THE EFFECT OF NTERVENTIONS ON QUALITY ADJUSTED LIFE YEARS (QALY) OF DIALYSIS PATIENTS

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KEYWORDS

Quality of life, Cost Utility Index, Quality Adjusted Life Years, Cost Effectiveness DALY

ABSTRACT

Current study describes about the effect of intervention on "quality-adjusted life years" (QALYs) of nephro patients. Current study uses quantitative techniques for collection and analysis of data of nephro patients' names as intervention group. During this analysis, twenty-seven (27) patients were involved. Structure questionnaire was used for collection of data. The results of the current study revealed that QALY of intervention group is better than patients who are treated by regular (normal) method among the nephro patients of Sheikh Zayed Hospital of Lahore Pakistan. The current study additionally evaluated the "Cost-Utility Index" of an intervention group and examines that this value was = Rs. 300,000 per "Quality-Adjusted Life Year (QALY)" with an "Incremental Cost Effectiveness-Ratio (ICER)" which yield value of fifty thousand (50,000). Therefore, the QALY is the best technique and valuable tool in medicinal services framework.

INTRODUCTION

This research determines effect of interventions on "quality-adjusted life years of nephro patients. For conducting analysis, current study used methods of quantitative research by using structure questionnaire. Zeckhauser and Shepard (1976) were main researchers who were introduced term QALY and investigated its impacts on its consequences. They described this term with quality of life and life span. Quality of life was intuitively used initial researches for the treatment of chronic urine disease (Klarman & Rosenthal, 1968; Gordillo, 2017). Jafar, Schmid and Levey (2005) and Stevens, Claybon, Schmid, Chen, Horio, Imai and Zhang (2011) describes that communities of Asian country are very lack behind in investigation of chronic urinary organ diseases and they further argued that there are number of the patients are increasing in Pakistan (Anees, Hameed, Mumtaz, Ibrahim, & Khan, 2011). About 15 to 20% people with age less than forty years are facing the problem of Urinary track reaction (Jafar et al., 2005; Anees et al., 2011).

In any hospital in Asian countries, there are 150 patients are belonging to acute kidney disease. He further describes that in a big city there are about 16000 who are suffering from urine diseases. For treatment of these diseases most important method is Dialysis on which large amount of money is spending around150000-200000 rupees per year are spending by a patient. Due to above mentioned reasons current research selected dialysis patients and check the QALY of life in intervention group. Initially notion of QALY was described with the help of multi attributed utility theory (Pliskin, Shepard, & Weinstein, 1980; Gilboa & Marinacci, 2016). Later on, the idea was described by diverse researches related with this spectacle and allied issues (Mehrez & Gafni, 1989; Gilboa & Marinacci 2016). Some described that 51 economic surveys were conducted on QALY and used this term of number of outcomes. After that term QALY was utilized as cost-effectiv method (Liu, Beyer & Aebersold, 2016; Drummond, Rambaut, Shapiro & Pybus, 2005).

Currently, QALY is used for economic analysis by the various organizations and making better policies for attaining QALY of life. QALY is also provided the base for measuring the different kinds of health-related measures such as "Disability Adjusted Life Year". Basically, DALY enables us to measure the problems regarding the diseases. DALY also enables us to measure the QALY aspects. This method provides framework for assuming disability in daily life (Murray, 1994). But on other hand, quality of life is maintained by using QALY framework which proves the additional benefits and rewards (Drummond at al., 2005). Examining the relationship of types of intervention is popular area of research (Jenq, Hung, Juan & Hsu 2017). It is seen that about fifteen to fifty percent patients of severe illness are suffering from the anxiety (Neilson, Pollard, Boonzaier, Corry, Castle & Smith 2013). There is significant effect of interventions provided by nurses about cure of their diseases (Katz, Irish, Devins, 2004; Meulen, Oosterom & Hordijk, 2014).

It is also seen that 10 % patients of nephrology are readmitted in hospitals again within a month (Dharmarajan, Hsieh, Bueno, Ross, Horwitz & Drye 2013; Dunlay, Gheorghiade, Reid, Chan, Hauptman & Spertus 2010). Severe illness has bad effect on QALY of life (Daryasari, Karkezloo, Mohammadnejad, Vosooghi & Kagi 2012). These illnesses have adverse effect on both the mental and physical health (Sanjida, McPhail, Shaw, Couper, Kissane, Price & Janda 2018; Moschopoulou, Hutchison, Bhui & Korszun 2018). The interventions can improve the status of QALY of the life (Bodenheimer & Millett, 2009; Yancy, Jessup, Bozkurt, Casey, Drazner & Johnson 2013; Senchak, Fang & Bauman 2018). Similarly, Stavrianopoulos (2016) examines that the telephonic interventions as provided by nurses has positive impact on QALY of life. Current research is conducted on selected patients of the dialysis patients. The researcher and two of the senior nurses provided the telephonic interventions to these selected patients till 9 months.

