



QUALITY OF LIFE AND COPING WITH EPILEPSY: Impact Of Medication Regimen And Therapeutic Drug Monitoring



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INTRODUCTION

- Epilepsy constitutes a group of disorders in which seizure repeatedly occurs.
- Epilepsy can either be symptomatic (possess a recognisable cause) or idiopathic/cryptogenic.
- Besides being chronically ill, epilepsy patients are also confronted with a range of potential adverse drug reactions and psychosocial impacts, hence potentially diminishing their health-related quality of life (HRQoL).

HRQOL

- *"Quality of life in people with epilepsy is an individual's perception of the impact of their condition and its treatment. It reflects the discrepancy between the person's actual and desired physical and psychological health, level of independence and social relationships" (Trimble & Dodson, 1994).*



COPING SKILLS

- Suffering from epilepsy means that patients need to learn to cope with 1) the diagnosis and prognosis; 2) seizures; 3) long-term drug therapies; and 4) psychosocial problems (Anonymous, 2003).
- Therefore, coping occupies the central role in predicting adjustments in epilepsy population (Mirnics, Bekes, Rozsa & Halasz, 2001).
- It is described as a dynamic process which changes over time and is concerned with the thoughts and actions made in response to a stressful situation.

OBJECTIVES OF STUDY

- To examine the impact of medication regimen and therapeutic drug monitoring (TDM) frequency on QoL status and coping strategies employed by epilepsy patients.

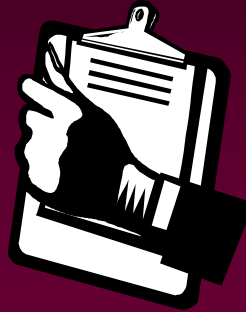


STUDY DESIGN & SAMPLE SELECTION

- A prospective, cross-sectional study.
- Respondents were:
 - *Patients suffering from any type of epilepsy*
 - *At or above 18 years*
 - *Able to read and write in Malay*
- Convenient samples of consenting out-patients were recruited from three government hospitals in the state of Selangor.

INSTRUMENTS

1. Quality of Life in Epilepsy - 30 (QOLIE-30) (modified from Devinsky *et al.*, 1995).
2. Brief COPE Inventory (modified from Carver, 1997).



QOLIE-30

- Consists of a mixture of numerical scales (0-10) and Likert choices.
- All scale scores are transformed linearly into scales of 0-100; higher values indicating better functioning and well-being.
- The Overall QoL Score can be derived by weighting and summing the scale scores.
 - 7 domains (30 items) :
 - ✓ Emotional Well-being (5 items)
 - ✓ Social Functioning (4 items)
 - ✓ Energy/Fatigue (3 items)
 - ✓ Cognitive Functioning (6 items)
 - ✓ Seizure Worry (5 items)
 - ✓ Medication Effects (4 items)
 - ✓ Overall QoL (2 items)
 - ✓ Overall Health (1 item)

BRIEF COPE

- Responses are scored on Likert-type scale (1: not at all – 4: most of the time).
- Each scale total is computed as an unweighted sum of responses to the items.
 - 14 domains (27 items) :

✓ <i>Self-Distraction</i>	<i>Active Coping,</i>
✓ <i>Denial</i>	<i>Substance Use,</i>
✓ <i>Emotional Support</i>	<i>Instrumental Support</i>
✓ <i>Behavioural Disengagement</i>	<i>Venting</i>
✓ <i>Positive Reframing</i>	<i>Planning</i>
✓ <i>Humour</i>	<i>Acceptance</i>
✓ <i>Religion</i>	<i>Self-Blame</i>
✓ <i>Humour (1 item)</i>	

STUDY PROCEDURE

- The study was approved by the Medical Research And Ethics Committee, Ministry of Health Malaysia (KKM/JEPP/02 Jld.3 (69)).
- Suitable respondents were identified by hospital coordinators for questionnaire administration.
- Those agreeing to participate signed a written consent form before proceeding to complete *Personal Information Form* , *QOLIE-30* and *Brief COPE*.
- Help in clarifying the questions or circling the answers were offered whenever needed.

STATISTICAL ANALYSIS

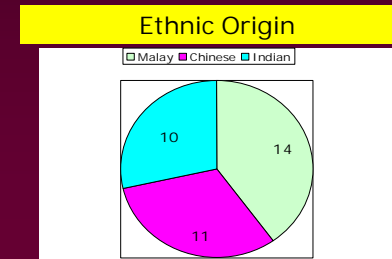
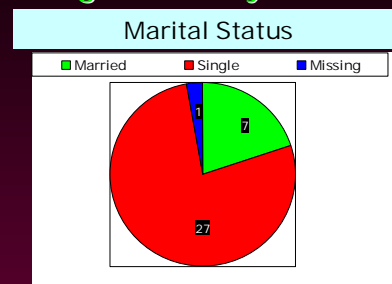


- Data was analysed via SPSS 14.
- Socio-demographic particulars were presented descriptively.
- Non-parametric statistics were used to test for group differences.
- The probability of committing type I error is set at $p < 0.05$.

