Psychometric evaluation of a new individualised condition-specific quality of life questionnaire for people with HIV (HIVDQoL)

Jacquelyn Romaine [a], Miranda Murray [b] & Clare Bradley [a, c]

[a] Health Psychology Research Unit, Royal Holloway, University of London, UK, [b] ViiV Healthcare Ltd, 980 Great West Road, Brentford, London, TW8 9GS UK. [c] Health Psychology Research Ltd, Royal Holloway University of London, Egham, Surrey, UK.

BACKGROUND

Given recent developments in HIV treatment it is important to obtain, in addition to health status/symptoms, a more holistic view of the impact of HIV on quality of life (QoL). The HIV-Dependent Quality of Life (HIVDQoL) questionnaire is an individualised condition-specific QoL questionnaire based on a template developed by Clare Bradley for the ADDQoL[1] (Audit of Diabetes-Dependent QoL) and –DQoL measures for other conditions [e.g.2]. Qualitative work to select and design items for the HIVDQoL is reported elsewhere [3]. This poster reports on the psychometric evaluation of the HIVDQoL.

METHOD

The study employed a survey design, with participants (Table 1) recruited from the UK and the US via the internet by Opinion Health. Participants chose to complete and return the questionnaire individually (via post) or with a researcher (via telephone).

Table 1: Participant Details

Country	Age					Gender		Years since diagnosis				Viral Load		
	N	Mean	SD	Min	Max	Male	Female	Mean	SD	Min	Max	Non-detectable	Detectable	Unsure
UK	128	47	9.10	25	72	99	29	12	8.30	1	30	116	9	3
US	127	51	11.68	25	78	104	20	19	9.40	0	36	116	9	2
Total	255	49	10.64	25	78	203	49	15	9.43	0	36	232	18	5

The HIVDQoL included two overview items which measure generic 'present QoL' and 'HIV-specific QoL' (see Figure 2 a and b for summary of results) and 26 domain-specific items (see Figure 3). As shown in Figure 1 each of the 26 items has two rating scales, one measuring impact and the other measuring importance of the domain for QoL.

1 (a)	**If I had *never had* HIV, I would enjoy my leisure activities:**				
	-3	-2	-1	0	1
	very much more	**much more**	**a little more**	**the same**	**less**
(b)	**My leisure activities are:**				
	3	2	1	0	
	very important	**important**	**somewhat important**	**not at all important**	

Figure 1: Example of HIVDQoL domain-specific item: scoring included for demonstration only

These impact and importance scores are multiplied to give a Weighted Impact (WI) score. In this way the HIVDQoL is sensitive to the fact that any given aspect of life may have different significance to different individuals and as such is likely to have varying impact on QoL and that the importance of a particular aspect of life may change over time even for the same individual. Additionally, a non-applicable option is provided for items that may not be applicable to everyone (e.g. working life). WI scores for applicable items are summed and divided by the number of applicable items to produce an average weighted impact score (AWI). The HIVDoL thereby provides a highly personalised assessment of the impact of HIV on an individual's QoL. The underlying structure of HIVDQoL was explored using Exploratory Factor Analysis (EFA). Reliability was assessed using Cronbach's alpha coefficient of internal consistency.

RESULTS

HIVDQoL Overview Items: Descriptive Statistics

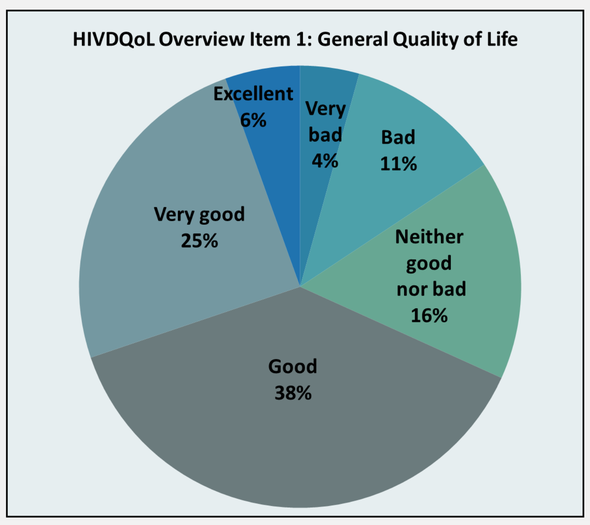

Figure 2a: Results summary (raw data) Overview Item 1:
In general, my present quality of life is :
Note: 'extremely bad' response option was not used by respondents

