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Relationship between Health Related Quality of Life Determinants and Type of Delivery in Saudi Women

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Abstract

Background: This study was designed to evaluate the health-related quality of life (HRQoL) of Saudi women who had undergone different types of delivery and to identify factors that significantly affect the HRQoL on these women.

Materials and Methods: A comparative cross-sectional study was performed at Ministry of health (MOH) centers - Riyadh, Saudi Arabia. The Medical Outcome Study Short-Form 36-item survey (SF-36) was used to assess HRQoL. For comparison, the HRQoL in an equal number of healthy individuals was investigated; multivariate analysis of variance was used for comparisons between groups.

Results: Results showed that delivered women (case group) had significantly higher mean scores in the physical functioning, role-physical, vitality, role-emotional and mental health subscales. As regarding body pain, delivered women (case group) reported a significantly lower mean score than controls (Comparator group). Women who underwent caesarean section had significantly worse mean scores for all HRQoL domains, except for body pain, while the normal delivery women reported the highest HRQoL scores.

Conclusion: The overall test statistic was statistically significant for the eight subscales, indicating that there was a correlation between type of delivery and HRQoL. Further prospective studies are warranted to confirm these results owing to the inherent limitations of the cross-sectional design and backward analysis of this study.

Keywords: Quality of life; Saudi women; Delivery; SF-36

Introduction

The birth of a child may have a major impact on the health-related quality of life (HRQoL) of the new mother. The concept of health-related quality of life (HRQoL) is multidimensional and includes psychosocial, physical and emotional status, as well as patient autonomy, and is applicable to a wide variety of medical conditions. For purposes of clinical and public health research and practice, however, HRQoL is specific to health and more appropriate: it refers to patients' assessments of their current level of health-related functioning and well-being [1,2].

The purpose of a HRQoL instrument is not merely to measure the presence and severity of symptoms of disease, but also to show how the manifestations of an illness or treatment are experienced by an individual, whether that experience is descriptive or in terms of relative preferences for various health states [3]. HRQoL measure can be used to help evaluate health care intervention or treatment's efficacy, its economic value, or both [4].

According to World Health Organization (WHO) recommendations, the reasonable rate for caesarean is 5-15% of all deliveries performed. Rates more than 15% are considered inappropriate and unnecessary and do not produce better health outcomes. In most countries and in developing countries in particular, it has been continuously rising and has gone well beyond the WHO recommendations, without being accompanied by any decline in maternal mortality or morbidity rates [2,5].

Studies measuring postpartum HRQoL show serious physical and emotional problems in more than 50% one year postpartum [6]. Some of these symptoms are still present more than 12 months postpartum. HRQoL in patients after vaginal delivery (VD) was found to be significantly different from HRQoL in women after cesarean section (CS) [7]. With a prevalence of 60-70%, fatigue is the most frequent symptoms after 1 year [6,8,9].

To my knowledge, only a few studies have investigated HRQoL in women after delivery and none has been conducted in Saudi Arabia. We, therefore, undertook this study to evaluate the HRQoL in Saudi women postpartum using the SF-36 questionnaire and to investigate the factors significantly impacting their HRQoL.

Materials and Methods

This was a comparative cross-sectional study conducted over a period of 9 months (January through September 2011) at six main Maternal Child Health centers in Riyadh, Saudi Arabia. 150 (75 with normal delivery, and 75 with caesarean section) Saudi women were approached during their postpartum care and invited to participate in the study. The comparator group consisted of an equal number of healthy volunteers selected from the general population or from the individuals or relatives accompanying women at different centers. This comparison group was included owing to the absence of a data base of population 'norms' for Saudi community. Exclusion criteria for subjects in the comparative group included any major disease that could affect the quality of life. The two groups were matched in terms of sample size, and age. Subjects were interviewed in person by trained nurse at the time of their visits for follow up. Baseline characteristics included sociodemographic data, medical data and the presence of concomitant health conditions.

