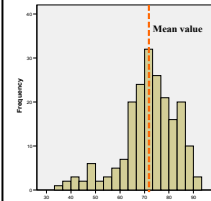
Physical component  
Mental component (psychological)  
Comprehensive clusters

### Results (1)



#### Sample description:

patients on dialysis treatment in the Trieste Area on august, 1<sup>st</sup> 2010.



- 233 prevalent dialysis patients
- 203 enrolled patients
- 190 on hemodialysis
- 13 on peritoneal dialysis
- Mean age: 72.03 ± 11.19 years
- 126 (62%) males
- 77 (38%) females
- Mean dialytic age: 42.57 ± 55.61 months
- Mean comorbidities: 3.04 (range 0 – 8)

### Results (2)

#### Short-Form 36 questionnaire results (range: 0 – 100)

Domain cluster SF-36	Mean	St. Dev.	Median	25 – 75 percentiles
Physical functioning	46,74	28,64	45	20 70
Role physical	41,01	33,5	50	0 75
Bodily pain	60,33	28,94	52	41 84
General health	37,68	21,58	30	20 52
Vitality	44,04	17,15	40	30 55
Social activities	65,68	24,81	62,5	50 87,5
Role emotional	76,34	30,21	100	66,67 100
Mental health	64,01	18,61	64	48 76
Physical component	33,93	10,42	33,18	25,79 41,39
Mental component	48,48	8,6	50,26	42,03 54,26

### Results (3)

#### Role of individual factors of frailty on QoL. Multiple linear regression - stepwise

Domain SF-36	Individual factors	P value	R2
Physical functioning	Dependence	<0,001	0,72
	Gender	0,01	
	Peripheral vascularopathy	0,05	
Role physical	Dependence	<0,001	0,3
	Instrumental disability	0,01	
Bodily pain	Dependence	<0,001	0,19
	Diabetic age	0,02	
General health	Dependence	<0,001	0,33
	Substantial status	0,01	
Vitality	Dependence	<0,001	0,47
	Nutritional status	0,01	
Social activities	Diability	<0,001	0,28
	Nutritional status	0,02	
	Peripheral vascularopathy	0,05	
Role emotional	Nutritional status	<0,001	0,23
	Disability	0,01	
Mental health	Dependence	<0,001	0,33
	Nutritional status	0,02	

#### Cluster SF-36

Cluster SF-36	Individual factors	P value	R2
Physical component	Dependence	<0,001	0,53
	Comorbidities	0,02	
Mental component	Nutritional status	0,001	0,24
	Disability	0,05	

### Results (4)



#### Role of social factors on QoL

Domain SF-36	Social factors	P value	Test ANOVA
Physical functioning	Lives with "alone, caregivers, nursing home"	<0,001	0,001
	Economic condition	<0,001	
	Social relationships	0,02	
Role physical	Social relationships	0,01	0,001
	Economic condition	0,02	
Bodily pain	Social relationships	0,04	0,04
	Economic condition	0,04	
General health	Lives with "alone, caregivers, nursing home"	0,005	0,001
	Economic condition	0,02	
Vitality	Lives with "alone, caregivers, nursing home"	0,04	0,001
	Economic condition	0,02	
Social activities	Social relationships	0,002	0,001
	Economic condition	0,02	
Role emotional	Social relationships	n.s.	0,001
	Economic condition	0,01	
Mental health	Social relationships	0,002	n.s.
	Economic condition	0,01	



### Discussion

Every factor of frailty has a specific role on QoL especially on its **physical component**.

Statistical analysis shows that the main factors **reducing** QoL are:

- **dependence**; (Mor et al., 1984; Panzetta et al., 2009)
- **malnutrition**; (Stenvinkel et al., 2000)
- **physical and instrumental disabilities**. (Hsieh et al., 2010)

The role of comorbidities is **less important**. (Mujais et al., 2009)

The main factors **increasing** QoL are:

- **social relationships**; (Cukor et al., 2007)
- **adequate economic conditions**. (Kao et al., 2009)

Family relationships are **less important**. (Boaretti et al., 2006)

Scholarship and marital status are **not significant**. (Lessan-Pezeshki & Rostami 2009)

(Data adjusted for age, dialytic age and gender)

### Conclusions

#### Implications for practice

To assure an acceptable QoL for dialysis patients clinical management is **not enough**; nursing role is crucial. Nursing care must aim at:

1. Guaranteeing **constant screening** of patients using regularly adequate **clinical records** (provided with anamnestic and observational tools).
2. Promoting nutritional and functional **rehabilitation**, providing professional support and education.
3. Preventing **social isolation** in all his features. (Cukor et al., 2007) setting up a **coordinated net of social and health services**.