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Research Article

Exercise Preferences Are Different after Stroke

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Objective. To explore exercise preferences in stroke survivors and controls. *Methods*. A novel scale—the Exercise Preference Questionnaire—was developed for this study. This questionnaire, together with established assessments of physical activities, mood, and quality of life, was completed in a single assessment session. *Results*. Twenty-three adult stroke survivors (mean age 63, 65% male) and 41 healthy controls (mean age 61, 66% male) participated. The groups differed on 4 of the 5 *a priori* exercise preference factors: relative to controls, stroke survivors preferred exercise to be more structured, in a group, at a gym or fitness centre, and for exercises to be demonstrated. Factor analysis yielded 6 data-driven factors, and these factors also differentiated stroke and control groups. There was evidence that group differences were diminished when activity levels and psychological wellbeing were accounted for. Individual variability in exercise preferences and reported barriers to exercise are outlined. *Conclusion*. Stroke survivors have different exercise preferences, and a better understanding of these preferences can be used to inform rehabilitation programs and increase adherence.

1. Introduction

Stroke is a leading cause of disability, affecting around 60,000 people every year in Australia [1]. Exercise, defined as planned and repetitive bodily movements with the aim to improve or maintain physical fitness and mobility [2], is essential to poststroke recovery. Exercise not only assists people to regain function lost after stroke through repetition of specific actions, it is also believed to help prevent further stroke. Yet despite the importance of exercise, many stroke survivors are not very physically active [3]. Lack of adherence to physical activity programs is a common problem across different populations, with many people withdrawing from exercise before any personal health benefits are realized [4]. Attrition rates of 50% in the first six months of commencing an exercise program have been reported [5]. Identifying a way to increase exercise participation and adherence would have major personal and health system benefits [4].

Understanding and incorporating an individual's exercise preferences into a program can help to increase motivation to exercise [6]. Exercise preferences reported by healthy older adults include: having a good quality instructor, being located close to home, low costs, participating with others of similar age, including music, and having a friend to exercise with [6]. Walking and exercising at a fitness class were the most preferred methods while those who wished to exercise at home were happier to exercise more often [6]. These preferences were different to those expressed by breast cancer survivors, who preferred to exercise at home, alone and in a flexible program [7, 8]. Exercise preferences for stroke survivors have not been examined previously. As exercise preferences have been shown to vary across different health and life situations [9], it is important to specifically examine the preferences of stroke survivors to determine the most effective exercise program for this population.

Long-term engagement of stroke survivors in exercise programs may reduce further stroke and enhance recovery [3]. Better understanding of the exercise preferences of stroke survivors could help improve their participation in exercise. The aim of this study was to explore exercise preferences in stroke survivors and age- and sex-matched community dwelling controls.

The lack of previous research in this area made it difficult to formulate hypotheses. We predicted that stroke patients

will have different exercise preferences to controls, given the wide range of physical and emotional impacts of stroke. For the same reason, we hypothesised that variability in exercise preferences will be higher within the stroke group than the control group. Finally, we hypothesised that exercise preferences will be associated with current activity levels, quality of life, and psychological wellbeing.

2. Methods

2.1. Participants. Stroke survivors and healthy older people living in the community were eligible for recruitment, providing they were at least 18 years old and were able to communicate in English. Stroke participants must have had a completed stroke (not TIA) not less than 6 months and not more than 4 years previously. Participants for the stroke group were recruited through the Stroke Association of Victoria and affiliated Stroke Support Groups and the National Stroke Research Institute register of people interested in participating in further research. Controls included partners of participating stroke survivors, people from community groups across Victoria, and colleagues' family members and friends.

2.2. Procedure. Potential participants were contacted by the researcher (G. Banks) or a stroke network coordinator and briefed about the study. All participants gave written informed consent prior to participation. Procedure was the same for stroke survivors and controls. The assessment tools were completed in 1 of 3 ways: (a) mailed out to the participant with attached instructions, (b) completed by the participant in the presence of the researcher, or (c) read to the participant with their verbal responses recorded verbatim by the researcher. Participants were instructed to fill in the questionnaires as honestly and accurately as possible and assistance was only given to clarify questions. All study procedures and assessment tools were approved by the La Trobe University Faculty of Health Sciences Ethics Committee.

