

Investigating the predictors of lifestyle satisfaction among younger adults with chronic aphasia

JACQUELINE J. HINCKLEY

University of Michigan, Ann Arbor, MI, USA

Abstract

Perceptions of lifestyle satisfaction are an important component of quality of life and handicap measurements. Thirty-one adults with aphasia completed a questionnaire in which they rated their lifestyle satisfaction and reported other demographic, health, communication, social contact and vocational information. Forty-six per cent of the respondents reported general lifestyle satisfaction. Logistic regressions were estimated to differentiate the effects of the predictor variables on the likelihood of a positive lifestyle-satisfaction rating. A negative effect of time post-onset was demonstrated. The results are discussed in the context of previous reports of lifestyle satisfaction in the general stroke population.

Introduction

The measurement of subjective well-being, often part of a comprehensive quality of life measure, has typically consisted of two main components: an affective evaluation (both positive and negative affect), and a cognitive-judgemental task. It is the latter that is measured by single or multiple item scales of life satisfaction. Life satisfaction has been described by Shin and Johnson (1978) as 'a global assessment of a person's quality of life according to his/her own criteria'. In order to report a life satisfaction rating, an individual must evaluate their current state with an appropriate standard of their own determination (Diener *et al.* 1985). Indeed, the hallmark of the research in the area of life satisfaction is an emphasis on the internal, perceptual nature of the individual's rating, rather than a focus on criteria set externally by the researcher.

Psychosocial well-being has a significant impact on the ultimate function and lifestyle of adults who have gone through rehabilitation. Feelings of stigmatization affect functional improvement during stroke rehabilitation (Hyman 1971), and depression has a negative impact on long-term functional outcome (Parikh *et al.* 1990, Sinyor *et al.* 1986). Lifestyle satisfaction ratings, taken at the start of rehabilitation, correspond with return to work among cardiac rehabilitation patients (Myrtek 1987). In spite of the lack of influence of various medical factors, patients reporting high life satisfaction were more likely to return to work after

Address correspondence to: Jacqueline J. Hinckley, Communicative Disorders Clinic, University of Michigan, 1111 E. Catherine St., Ann Arbor, MI 48109-2054, USA.

rehabilitation than those who reported low life satisfaction. This line of research suggests that life satisfaction is one measure of an individual's psychosocial status that will relate to functional ability, vocational status and, potentially, mental health.

The goal of rehabilitation is to return an individual to their highest possible level of functioning relative to appropriate roles for their age, occupation, and gender. Measuring quality of life and wellness are features of outcomes associated with the WHO model of rehabilitation (WHO 1980). Maximizing function increases the overall productivity of the individual and should decrease overall cost of services to the individual over the long term. Consequently, investigating the correlates of successful independence and vocational rehabilitation should be high priorities for rehabilitation professionals.

Global life satisfaction ratings have been investigated in various areas of health management and health behaviour. Two previous studies measured global perceptions of lifestyle satisfaction among stroke survivors. Viitanen *et al.* (1988) used a six point scale on which 62 stroke survivors who were 4–6 years post-onset rated their perceived overall life satisfaction. Only 56% of the stroke survivors reported being satisfied with their lifestyle, compared to 86% of healthy age-matched controls. They also reported a primary negative impact of persisting motor impairment on life satisfaction ratings. These authors suggest that level of well-being is a consequence of the adequacy of the coping process. Some stroke survivors may be unable to maintain or reorient to activities or interests that provide them with high levels of satisfaction. 'Hence, even among unimpaired and non-disabled long-term stroke survivors, many are permanently handicapped' (Viitanen *et al.* 1988, p. 23).

Astrom *et al.* (1992) used a three point scale (good, fair, poor) on which 50 stroke patients surviving 3 years after stroke rated their global life satisfaction. In this study, 52% of the stroke survivors reported positive life satisfaction, in contrast to 95% of a national control sample. The authors suggested that patients reporting dissatisfaction had a higher frequency of major depression than the rest of the stroke group, and that early intervention is important to prevent deterioration and depression years after a stroke. Astrom *et al.*'s (1992) study sample is important because nine stroke patients were not included in the study due to severe aphasia; however, it is unknown how many other subjects with aphasia were actually included. Neither of these two studies describes the communication characteristics of the subject samples.