The Medical Outcome Study Short-Form 36-item survey (SF-36) was self-administered by both study groups to assess the HRQoL [10]. This tool includes eight scales that assess the following general health measures: physical functioning (PF), role limitations due to physical health problems (role-physical, RP), body pain (BP), general health perceptions (GH), vitality (VT), social functioning (SF), role limitations due to emotional problems (role-emotional, RE), and mental health (MH). Subscale scores are calculated according to standard procedures, yielding score values of 0 to 100, where higher scores indicate better HRQoL. The study was approved by the institutional review boards of the participating hospitals. All subjects provided written informed consent.

Results were expressed as frequencies, means and standard deviations. Data analysis was divided into two parts. Initially, SF-36 subscale scores for the participants were compared across the two main study groups using multivariate analysis of variance (MANOVA). Then, the SF-36 subscales of Saudi pregnant women were compared for the two different types of delivery, normal delivery, or caesarean section. MANOVA was also used to investigate the impact of different socio-demographic. The final multivariate model included delivery type plus all other variables that could affect HRQoL. The alpha level for the MANOVA test was set at 0.05. Significant statistics ($p<0.05$) were followed by post-hoc analyses to determine which subscales were associated with between-group differences, and which specific groups showed significantly differences.

SF-36 Subscale	Mean		SD		F-Statistic	P Value
	Case Group	Comparator Group	Case Group	Comparator Group		
Physical Functioning (PF)	45.43	42.15	11.30	12.56	10.37	0.001
Role-Physical (RP)	46.70	45.02	7.96	10.57	4.46	0.035
Body Pain (BP)	47.10	49.80	8.56	9.81	2.67	0.060
General Health (GH)	49.42	49.28	8.39	9.33	0.85	0.035
Vitality (VT)	55.55	53.46	10.68	9.61	4.89	0.027
Social Functioning (SF)	44.04	44.01	9.73	10.86	0.216	0.642
Role-Emotional (RE)	44.78	41.94	10.53	12.74	8.127	0.005
Mental Health (MH)	48.96	45.65	10.95	10.91	12.65	0.000

Table 1: Comparison of SF-36 Subscales between Healthy Volunteers (Comparator group, n=150) & Women who had undergone Delivery (Case group, n=150)

Results

Subject demographics

The age range of patients was 21-40 years, with a mean of 26.5 ± 2.80 years. A majority (95%) were educated to at least secondary school level. Nearly two thirds (67%) have two children, whereas (35%) were employed. The observation period after delivery before completion of the SF-36 ranged from 1-3 months, with a mean of 2.1 ± 0.2 months. The comparator group (n=150) consisted of healthy volunteers matched with cases for age, educational level, number of children, and employment.

Health-related quality of life: SF-36 profile

HRQoL was assessed in the two study groups using the SF-36 questionnaire. As shown in Table 1, delivered women (case group) had significantly higher mean scores in the physical functioning, role-physical, vitality, role-emotional and mental health subscales. The greatest differences were observed in mental health (48.96 vs. 45.65) and role-emotional subscales (44.78 vs. 41.94). There were no significant differences observed in mean scores for general health and social functioning subscales. As regarding body pain, delivered women (case group) reported a significantly lower mean score than controls (Comparator group) (47.10 vs. 49.80)

Table 2 shows a comparative analysis of HRQoL by type of delivery. Women who underwent caesarean section had significantly worse mean scores for all HRQoL domains, except for body pain, while the normal delivery women reported the highest HRQoL scores. The overall test statistic was statistically significant ($p<0.001$) for the eight subscales, indicating that there was a correlation between type of delivery and HRQoL.

The impact of socio-demographic factors on HRQoL of patients is shown in Table 3. Factors such as age, number of children, level of

education and employment significantly affected the HRQoL of women. The Eta Square presented in Table 3 reflects the proportion of total variability attributable to each factor.

Discussion

Although many studies assessed different problems resulting from normal vaginal delivery and caesarean section, but a few studies have focused on women's health related quality of life. Therefore, the findings of this study could contribute to the existing literature and a better understanding of maternal health care outcomes in Saudi Arabia.

What is the most disturbing in the literature on postpartum health is not the presence of widespread morbidity but the profound silence that surrounds this pivotal period in women's lives. Several studies noted that many women (up to 25%) with postpartum health problems did not consult a health professional [2,11].