2.3. Assessment Tools. The primary outcome for this study was exercise preference, as indicated by the Exercise Preference Questionnaire (EPQ). Secondary outcome measures, detailed below, included the Human Activity Profile (HAP), the Assessment of Quality of Life (AQoL) scale, and the Irritability, Depression, and Anxiety (IDA) scale. Background information on age, gender, marital status, living arrangements, and type of stroke and side affected (if applicable) was also collected.

2.4. Exercise Preference Questionnaire (EPQ). The questionnaires used to probe exercise preference in older adults [6], breast cancer [7, 8], and cardiac rehabilitation [9] were considered for this study, but they did not adequately capture the experience or challenges associated with stroke. The Exercise Preference Questionnaire (EPQ) was therefore created specifically for this study in consultation with a statistician and an expert clinician (see Appendix). It consisted of 33 questions divided into three sections designed to capture exercise preferences and current exercise habits. Section 1 was comprised of three questions to identify current exercise frequency and mode. Section 2 had 22 questions, with three additional stroke-related questions for stroke participants only ("I like to exercise with other people who have had a stroke," "I think exercise will help prevent further stroke," and "I worry exercise might cause another stroke"). Participants were asked how much they agreed with each statement regarding different exercise preferences on a scale from 0–100%. The questions predominantly explored five factors: (1) exercise with others, (2) degree of structure of exercise programme, (3) independence, (4) exercise location, and (5) exertion (see Table 1). These factors are referred to as *a priori* factors, as they were subjectively determined before data were collected. The three general questions in Section 2 that were not related to the five factors of most interest were as follows: "I like to exercise," "I feel I am able to participate in an exercise program," and "I prefer to exercise in the morning."

Section 3 had three open questions enabling the participant to specify what they liked and disliked about exercise, and what stopped them from exercising. The last two questions asked participants to identify favoured types of exercise, first by listing three favourites (with no prompts) and then selecting most to least favourite of 10 exercise options (walking, water aerobics, golf, swimming, weight training, bowls, yoga, pilates, cycling, and gym).

2.5. Human Activity Profile. The HAP is a measure of activity that includes 94 activity items that require increasing energy expenditure [10]. For each item the participant indicates if they are still doing the activity, have stopped doing the activity, or if they never did the activity. Their highest level activity that they are still doing on the scale is noted and represents their maximum activity score (MAS). Their adjusted activity score (AAS) is calculated by subtracting the total number of activities the individual has stopped doing from those they are still doing. Higher scores represent greater activity. As the AAS is a more stable estimate of daily activities, it was the activity score used in this study. The HAP has been shown to be reliable [10] and valid in the stroke population [11].

2.6. Irritability, Depression, and Anxiety Scale. The IDA includes four subscales, but was primarily used to assess anxiety and depression levels. Of the 18 self-report items, five assess depression, five assess anxiety, and the other eight assess irritability. Higher scores represent greater mood disorder. The IDA has been validated [12] and used in previous stroke research [13].

2.7. Assessment of Quality of Life. The AQoL is a utility-based scale that assesses health-related quality of life across five dimensions: independent living, social relationships, illness, physical senses, and psychological wellbeing [14]. A score is calculated for each dimension, and then weighted to range from death (0) to full health (1). The overall score combines

Table 1: *A priori* exercise preference factors.

Factor 1 "group"	I like to exercise alone
	I like to exercise with family or friends
	I like to exercise with other people of similar age
	I like to exercise in a community group
Factor 2 "structure"	I like to do the same activity each time I exercise
	I like my exercise sessions to be planned (e.g., water aerobics class)
	I like to have written instructions for my exercises
	I like to make exercise part of my daily activities (e.g., walk to shops)
Factor 3 "independence"	I like someone showing me what to do when I exercise
	I like someone else to organise my exercise sessions
	I like the flexibility of organising my own exercise sessions
Factor 4 "location"	I like to exercise at a gym
	I like to exercise at a community fitness centre
	I like to exercise at a rehabilitation centre
	I like to exercise at home
	I like to exercise outdoors
Factor 5 "exertion"	I like to feel tired after an exercise session
	I like to do gentle exercise
	I like to work hard in an exercise session

all dimensions except "illness" and can range from −0.04 (worst possible quality of life) to 0 (equivalent to death) to 1 (best possible quality of life). The AQoL has been shown to be valid in both the general [14] and stroke populations [13].