RESULTS: Participants (n=35)

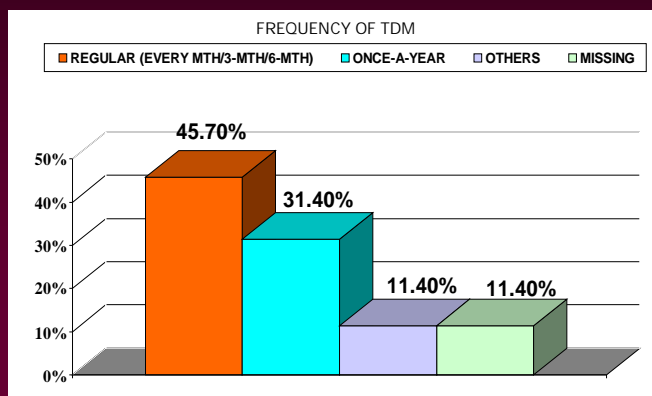
Median age= 23 years; Range=18-64 yrs

Demographic characteristics	Percentage
Gender	
Male	60.0
Female	40.0
Job category	
Professional	11.4
Supportive	17.1
Self-employed	5.7
Housewife	2.9
Student	25.7
Unemployed	37.1



RESULTS: AED Regimen & TDM

- AED regimen: Majority had been prescribed monotherapy (51.4%), 45.7% were placed on polytherapy while 1 person was not on any medication.



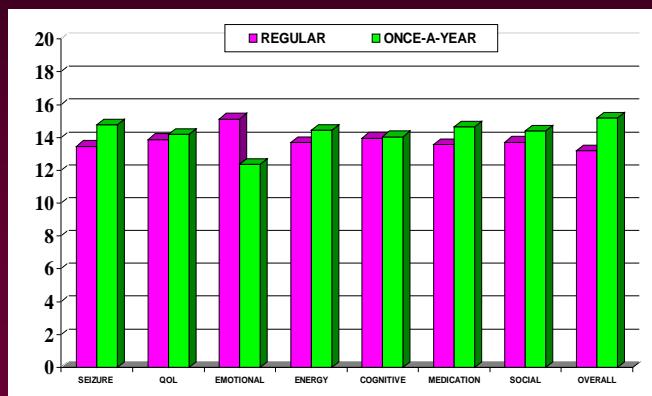
RESULTS: QoL vs. AED Regimen

- Overall, those on different medication regimens did not show any significant QoL differences ($p > 0.05$) although it tended to be worse for polytherapy patients.

Ranks				
UBAT_GRP	N	Mean Rank	Sum of Ranks	
Seiz_Wt_1	18	19.14	344.50	
2.00	16	15.66	250.50	
Total	34			
QoL_Wt_1	18	18.50	333.00	
2.00	16	16.38	262.00	
Total	34			
Emo_Wt_1	18	15.47	278.50	
2.00	16	19.78	316.50	
Total	34			
Ene_Wt_1	18	17.50	315.00	
2.00	16	17.50	280.00	
Total	34			
Cognitive_wt_1	18	18.14	326.50	
2.00	16	16.78	268.50	
Total	34			
Med_Wt_1	18	19.69	354.50	
2.00	16	15.03	240.50	
Total	34			
Soc_Wt_1	18	19.06	343.00	
2.00	16	15.75	252.00	
Total	34			
Overall_1	18	19.00	342.00	
2.00	16	15.81	253.00	
Total	34			

RESULTS: QoL vs. TDM Frequency

- Based on TDM frequency, no significant difference in QoL ($p > 0.05$) was exhibited.
- Despite this, **regular TDM** respondents showed **worse** overall QoL pattern.



RESULTS: COPING vs. AED Regimen

- Coping ways were also not significantly different ($p > 0.05$) with regard to medication regimen.
- Polytherapy respondents were most inclined to employ **Denial**.
- Those on monotherapy preferred **Self Distraction**.