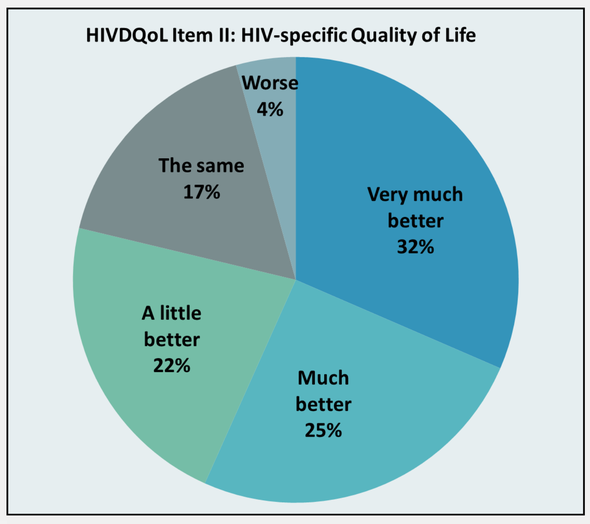

Figure 2b: Results summary (raw data) Overview Item II:
If I had *never had* HIV, my quality of life would be:

REFERENCES

1. Bradley. C., Todd. C., Gorton ,T., Symonds, E., Martin, A. & Plowright, R. (1999).The development of an individualized questionnaire measure of perceived impact of diabetes on QoL: the ADDQoL. *Quality of Life Research,* 8: 79-91.
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3. Romaine ,J., Bayfield ,J., Plowright, R., Murray ,M.& Bradley, C. (2015).Design of the HIV Dependent Quality of Life (HIVDQoL) questionnaire and HIV Symptom Rating Questionnaire (HIVSRQ). *Quality of Life Research,* 24 (suppl 1) 162: Abstract #3035.
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ACKNOWLEDGEMENTS