The importance of quality of life issues in aphasia has long been recognized clinically, but has more recently become an area for active research (Sarno 1997). There are several tools available broadly for the comprehensive measurement of quality of life among stroke survivors, or for assessing component parts of quality of life, such as lifestyle satisfaction (for a review, see de Haan *et al.* 1993). Many of these measures are lengthy or do not specifically address communication issues and the impact of communication impairment on life functions. Consequently, various standardized and non-standardized instruments have been used in the current aphasia research on quality of life, and there is a need for a quality of life instrument that is sensitive to the needs and issues of adults with aphasia (Records and Baldwin 1996).

Recent investigations into quality of life changes associated with speech/language treatment programmes have demonstrated that programme participation

tends to have a positive impact on perceived quality of life (Hoen *et al.* 1997, Sarno 1997, Wahrborg *et al.* 1997). These studies have used various measures of quality of life as an outcome of traditional and non-traditional therapeutic programmes. The use of these measures, in addition to other assessments of behaviour and functioning, is critical to a holistic understanding of chronic aphasia.

It is also important to investigate other factors that might influence perceived lifestyle satisfaction among adults living with chronic aphasia, long after discharge from treatment. For example, social support is a predictor of functional stroke recovery during the first 6 months (Glass and Maddox 1992). Health and activity level are also factors that may effect lifestyle satisfaction over the long term. Consequently, the present study was conceptualized to determine the relative contributions of various factors on the global lifestyle satisfaction ratings of a group of adults with chronic aphasia who had been discharged from speech/language therapy for at least 6 months.

The differential effects of demographic data, continued rehabilitation services, current vocational status, perceived health, persisting hemiparesis, or frequency of social contacts on perceived lifestyle satisfaction were investigated. The study addresses the question of whether patient characteristics typically observed in a clinical environment can predict longer term lifestyle satisfaction. A global rating of lifestyle satisfaction provided the opportunity to compare satisfaction results with previous research using this type of rating among stroke survivors.

Methods

A questionnaire designed to elicit demographic information, life satisfaction ratings, amount and type of professional services, home practice patterns, and current activities including vocational status was mailed to 145 adults with aphasia who had been enrolled consecutively in an out-patient clinic and who had been discharged from services for at least 6 months. The variables and their sources are listed in table 1.

The demographic portion of the questionnaire collected information about the respondent's age, type of injury, time post-onset, hemiparesis, handedness, marital status, children, educational background, and previous occupation. Type and severity of aphasia were culled from the respondent's clinical records. For the purpose of this analysis, aphasia type was simply classified as fluent or non-fluent and severity ratings included mild, moderate, and severe, based on the diagnosis given in the clinical report.

Each respondent was asked to rate how they feel about their current activities and lifestyle. A four point scale without a neutral response option was provided and included 'very happy', 'content', 'dissatisfied', and 'discouraged/depressed'. These lifestyle satisfaction ratings were used as an outcome measure.

Respondents were also asked to provide a self-rating of their overall health, ranging from 'excellent' (no health problems at all) to 'average' (occasional colds/flu and other routine health problems), to 'poor' (numerous illnesses or more than one hospitalization) on a five point scale. The subjects were not asked to list their current medications and data regarding anti-depressants or other medications that might affect mood were not available. Type and frequency of professional services since their last contact with the clinic were also noted. Respondents also indicated the frequency of home practice and use of a computer