2.8. Data Processing: Exercise Preference Questionnaire.

Section 2 A Priori Factors. To analyse differences in exercise preference between stroke survivors and controls on these factors, we first removed the 3 stroke-specific items. Second, in cases where questions reflected opposing views, for example, "I like to exercise alone" and "I like to exercise in a group," the anchor for the score of one question was reversed (from zero to 100). So if a score of 30 was recorded by the participant on this question, the final score for analysis was 70. This allowed us to determine an average agreement score for each factor, which was the sum of all scores for each question related to that factor divided by the number of questions within the factor. This was the score used for analysis for each factor. A single overall exercise preference score was also generated, termed a "vector," by combining all five factors together.

Section 2 Data-Driven Factors. Although we proposed the five *a priori* factors as a logical grouping, we also wished to let the data drive the development of item groupings and emergent themes. A factor analysis was therefore planned to explore factors emerging from the EPQ data. The three stroke-specific items were again removed. Data from the remaining Section 2 items were then entered into factor analysis (without reversal of negative questions).

Section 3. A coding tree was created for responses to the three open-ended questions (liked and disliked aspects of exercise and limitations to exercise). All responses were then coded independently by two reviewers (G. Banks and J. Bernhardt), and responses were tallied for each group.

2.9. Statistical Analysis.

Section 2 A Priori Factors. For each of the five *a priori* EPQ factors, Shapiro-Wilk tests were conducted to ascertain whether the data were normally distributed. As the majority were normally distributed, t-tests were used to determine whether there was a group difference on each factor. Multivariate regression was then conducted to assess the effect of group on the five factors, adjusted for anxiety, depression, and activity levels. An additional adjusted multivariate regression was used to assess the effect of group on the total exercise preference score (vector).

Section 2 Data-Driven Factors. For the data-driven approach, the first step was a factor analysis of data from all relevant items in Section 2 of the EPQ. A principal components analysis was computed, using the Oblimin rotation method (Promax with Kaiser Normalisation) for producing the pattern and structure matrices. Using an exact weighting scheme, each participant's estimated factor score on each factor was calculated as a weighted sum of the products of scoring coefficients and the participant's standardised scores on the original variables [15]. Once these weighted factor scores had been derived, the data analysis was the same as that described above for the *a priori* factors to determine between-group differences.

Table 2: Participant characteristics.

Characteristic	Stroke ($N = 23$)	Control ($N = 41$)
Male	15 (65)	27 (66)
Age—*mean (SD), range*	63.4 (14.7), 36–86	60.7 (13.5), 34–87
Married	15 (65)	34 (83)
Living arrangements		
Home alone	6 (26)	4 (10)
Home with others	16 (70)	37 (90)
Hostel	1 (4)	0 (0)
Side affected by stroke		
Left	16 (69)	n/a
Right	5 (22)	n/a
Other	2 (9)	n/a
Months since stroke—*mean (SD), range*	22.1 (13.6), 6–47	n/a

* $N(\%)$ unless otherwise specified.

Section 2 Variability. To determine the variability in preferences across the two groups, standard deviations for each *a priori* factor and also each individual item in Section 2 were calculated.

Other Analyses. Pearson correlations were computed to establish whether there were associations between exercise preferences, current activity levels, quality of life and anxiety, and depression. Descriptive statistics were used to summarise responses to the open questions in Section 3 of the EPQ. All data were analysed with SPSS (version 17) and STATA (version 9).

3. Results

The demographic characteristics of the 23 stroke survivors and 41 controls are outlined in Table 2.