MATERIAL AND METHODS

Research Sampling

Primary data was collected from 2 wards i.e. male and female wards of the Sheikh Zaid Hospital Lahore. 41 patients aged 30 to 65 years of control group were selected as the sample of current study. And these patients were belonged to both the groups about the genders.

Data Collection Method

Patients of intervention group are contacted by telephone and asked the questions and provide guideline about the treatment. These people are also avail facility of specialized nurses. The data collected from these patients with the help of structures questionnaire. Data is collected in different interval of times. First step is phases this is named as step-1 and also called as initial step. In step 2 data was collected after 12 weeks. And in step3 data was collected after 9 months. The study is cross-sectional one because data was collected from same respondents after three intervals of times. Scale of eight dimensions was utilized for assortment of primary information. These eight dimensions are named as Bodily Pain Scale, Role Physical Scale, General Health Scale, Physical Functioning Scale, Social Functioning Scale, Vitality Scale, Mental Health Scale and Role Emotional Scale.

Quality of Life (Interventional Group)

For calculating the "quality of life of Intervention group patients" we have a tendency to analyze the suggests that of eight indicators of quality of life i.e. "Role Physical Scale, Bodily Pain Scale, Physical Functioning Scale, General Health Scale, Vitality Scale, Social Functioning Scale, Role Emotional Scale and Mental Health Scale" as shown within the table no.1

Role Physical Scale
There are 3 suggests that values for "Role Physical Scale" i.e. at the initial level, when twelve weeks and when nine months. At the initial level this price is adequate = "38.917", when "twelve weeks this price is adequate = 57.462 and when 9 months this price is adequate = 73.591" respectively.

Bodily Pain Scale
"Bodily Pain Scale" additionally has suggested 3 values i.e. at initial level, when twelve weeks and when nine months. At the initial level this price is adequate = "41.167", when twelve "weeks this price is the adequate = 49.385 and when nine months this price is adequate = 74.091" respectively.

Physical Functioning Scale
In "Physical Functioning Scale" suggests also 3 values i.e. at initial level, "when twelve weeks and when nine months are thought of at initial level this price is adequate = 48.5, when twelve weeks this price is adequate = 58.269 and when nine months this price is adequate = 75.955" respectively.

General Health Scale
In "General Health Scale" also proposed 3 values i.e. at the initial level, when twelve weeks and when nine months are thought of at "initial level this price is adequate = forty-two, when twelve weeks this price is adequate = 69.41 and when nine months this price is adequate = 71.364" severally.

Vitality Scale
In "Vitality Scale" suggests 3 values i.e. at the initial level, "when twelve weeks and when nine months are thought of at initial level this price is adequate = 41.167, when twelve weeks this price is adequate = 67.981 and when nine months this price is adequate = 68.905 severally".

Social Functioning Scale
Also In "Social Functioning Scale" suggests 3 values i.e. at the initial level, "when twelve weeks and when nine months are thought of at initial level this price is adequate = 59.333, when twelve weeks this price is adequate = 69.423 and when nine months this price is adequate = seventy severally".

Role Emotional Scale
In "Role Emotional Scale" suggests 3 values i.e. at the initial level, when twelve weeks and "when nine months are thought of at initial level this price is adequate = 41.111, when twelve weeks this price is adequate = 68.59 and when nine months this price is adequate = 71.212 severally".

Mental State Scale
"Mental Health Scale" additionally has suggested 3 values levels i.e. at the initial level, "when twelve weeks and when nine months are thought of at initial level this price is adequate = 38.267, when twelve weeks this price is adequate = 58.615 and when nine months this price is adequate = 67.818 severally".

Mean Values of All Eight Subscales
We got the ultimate price of quality of life by taking the typical of all the symptoms of quality of life i.e. for initial level than "when twelve weeks and when nine months severally. The average price of an initial level = 43.807 then when twelve weeks is = 62.391 and when nine months the typical price is = 71.617 severally". We have a tendency to get the ultimate price by "Total Average" that is = 59.272.