Table 1. Variables and their sources used for data analysis

Variable		Source
Demographics		
Age	Years	Q/CR
Time post-onset	Months	Q/CR
Aetiology	Stroke	CR
	Head injury	
	Neoplasm	
Handedness	R/L	Q/CR
Marital status	Single, married, divorced, widowed	Q/CR
Children	Number	Q/CR
Education	Years after high school	Q/CR
Lifestyle ratings		
Overall, how would you rate your current lifestyle?	Happy, content, dissatisfied, discouraged	Q
Health and communication		
General health self-rating	Excellent (no health problems)	Q
	Good (minimal health problems)	
	Average (occasional routine health problems)	
	Below average (one serious illness or hospitalization)	
	Poor (more than one hospitalization)	
Aphasia type	Non-fluent	CR
	Fluent	
Aphasia severity	Mild, moderate, severe	CR
Hemiparesis	Persistence	Q/CR
Continued services		
Type of professional contacts	PT, OT, Psychology, Vocational	Q
Frequency of professional contacts	Number of times per week	Q
Frequency of home practice	Number of times per week	Q
Frequency of home computer use	Number of times per week	Q
Productivity		
Current occupation	Gainful employment	Q
	Volunteer work	
	Work in the home	
	Vocational training	
Daily activities	Hours per week	Q
	Walking	
	Socializing	
	Watching TV	
	Other	
Social contact – number of times per week	Family	Q
	Friends	
	Strangers	

Q = questionnaire; CR = chart review.

for speech/language practice. Vocational activity response options included gainful employment, volunteer work, work in the home, or vocational training, and number of hours per week that the respondent engaged in any of these. A list of other potential daily activities was also provided and the respondents were asked to indicate all the activities in which they engaged. Social contact was measured by asking respondents if they had regular contact with three categories of potential

contacts: family members (besides spouse), friends, and strangers and each respondent indicated the number of times per week contact occurred for each of the three categories.

Because the questionnaire was sent to subjects' homes in a variety of geographic areas, it was expected that some adults with aphasia would require and ask for assistance in their home environment to complete the survey. Subjects were asked to indicate on the survey whether they had any type of assistance completing the form, for example, having the questions read to them, or assistance in writing out answers, by ticking a box on the questionnaire.

Results

Thirty-one adults with aphasia responded, yielding a response rate of 21%. A 50% response rate for normal respondents is considered typical and sufficient for analysis (Rea and Parker 1992). A lower than typical response rate for adults with aphasia completing the linguistically loaded task of filling out a questionnaire is to be expected, since reading and writing a multiple page document is challenging for many individuals with aphasia. It may be that some non-respondents lacked the personal support required to complete the questionnaire, but it was difficult to obtain reliable information by way of follow-up from the non-responders to determine this. The linguistic, social, and psychological factors that contribute to the successful completion of the questionnaire could not be controlled and therefore a certain degree of sampling bias should be taken into consideration, due to the nature of the survey design.

All of the returned questionnaires were used in subsequent analyses. Fifty-eight per cent of the subjects (18/31) ticked the box indicating that they had had assistance completing the survey. All of the subjects with severe aphasia indicated assistance and some of the subjects with moderate aphasia were assisted. Subjects were not asked to indicate the nature of the assistance.

Due to the number of respondents, lifestyle satisfaction self-ratings were collapsed into two groups, rather than separating the four possible response categories. Fourteen (45%) of the respondents provided a positive lifestyle rating (very happy or content) and 17 (54%) reported a negative lifestyle rating (dissatisfied or discouraged).

A summary of the respondents' demographic information is provided in table 2. There were 19 men and 12 women with an average age of 50 years (range 23–69, SD 14). These subjects had chronic aphasia due to thromboembolic or haemorrhagic stroke (87%), head injury (10%), or neoplasm (3%), all affecting the left cerebral hemisphere. The average time post-onset at the time of questionnaire completion was 46 months (range 11–108 months, SD 23.5 months).

Data regarding the health and communication status of the subjects are summarized in table 3. The respondents were in generally good health. Follow-up telephone contacts were performed to ensure that those subjects reporting serious illness were free of further neurologic impairment. Sixty-seven per cent had displayed a non-fluent aphasia at the time of their last evaluation in the clinic. Only one subject reported being involved in a therapy programme at the time of questionnaire completion. It was therefore not possible to determine whether severity of aphasia had changed since the time of their clinic discharge. Nearly all of the subjects with non-fluent aphasia reported a persisting right hemiparesis.