The current study revealed favourable HRQoL scores in seven of the eight SF-36 subscales for post-delivery Saudi women a few weeks after their delivery, with significantly higher scores for PF, RP, VT, RE, and MH domains compared with the healthy control group (Table 1). Such results may indicate the positive effect of having a baby on the quality of life of Saudi women. These women seem to have a better appreciation of their health, both physically and emotionally, after having a baby than before. The improvement in HRQoL may also be explained by the so-called response shift [12]. According to this theoretical model, the often-seen improvement in HRQoL can be a result of an accommodation process that involves changing internal standards and values. It is conceivable that the improved the quality of life seen in this study is due to such a response shift [2].

One of the most important factors that should be considered by clinicians when selecting the delivery procedure for a given patient is the expected changes in HRQoL after the intervention [2]. This study shows that patients delivered by caesarean section had significantly lower scores for all domains except body pain, whereas those delivered by normal delivery had the highest scores (Table 2).

SF-36 Subscale	Mean		SD		F-Statistic	P Value
	Caesarean Section	Normal Delivery	Caesarean Section	Normal Delivery		
Physical Functioning (PF)	38.92	51.23	13.28	2.72	32.82	0.000
Role-Physical (RP)	43.37	50.24	8.13	5.83	16.95	0.000
Body Pain (BP)	50.06	49.24	9.74	5.83	6.16	0.002
General Health (GH)	47.50	51.68	8.46	6.79	5.01	0.007
Vitality (VT)	51.50	61.76	9.45	10.68	19.40	0.000
Social Functioning (SF)	42.45	48.66	10.30	7.54	9.36	0.000
Role-Emotional (RE)	39.64	50.82	11.31	6.87	26.11	0.000
Mental Health (MH)	44.08	56.01	10.09	9.16	26.23	0.000

Table 2: Comparison of SF-36 Subscales between the Patients who had Undergone one of the two types of delivery: normal (n=75), or caesarean section (n=75)

Factors	F-Statistic	P-Value	Partial Eta squared
Age	2.27	0.02	0.09
Number of Children	3.10	0.003	0.11
Level of Education	2.26	0.02	0.23
Employment	2.57	0.01	0.12

Table 3: MANOVA general F test to identify factors affecting HRQoL of delivered women (n=150)

Normal delivery is the most physiological route of delivery, which may well explain the differences in the HRQoL scores between normal delivery and caesarean section. Patients undergoing an emergency caesarean section experienced both labor and an operative procedure, which may explain the worse HRQoL scores. Patients undergoing an elective caesarean section experienced the effect of an operation. The effects of surgery and anesthesia might be of more influence on the HRQoL scores than normal delivery. From a HRQoL point of view, greater support and care for women who undergo caesarean section seems necessary [9].

Patient's age, number of children, level of education, and employment were the factors with a significant impact on the HRQoL in this study. This was particularly true for age, as all domains were associated with poorer quality of life, followed by number of children and employment, where four domains were found to be significantly affected (Table 3).

This was a small size study and thus the results should not be generalized. It is unlikely to reach to a general conclusion from such a small study. It seems that there is still a need to carry out more robust and larger studies to find out which types of delivery exactly could improve the quality of life in new Saudi mothers.

Being a cross-sectional, retrospective study, it could not evaluate the baseline of HQRoL before pregnancy. This may be rectified in a future study through periodic follow up and regular assessment of Saudi

women quality of life. In addition to, stressful life events were not assessed in this study. It is well known that such events can influence HRQoL and negatively impact individual perception of health status. Finally, Saudi population 'norms' are not available, which limited the calculation of summary composite scores.

Patients' expectations and quality of life are paramount in the current era of clinical practice. Although the study did not show a clear cut benefit in favour of wither methods of delivery that are normal vaginal delivery or caesarean section, the findings suggest that normal vaginal delivery might lead to a better quality of life especially resulting in a superior physical health. Indeed in the absence of medical indications normal vaginal delivery might be better to be considered as the first priority in term pregnancy.

The finding of the present study contributes to our understanding of the relationship between the mode of delivery and HRQoL and the role of parity in this relationship. Hopefully, the findings of the present study may be of help to healthcare policy makers in revising policies to control the caesarean rate in Saudi Arabia. Further longitudinal and prospective studies are warranted to further assess the impact of different factors and types of delivery on the quality of life and to overcome the inherent disadvantages associated with backward studies.

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