3.1. EPQ Section 2 A Priori Factors. Stroke survivors had different exercise preferences to controls on 4 of the 5 factors (Figure 1). Stroke survivors had greater preference for exercising in a group ($t(62) = -2.0$, $P = 0.048$), greater preference for exercising in a structured manner ($t(62) = -3.6$, $P =< 0.001$), greater preference for being dependent in exercise ($t(62) = -2.5$, $P = 0.016$), and greater preference for exercising in a facility ($t(61) = -3.2$, $P = 0.002$). There was no difference between groups for factor 5, indicating both groups liked similar levels of exertion ($t(62) = -0.2$, $P = 0.804$). When psychological wellbeing (total IDA score) and activity level (HAP AAS score) were accounted for in multivariate regression, the group differences in exercise preference were diminished and only one—location—remained significant ("group," $P = .134$; "structure," $P = .082$; "independence," $P = .265$; "location," $P = .018$).

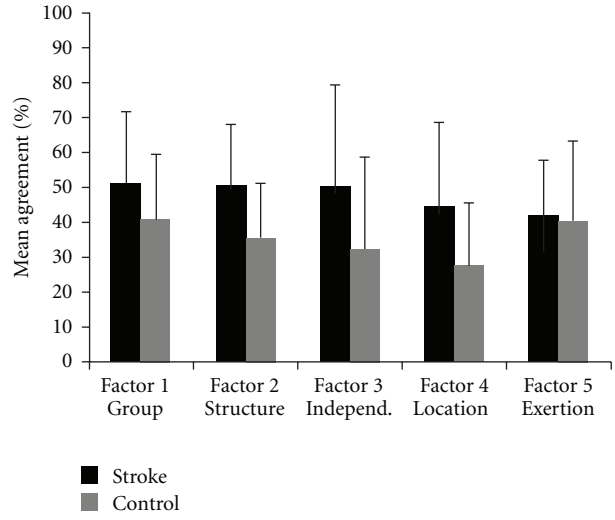

Figure 1: Mean scores for stroke and control groups on each of the 5 *a priori* EPQ factors (standard deviations are shown).

With the factors combined into a single vector, the stroke and control groups were significantly different on the total combined score ($P = 0.011$).

3.2. EPQ Section 2 Data-Driven Factors. Principal components analysis yielded 6 factors with eigenvalues >1, and these factors together accounted for 67% of the variance. Factor 1 alone accounted for 24%, factor 2 for 12%, and factor 3 for 11%. Cronbach's alpha was 0.75, indicating good internal consistency of the scale. The pattern matrix is presented in Table 3, using 0.5 as a cutoff for factor loading, and the labels that we coined to sum up each factor are shown in Table 4.

When the two groups were compared on the weighted factor scores, it was found that stroke survivors had different exercise preferences to controls on 2 of the 6 factors. Stroke survivors had greater preference for routine/"unadventurous" exercise ($t(61) = -2.9$, $P = 0.005$) and exercise at a gym or fitness centre ($t(61) = -4.1$, $P =< 0.001$) than controls, but there were no significant group differences among the other 4 factors. When psychological wellbeing (total IDA score) and activity level (HAP AAS score) were accounted for in multivariate regression, the group difference in exercise preference was diminished for the routine/"unadventurous" factor ($P = .179$) but remained for the gym/fitness centre factor ($P = .005$). These first 2 factors matched reasonably well with our *a priori* factors: 3 of the 7 routine/"unadventurous" factor items were from our "structure" factor, and another ("I like someone showing me what to do when I exercise") was from our "independence" factor; 3 of the 4 gym/fitness centre factor items were from our "location" factor.

3.3. Individual Variability in Exercise Preference. The error bars in Figure 1 show the variability (standard deviations) across the *a priori* factors for the two groups. Analysis of individual items indicated higher variability in the stroke group, where standard deviations were higher than for controls

Table 3: Factor analysis loadings used to derive the 6 data-driven factors.