Table 2. Summary of demographic information ($n = 31$)

Marital status	
Married	60%
Single	33%
Divorced	7%
Children	
Yes	63%
Educational background	
High school diploma	17%
Some college	37%
4 year degree	13%
Advanced degree	30%

Table 3. Summary of health and communication variables ($n = 31$)

Aphasia type	
Non-fluent	67%
Aphasia severity	
Mild	23%
Moderate	55%
Severe	22%
Hemiparesis	
Present	60%
Pre-morbid handedness	
Right	97%
Health self-ratings	
Excellent	27%
Good	37%
Average	23%
Below average	6%
Poor	3%

Two composite variables were created. A productivity variable was created by combining scores about type of work (gainful, volunteer, training, in the home) with scores associated with frequency of social contact in the three categories (family, friends, and strangers). A second composite variable, continued treatment, combined the scores on questions about continued speech/language therapy, other professional services (e.g. physical, occupational, or psychological therapies), frequency of home practice, and frequency of computer practice.

A logistic regression model was chosen as the appropriate statistical analysis. Logistic regression gives the odds of achieving a positive lifestyle satisfaction rating based on each of the variables. Three constellations of variables were identified *a priori* based on conceptual groupings. The first model to be estimated included the demographic variables of age, health self-rating, marital status, and time post-onset. The second model grouped variables that described the nature of the disability, including aphasia type, aphasia severity, and hemiparesis. The third model estimated the effects of the two composite variables, productivity and continued treatment.

Table 4. Logistic regression analysis of lifestyle satisfaction ratings ($n = 31$) for Model 1

Variable	<i>B</i>	SE <i>B</i>	β
Age	0.020	0.038	1.020
Health rating	-0.591	0.427	0.553
Marital status	-1.380	0.915	0.251
Time post-onset	-0.045	0.023	0.955*

* $p < 0.05$.**Table 5. Logistic regression analysis of lifestyle satisfaction ratings ($n = 31$) for Model 2**

Variable	<i>B</i>	SE <i>B</i>	β
Time post-onset	-0.039	0.021	0.961*
Hemiparesis	0.623	0.487	1.864
Aphasia type	-0.382	0.708	0.682
Aphasia severity	0.875	2.035	0.710

* $p < 0.05$.**Table 6. Logistic regression analysis of lifestyle satisfaction ratings ($n = 31$) for Model 3**

Variable	<i>B</i>	SE <i>B</i>	β
Time post-onset	-0.053	0.025	0.947*
Continued treatment	1.72	2.24	5.593
Productivity	-1.05	0.586	0.346

* $p < 0.05$.

Model 1 estimated the effects of three demographic variables: age, time post-onset, and marital status, as well as overall health self-rating, on the likelihood of achieving a positive lifestyle satisfaction rating; results for this model are presented in table 4. The estimation for time post-onset had a significant negative impact on the likelihood of a positive life-satisfaction rating. Consequently, this variable was entered into the second model estimation as well.

The second model included time post-onset, and estimated the effects of hemiparesis, aphasia type, and aphasia severity. None of these additional variables contributed significantly to the likelihood of achieving a positive lifestyle-satisfaction rating. Time post-onset remained a significant factor (see table 5). Model 3 maintained time post-onset as a predictor due to its level of significance in the other two models and estimated the effects of the two composite variables, productivity and continued treatment. None of the other predictors, besides time post-onset, contributed significantly to this model (see table 6).

Importantly, the sign for the estimation of time post-onset was negative across all three models. This suggests that as time post-onset increases, the probability of achieving a positive lifestyle-satisfaction rating decreases, despite a number of potentially complicating influences.

Discussion

The questionnaire methodology used in this study resulted in a sample that was generally young (mean age 50 years) and healthy. This sample of adults with aphasia reported a slightly lower level of lifestyle satisfaction (46%) than previous reports of lifestyle satisfaction for stroke survivors overall (52% and 58%). Since previous reports have not separated aphasic subjects from stroke survivors with other residual impairments, it could be that the chronic communication impairment has a more detrimental effect on lifestyle than other types of disabilities due to stroke, and future studies will need to investigate this matter systematically to determine whether there is a significant difference between lifestyle ratings of aphasic versus non-aphasic subjects. The presence of a substantial number of right hemispheric stroke patients in previous reports may have resulted in a masking of the negative lifestyle-satisfaction ratings, since right hemispheric patients may be less aware or less able to make the kind of cognitive judgement required by a lifestyle satisfaction rating. Future work should fully describe locus of lesion as well as cognitive and communicative abilities that might affect ability and perception of lifestyle satisfaction ratings.