Table 1 Intervention Group Analysis

	Group	Mean	P-Values
Role Physical Scale	Day 1	"38.917"	0.00
	"12 Weeks Data"	"57.462"	0.00
	Data after 9th Month	"73.591"	0.00
Bodily Pain Scale	Day 1	"41.167"	0.00
	"12 Weeks Data"	"49.385"	0.00
	Data after 9th Month	"74.091"	0.00
"Physical Functioning Scale"	Day 1	"48.5"	0.00
	"12 Weeks Data"	"58.269"	0.00
	Data after 9th Month	"75.955"	0.00
"General Health Scale"	Day 1	"42"	0.00
	"12 Weeks Data"	"69.41"	0.00
	Data after 9th Month	"71.364"	0.00
"Vitality Scale"	Day 1	"41.167"	0.00
	"12 Weeks Data"	"67.981"	0.00
	Data after 9th Month	"68.905"	0.00
"Social Functioning Scale"	Day 1	"59.333"	0.00
	"12 Weeks Data"	"69.423"	0.00
	Data after 9th Month	"70"	0.00
"Role Emotional Scale"	Day 1	"41.111"	0.00
	"12 Weeks Data"	"68.59"	0.00
	Data after 9th Month	"71.212"	0.00
"Mental Health Scale"	Day 1	"38.267"	0.00
	"12 Weeks Data"	"58.615"	0.00
	9 Month Data	"67.818"	0.00
"Mean values of all 8 subscales"	Day 1	43.80775	0.00
	"12 Weeks Data"	62.391875	0.00
	9 Month Data	71.617	0.00
	Total Average	59.27220833	0.00

RESULTS OF STUDY

QALY is calculated with the help of following formula.
QALY = t*Q.
Where QALY represents the utility worth of health state, t describes the salary or wages in a given condition. The change in Q will also cause re-determined of QALY (Donaldson, Baker, Mason, Lee, Lancsar, Wildman & Sugden, 2011).

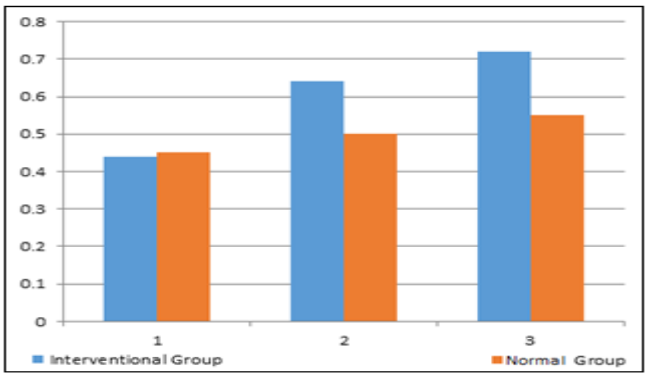
Table 2 Determination of QALY

Targeted Group	NOP	AC	LLY	UVHS	QALY
"Interventional Group"	"27"	"200000"	"0.1"	"0.44"	"0.74"
			"0.25"	"0.64"	
			"0.75"	"0.72"	

NOP: Number of Patients **AC**: Average Cost
UVHS: Utility Value of Health State
LLY: Lived Life Year

Calculation of QALY for Intervention group is aggregated as 0.74.
Cost-utility proportion = Cost of Normally treated/QALYs Produced by Control
The cost-utility estimation of ordinarily treated is roughly 250000 RS of one year.

Figure 1 QOL Intervention Group vs. Normal Group



DISSCUSSION

The QALY is described both the quality and amount of life lived by patient after health intervention. It affects the judgment of intervention about the health and correlates with minimum two or more than two health interventions (Sassi, 2006). From the best of the researcher knowledge, this is the initial effort to develop the cost-effectiveness analysis (ESRD) by health intervention. The Chronic renal disappointment (CRF) is the end stage of renal infection condition which describes various issues about NHS (National Health Service) which results in high expenses on health maintenance. These interventions have significant impact Patient's QALY of life and also result in dialysis process (Fouque and Aparicio, 2007). The results indicate that the intervention group reaps the better health status throughout the nine months while treating the ordinarily every aspect of PF, GH, and MH.

The increment in quality adjusted life years is seen from 11% within nine-month after release and from 28% at baseline to nine months from day first in intervention group. Besides this, the rate of mortality is also reduced up to 9% in intervention group which seems to great achievement of the interventions. The results demonstrated that people of intervention group enjoy the personal satisfaction even in common treated. This result is same like the result of previous researcher such as Višnjić, Veličković, and Milosavljević (2011). For estimation of QALY and its cost is always change due to long interval of time. Also, results also describes that QALY of the intervention group is better than ordinary patients of nephrology. This result is also similar result of Hørdam, Pedersen, Søballe, Sabroe & Ehlers (2011) whose findings are similar as compare to results of the current study.

CONCLUSION

QALY is the best technique and valuable tool in the medicinal services framework. This technique also estimates the quality-adjusted life years and quality of the life in patients' intervention group of the nephrology patients. The results demonstrated that people of intervention group enjoy the personal satisfaction even in common treated. This result is same like the result of previous research. For estimation of QALY and its cost is always change due to the long interval of the time. Also, the results also describe that QALY of intervention group is better than ordinary patients of nephrology. But the calculation of QALY and cost-effectiveness for intervention patients is not constant due the change of time interval. The results also describe that around Rs. 300,000 rupees for every QALY and the estimation of ICER is 50,000 rupees.

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