	1	2	3	4	5	6
I prefer to exercise in the morning	.699					
I like to have written instructions for my exercise	.624					
I like to do the same activity each time I exercise	.609					
I like to do gentle exercise	.600					
I like to exercise at home	.530					
I like someone showing me what to do when I exercise	.506					
I like my exercise sessions to be planned	.506					
I like to exercise at a rehabilitation centre		.821				
I like to exercise at a gym		.727				
I like to exercise at a community fitness centre		.587				
I like the flexibility of organising my own exercise sessions			−.835			
I like to exercise in a community group			.663			
I like someone else to organise my exercise session			.562			
I like to exercise outdoors				.808		
I like to make exercise part of my daily activities				.780		
I like to exercise with other people of similar age				.526		
I like to exercise alone		−.506		.517		
I feel I am able to participate in an exercise program					.800	
I like to exercise					.644	
I like to work hard in an exercise session					.643	
I like to feel tired after an exercise session						.819
I like to exercise with family or friends						.508

Table 4: Data-driven factor labels.

Factor	Label	Exercise preferences
1	Routine, unadventurous	Planned, instructed, gentle, at home, prefer AM
2	Gym-goer	Rehab centre, gym, fitness centre, not alone
3	Follower	Not organising, community group, someone else to organise
4	Flexible	Outdoors, part of daily life, with similar-aged people, alone
5	Active	Able to exercise, like to exercise, like to work hard
6	Strenuous, social	Like to feel tired, with family of friends

on 16 of the 22 Section 2 items. Average item standard deviation was 33.0 in stroke compared to 29.4 in controls, and this difference was significant ($t(42) = 2.76$, $P = .009$). In the stroke group, the largest variability was for individual questions concerning location ("I like to exercise at a community fitness centre" (SD = 39.7, mean = 52.0), "I like to exercise at home" (SD = 39.5, mean = 57.2), "I like to exercise at a gym" (SD = 38.6, mean = 53.7)) and independence ("I like someone else to organise my exercise sessions" (SD = 38.8, mean = 50.2), "I like the flexibility of organising my own exercise sessions" (SD = 38.1, mean = 66.5)]. All had ranges of 0–100. The smallest variability was for individual questions concerning exertion ("I like to do gentle exercise" (SD = 26.9, mean = 65.0, range 20–100), "I like to feel tired after an exercise session" (SD = 27.9, mean = 71.5, range 0–100), "I like to work hard in an exercise session" (SD = 28.0, mean = 68.0, range 30–100)) and a question on structure ("I like to do the same activity each time I exercise" (SD = 26.5, mean = 72.6, range 25–100)).

3.4. Associations between Exercise Preferences and Other Variables. Using the 5 *a priori* factors, we identified significant negative correlations between: "structure" and activity levels ($r = -.49$, $P < .001$) and quality of life ($r = -.26$, $P = .035$), "independence" and activity levels ($r = -.37$, $P = .003$), and "location" and quality of life ($r = -.28$, $P = .027$). No associations with depression or anxiety were revealed.

3.5. Other Exercise Preference Data. More stroke survivors than controls were currently participating in an organised exercise program (48% versus 29%). Stroke survivors and controls were similar in the aspects of exercise they reported liking, focusing on the health benefits, improvements to fitness and strength, and how good it makes one feel. There were group differences in dislikes and barriers, however, with stroke survivors reporting pain and tiredness whereas controls reported issues with not having enough time and motivation (see Table 5). Fear that exercise might cause

Table 5: Likes, dislikes, and limitations to exercise for stroke survivors and controls.

	Stroke	*N* (%)	Control	*N* (%)
Top 5 likes	1- Improves mobility	5 (22)	1- Improves fitness and strength	19 (46)
	2- Is healthy	4 (17)	2- Makes you feel better	17 (41)
	3- Improves fitness and strength	4 (17)	3- Is healthy	5 (12)
	4- Makes you feel better	4 (17)	4- Makes you flexible	3 (7)
	5- Improves the effects of stroke	4 (17)	5- Makes you feel happy	3 (7)
Top 3 dislikes	1- Nothing	9 (39)	1- Nothing	11 (27)
	2- Tiredness	5 (22)	2- Time it takes	7 (17)
	3- Pain	3 (13)	3- Hard to fit in	4 (10)
Top 5 limitations	1- Nothing	5 (22)	1- No time	11 (27)
	2- Being tired	4 (17)	2- Motivation	6 (15)
	3- Laziness	3 (13)	3- Nothing	5 (12)
	4- Weather	2 (9)	4- Injuries	5 (12)
	5- Illness	2 (9)	5- Laziness	4 (10)

NB: most participants gave multiple responses.

another stroke was not a major factor for most stroke survivors, although there were 4 survivors who expressed a moderate level of agreement (40–60%) with this statement. Only 2 stroke survivors expressed less than 50% agreement with the statement that exercise can help prevent stroke.