The present study's conclusions are also limited by the survey design. A sampling bias may be present, in that subjects with greater social support may have been more likely to respond. If that is the case, then the relatively negative lifestyle satisfaction ratings in this sample may be of even greater clinical concern. However, before arriving at any conclusions in this regard, replication of this result should be attempted with an improved research design. An interview methodology is recommended and could increase the distribution of characteristics and the representativeness of the respondent sample. Interviews would also provide a means to collect information about presence of depression, by way of a depression scale, and data about anti-depressant medication. Audio- or videotaped interviews would also provide a data source more amenable to determination of test-retest or inter-judge reliability.

In contrast to findings reported for the general stroke population, hemiparesis did not predict lifestyle satisfaction in this subject sample. It is possible that the communication impairment has a stronger effect than persisting motor impairment, and hemiparesis does not differentiate within a sample of adults with aphasia.

The respondents to this questionnaire were relatively young, well educated, and were all gainfully employed at the time of the onset of aphasia. It is unknown what impact, if any, the loss of vocational status had on perceived lifestyle satisfaction since there was not a comparison group of subjects who had been retired at the time of onset. None of the subjects in the current study returned fully to their previous vocational status, although 26% of these subjects returned to a different level of employment.

The finding that lengthier time post-onset increases the likelihood of dissatisfaction is consistent with other reports of decreased adaptation and increased frequency of depression among adults with aphasia and other stroke survivors. Wahrborg (1991) suggests that this may be due to a spiralling deterioration that includes inadequate rehabilitation, dysfunctional coping mechanisms, and an emphasis on overt measures of the handicap. Indeed, reports of lifestyle satisfaction in other health domains suggest that quantitative measures of behaviours have generally not been related to satisfaction, but some qualitative measures, such as

the perceived nature of social contacts or self-esteem, have been shown to predict life satisfaction and perceived wellness (Joussen and Pascher 1984, Kammann 1983, Mathieson *et al.* 1991, Myrtek 1987, O'Bryant 1991). This suggests that qualitative measures may be a future area to explore as predictors of life satisfaction outcomes.

A potentially interesting theoretical framework in which to pursue questions about life satisfaction, age, and onset of aphasia is a model of adult development described by Baltes (1997) and Baltes *et al.* (1998). One component of this model depicts the relationship between gains and losses throughout the life span and represents individuals' expectations for loss as increasing with age. This model may set a framework for measuring the difference between expectation and perceived current state, which is the essence of lifestyle satisfaction measurement. The model predicts that older adults tend to expect more losses than gains, according to their life script. This would suggest that older adults with aphasia might adapt more readily or more positively to the losses associated with stroke and aphasia than younger adults. Baltes' model also represents the efficacy of culture and social support as decreasing with age. Among adults with aphasia, we could predict that younger adults might have greater social access than older adults. The present data are not sufficient for interpretation within this theoretical context due to the respondents' ages (all younger), but future research might well benefit from an application and test of these predictions.

Finally, pursuit of information about long-term satisfaction and wellness may ultimately inform the timing and nature of our clinical efforts for adults with chronic aphasia. If replication supports the current study's conclusions, then clinical actions to address the long-term deterioration of life satisfaction should begin with comprehensive and active follow-up programmes at the time of hospital discharge. Simple postcards or phone messages could be investigated as a means by which adults with aphasia are provided with ongoing access to rehabilitation information and resources. Clinical services such as aphasia community groups, as described by the National Aphasia Association, or aphasia group meetings (Beeson and Holland 1995) are places where adults with aphasia can obtain ongoing social support and education. Annual conference meetings of a large number of adults with aphasia and their families, as described by Hinckley *et al.* (1995), are another potential source of long-term support. We will need to determine whether any of these efforts have any impact on the apparent long-term decline in the lifestyle satisfaction of adults with aphasia.

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