Ranks				
	LBAT_GRP	N	Mean Rank	Sum of Ranks
Self_Distract_1	1.00	18	19.39	349.00
	2.00	16	15.38	246.00
Total		34		
Active_Cope_1	1.00	18	17.36	312.50
	2.00	16	17.66	282.50
Total		34		
Denial_1	1.00	18	15.11	272.00
	2.00	16	20.19	323.00
Total		34		
Substance_1	1.00	18	16.00	288.00
	2.00	16	19.19	307.00
Total		34		
Emo_Supp_1	1.00	18	15.28	275.00
	2.00	16	20.00	320.00
Total		34		
Instrm_Supp_1	1.00	18	15.69	282.50
	2.00	16	19.53	312.50
Total		34		
Behav_Disengmt_1	1.00	18	18.33	330.00
	2.00	16	16.56	265.00
Total		34		
Venting_1	1.00	18	17.14	308.50
	2.00	16	17.91	286.50
Total		34		
Postv_Refrn_1	1.00	18	17.44	314.00
	2.00	16	17.56	281.00
Total		34		
Planning_1	1.00	18	16.50	297.00
	2.00	16	18.63	298.00
Total		34		
Humour_1	1.00	18	16.17	291.00
	2.00	15	18.00	270.00
Total		33		
Acceptance_1	1.00	18	17.64	317.50
	2.00	16	17.34	277.50
Total		34		
Religion_1	1.00	18	16.86	303.50
	2.00	16	18.22	291.50
Total		34		
Self_Blame_1	1.00	18	17.25	310.50
	2.00	16	17.78	284.50
Total		34		

RESULTS: COPING vs. TDM

- However, **regular TDM** respondents significantly employed **Emotional Support** to cope compared to their less regular counterparts ($p = 0.023$).

Ranks				
	Darah_grp	N	Mean Rank	Sum of Ranks
Self_Distract_1	1.00	16	14.25	228.00
	2.00	11	13.64	150.00
	Total	27		
Active_Cope_1	1.00	16	15.00	240.00
	2.00	11	12.55	138.00
	Total	27		
Denial_1	1.00	16	12.53	200.50
	2.00	11	16.14	177.50
	Total	27		
Substance_1	1.00	16	13.41	214.50
	2.00	11	14.86	163.50
	Total	27		
Emo_Supp_1	1.00	16	16.84	269.50
	2.00	11	9.86	108.50
	Total	27		
Instrm_Supp_1	1.00	16	15.97	255.50
	2.00	11	11.14	122.50
	Total	27		
Behav_Disengmt_1	1.00	16	13.84	221.50
	2.00	11	14.23	156.50
	Total	27		

Venting_1	1.00	16	13.88	222.00
	2.00	11	14.18	156.00
	Total	27		
Postv_Refrn_1	1.00	16	16.03	256.50
	2.00	11	11.05	121.50
	Total	27		
Planning_1	1.00	16	14.88	238.00
	2.00	11	12.73	140.00
	Total	27		
Humour_1	1.00	15	13.47	202.00
	2.00	11	13.55	149.00
	Total	26		
Acceptance_1	1.00	16	15.00	240.00
	2.00	11	12.55	138.00
	Total	27		
Religion_1	1.00	16	14.75	236.00
	2.00	11	12.91	142.00
	Total	27		
Self_Blame_1	1.00	16	11.69	187.00
	2.00	11	17.36	191.00
	Total	27		

DISCUSSION (I)

- Results on QoL were in line with other findings supporting better outcomes for epilepsy monotherapy regimen:
- *A group of Hungarian patients on monotherapy had reported better QoL profile compared to those treated with more than one medication (Lam et al., 2001).*
 - *Another cohort of Sabah epilepsy patients on single AED also exhibited higher scores for the majority of QoL aspects examined via QOLIE-31 (Lua et al., 2007).*
- It further remains to be explored as to why regular TDM seemed to negatively affect QoL.

DISCUSSION (II)

- The relationship between coping mechanisms and AED regimen appeared complex and require in-depth study.
- In terms of coping and the frequency of TDM, patients probably need to feel emotionally more secure with regular TDM – *Emotional Support* has been shown to be positively associated with *Overall QoL* (Lua *et al.*, 2007).
- The actual reason(s) underlying both these phenomena can only be revealed with further explorations.

CONCLUSION

- Findings provided evidence on the influence of medication regimen and TDM in determining QoL and coping mechanisms of the epilepsy cohort.
- Nonetheless the small sample size could have hindered a more significant finding and disallowed an overall generalisation.
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- Further in-depth studies are warranted.

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ACKNOWLEDGEMENT

- Institute of Research, Development & Commercialisation (IRDC), Universiti Teknologi MARA (UiTM), Shah Alam, Malaysia.
- Prof. Dr. Abu Bakar Abd. Majeed, Dean, Faculty of Pharmacy, UiTM, Shah Alam, Malaysia.
- En. Mohd. Shahezwan Abd. Wahab
- Cik Suryani Ibrahim
- En. Azman Kamal
- All parties who had either been directly or indirectly involved in this project.