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RESULTS

HIV-specific Quality of Life Domains: Exploratory Factor Analysis

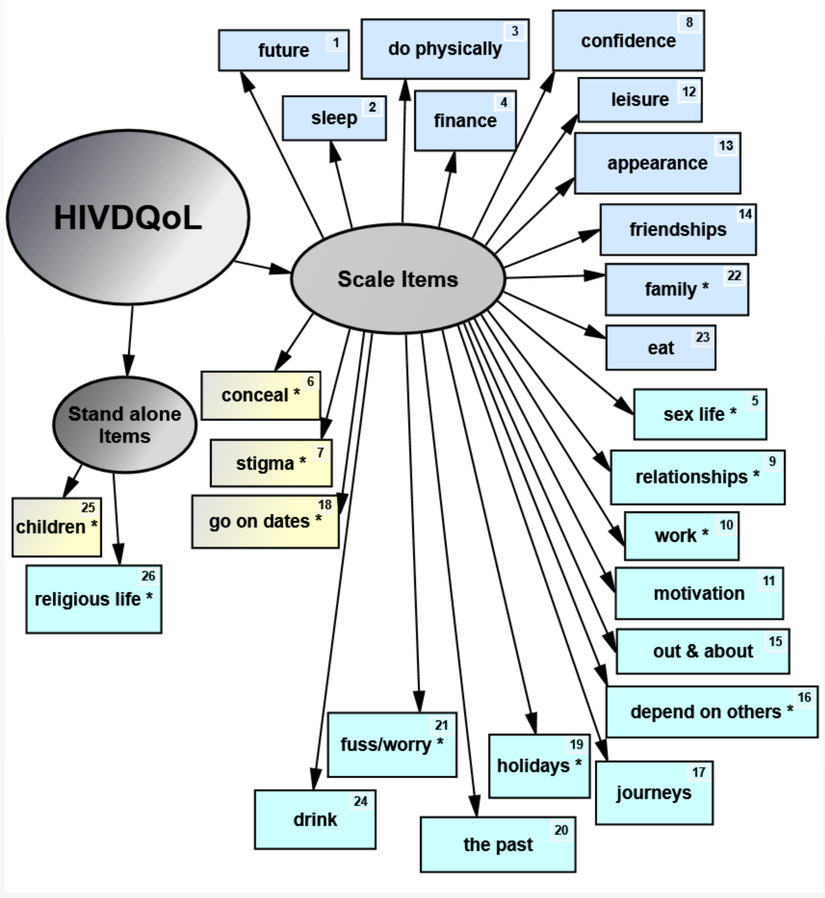

Figure 3: Diagram of domain items included in the HIVDQoL, including item history and ranking using current data
Blue indicates an existing item taken from previous –DQoL measures, pale green indicates a modified existing item, yellow indicates a new item. Numbers identify item rank by impact scores e.g. 1 indicates greatest negative impact, & 26 indicates least negative impact. * indicates the item has a non-applicable option.

Questionnaire structure was examined using principal components analyses. Eigenvalues were inspected, however components were considered for retention based primarily on Parallel Analysis and examination of the Scree Plot. Once components had been identified a fixed factor EFA using Principal Axis Factoring (PAF: factor extraction method recommended for non-normal data) with a Direct Oblimin rotation was used to reveal the factor structure.

Examination of the factor loadings was based on identifying the 'cleanest' factor structure: item loadings above 0.40, no/few cross-loadings (> 0.32 on one or more factors), and no factors with fewer than three items. Analysis revealed a strong and reliable one-factor structure which included 24 of the 26 items (Figure 3). The 24 items explained 40 % of the variance in QoL scores. The factor matrix (Table 2) shows the lowest item loaded at 0.442 and there are 7 excellent items, 5 very good items, 6 good items, and 5 fair items (Comrey & Lee (1992)[4].

Table 2: HIVDQoL Forced-One EFA Factor Matrix & Reliability

Item N	Quality of Life Domain	Factor Loading	Alpha if Item Deleted
6	Do physically	0.816	0.934
14	Motivation	0.773	0.934
17	Feel about the future	0.754	0.934
1	Leisure	0.741	0.935
4	Out & about	0.736	0.935
3	Holiday	0.725	0.935
8	Friendships	0.724	0.935
5	Journeys	0.684	0.936
13	Self-confidence	0.669	0.935
18	Finance	0.648	0.936
2	Work	0.646	0.936
19	Depend on others	0.634	0.936
26	Sleep	0.608	0.937
7	Family life	0.603	0.937
12	Physical appearance	0.597	0.937
10	Close relationships	0.596	0.937
21	Freedom to eat	0.591	0.937
22	Freedom to drink	0.553	0.937
24	Feelings about the past	0.544	0.937
11	Sex life	0.535	0.937
16	Conceal	0.469	0.938
9	Go on dates	0.457	0.938
15	Stigma	0.455	0.939
20	Others fuss & worry	0.442	0.939
Number of Participants			223
Number of Items in Scale			24
Variance			40.164
Reliability			0.939

CONCLUSIONS

The general quality of life overview item produced close to normally distributed scores around a modal response of 'good'. The HIV-specific quality of life overview item showed that most respondents felt that their quality of life would be very much or much improved if they had never had HIV. The HIVDQoL scale is here shown to have sound psychometric properties including excellent reliability. It is suitable for use in clinical trials, other research and in routine clinical practice to evaluate the impact of HIV and its treatment on quality of life with a view to identifying treatments that optimise quality of life.

ENQUIRIES

Corresponding author: Professor Clare Bradley, email: c.bradley@rhul.ac.uk. Health Psychology Research Unit, Orchard Building, Royal Holloway, University of London, Egham, Surrey, TW20 0EX, UK.

Information on these and other Questionnaires: please visit www.healthpsychologyresearch.com