4. Discussion

The notable finding from this study was that stroke survivors have different exercise preferences to people of the same age who have not had stroke. These preference differences were evident irrespective of whether the EPQ's factor structure was defined *a priori* or generated from the raw data. In particular, stroke survivors reported a greater preference for structured exercise, exercise at a gym or fitness centre, and exercise in groups compared to controls. Many of these group differences diminished when current activity levels and psychological wellbeing were accounted for, indicating that these factors are important influences on exercise preference. Individual variability in preferences of stroke survivors was higher than controls for questions on exercise location but lower than controls for questions on exertion. The two groups also diverged on exercise dislikes and barriers, with stroke survivors focusing on pain and tiredness whereas controls focused on not having enough time and motivation.

First we will discuss group differences on the 5 *a priori* exercise preference factors. Stroke survivors had greater preference for group exercise rather than exercise alone. Exercising in a group provides a social interface as well as an exercise opportunity, and isolation can be a major issue following stroke [16]. Stroke survivors showed a strong preference to exercise with people of similar age compared with controls. This may reflect a desire to be around people with similar life experiences or a better understanding of their individual situation. The stroke group also had greater preference for structure and routine in exercise. Considering the limitations to one's own abilities following a stroke, a familiar environment and regular activities can be reassuring. Stroke survivors reported a greater preference for exercises to be demonstrated to them. Observation is an important part of learning, and an exercise demonstration can aid correct technique and help reduce potential injuries. Decreased confidence is common after stroke [17] and can limit a person's willingness to try the unknown without assistance. Stroke survivors also expressed greater preference for exercising in a facility. Exercising in a gym or community fitness centre is a known entity; amenities are generally easy to find and access and professionals are usually on hand if assistance is required.

A similar picture emerged from data-driven factor analysis. Factor 1 ("routine-unadventurous") corresponded with the *a priori* "structure" factor and factor 2 ("gym-goer") closely matched the *a priori* "location" factor. Stroke survivors and controls expressed significantly different exercise preferences on both these factors. Thus, the lines of evidence converge to indicate that stroke survivors prefer exercising in a structured manner at a specific facility compared to controls. In both *a priori* and data-driven analyses; however, the inclusion of current activity levels and psychological wellbeing in a multivariate model weakened the effect of group on exercise preference. The effect of group remained significant only for the *a priori* "location" factor and data-driven "gym-goer" factor, and these factors both centred around exercise in an established facility. This indicates that the preference for structured exercise expressed by stroke survivors is partly attributable to their lower activity levels and poorer psychological wellbeing.

Our findings in stroke do have similarities to those identified in cardiac patients, who were found to place more importance on being part of group exercise and having individualised attention from professionals than controls [7, 9]. The tendency for stroke survivors to prefer structured exercise and an established exercise facility, however, contrasts with the preferences of a group of slightly younger

breast cancer patients [7, 9]. Only 22% of these patients liked to exercise in an established facility, and the majority wanted exercise to be flexible and unsupervised. While it is important to demonstrate that different populations have different exercise preferences as a first step, the greatest clinical impact will come with understanding more about the preferences of individuals. Tools such as the EPQ can be used to understand the exercise preferences of individual stroke survivors and programs can be tailored accordingly. In line with our second hypothesis, stroke survivors had greater individual variability in exercise preferences than controls on 4 of the 5 *a priori* factors, although the differences were not marked. The main pattern to emerge was the relatively high variability among stroke survivors in whether they liked certain locations for exercise and whether they wanted to be independent. This suggests that planners of exercise programs for stroke survivors should take careful note of individual differences in preferences regarding location and independence. The stroke group had relatively low variability in whether they liked to exert themselves when exercising, indicating fewer individual differences on this parameter.

Correlational analyses using the *a priori* factors indicated that lower current activity levels were associated with a higher preference for structure and lower preference for independence. Lower quality of life was associated with a higher preference for structure and a higher preference for exercising at a facility. Stroke survivors reported poorer quality of life and lower activity levels than controls, and these factors are likely to be major underlying reasons for the difference in exercise preferences after stroke.

Responses to the open questions were informative. Both stroke and control groups liked exercise because it is healthy, improves fitness and strength, makes one feel good, and keeps the mind active. The two groups diverged, however, when it came to dislikes. Stroke survivors indicated that they did not like exercise because it can cause them pain and make them tired. A susceptibility to fatigue and tiredness is common after stroke, making previously routine activities tiring [18]. Stroke can also result in decreased strength and stability, increasing vulnerability to injury and pain. The poststroke sequelae of fatigue and pain should be considered, with modifications to session length and content as required, when planning exercise programs. In contrast, control participants indicated they disliked exercise because it takes a lot of time and is hard to fit in.

5. Conclusions

Understanding exercise preferences is important when organising an exercise or rehabilitation program. This preliminary study gives an insight into the exercise preferences of stroke survivors and their interaction with current activity levels, psychological wellbeing and quality of life. The next step will be to refine the Exercise Preference Questionnaire, adding or removing items where necessary, to ensure that it captures the most relevant information without becoming unwieldy.

Appendix

Exerices Preference Questionnaire$_{\text{(stroke)}}$

- This questionnaire is about what kinds of exercise you like and don't like.
- Your answers will help us understand more about the best kinds of exercise programs for people after a stroke.
- Please answer honestly—all information collected is confidential.
- The questionnaire shouldn't take more than 10 minutes—thank you for your time.

(1) Do you currently participate in an organised exercise program?

Yes ☐ No ☐ (If "no", please proceed to question 4)

(2) How long have you participated in this program for?

Less than 1 month ☐ 1–6 months ☐

More than 6 months ☐

(3) What does this program include? Tick all that apply.

Walking ☐ Aerobics ☐ Weight training ☐

Swimming ☐ Yoga ☐ Cycling ☐

Other ☐ (please specify)...

Please indicate how much you agree with each of the following statements:

Don't agree at all (0%)—Totally agree (100%)

(4) I like to exercise ☐%

(5) I feel I am able to participate in an exercise program ☐%

(6) I prefer to exercise in the morning ☐%

(7) I like to exercise at a gym ☐%

(8) I like to exercise alone ☐%

(9) I like to do the same activity each time I exercise ☐%

(10) I like someone showing me what to do when I exercise ☐%

(11) I like to exercise at a community fitness centre ☐%

(12) I like to feel tired after an exercise session ☐%

(13) I like to exercise with family or friends ☐%

(14) I like my exercise sessions to be planned (e.g., water aerobics class) ☐%

(15) I like someone else to organise my exercise sessions ☐%

(16) I like to exercise at a rehabilitation centre ☐%

(17) I like to do gentle exercise ☐%

(18) I like to exercise with other people of similar age ☐%

(19) I like to have written instructions for my exercise ☐%

(20) I like the flexibility of organising my own exercise sessions ☐%

(21) I like to exercise at home ☐%

(22) I think exercise will help prevent further stroke ☐%

(23) I like to work hard in an exercise session ☐%

(24) I like to exercise with other people who have had a stroke ☐%

(25) I like to make exercise part of my daily activities (e.g., walk to shops) ☐%

(26) I like to exercise outdoors ☐%

(27) I like to exercise in a community group ☐%

(28) I worry that exercise might cause another stroke ☐%

(26) What do you like about exercise?

.....

(27) What don't you like about exercise?

.....

(28) What stops you from exercising?

.....

(29) List your three favourite types of exercise

.....

(30) Number the following forms of exercise from 1–10 with 1 being your favourite and 10 being your least favourite form of exercise:

Walking ☐ Water aerobics ☐ Golf ☐

Swimming ☐ Weight training ☐ Bowls ☐

Yoga ☐ Pilates ☐ Cycling ☐ Gym ☐

THE END—Thank you very much.

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