Impact of E-Learning on Perceived Social Role Participation of Patients with Axial Spondyloarthritis: Results from a Longitudinal Randomized Control Trial

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BACKGROUND

The concept of social role and participation and its importance to general well-being is founded in the International Classification of Function (1). Individuals impacted by arthritis have identified social role participation (e.g. relationships, leisure activities, employment) as an important quality of life outcome (2). There is evidence that education programs are effective for patients with arthritis in terms of improved function and quality of life (2,3). The Toronto Western Hospital Spondyloarthritis Program developed a novel, interactive web-based education program for patients with Axial Spondyloarthritis (axSpA) with input from patients and an interdisciplinary team of health care professionals. The module covers evidence-based topics including diagnosis, treatment and self-management for daily living with axSpA.
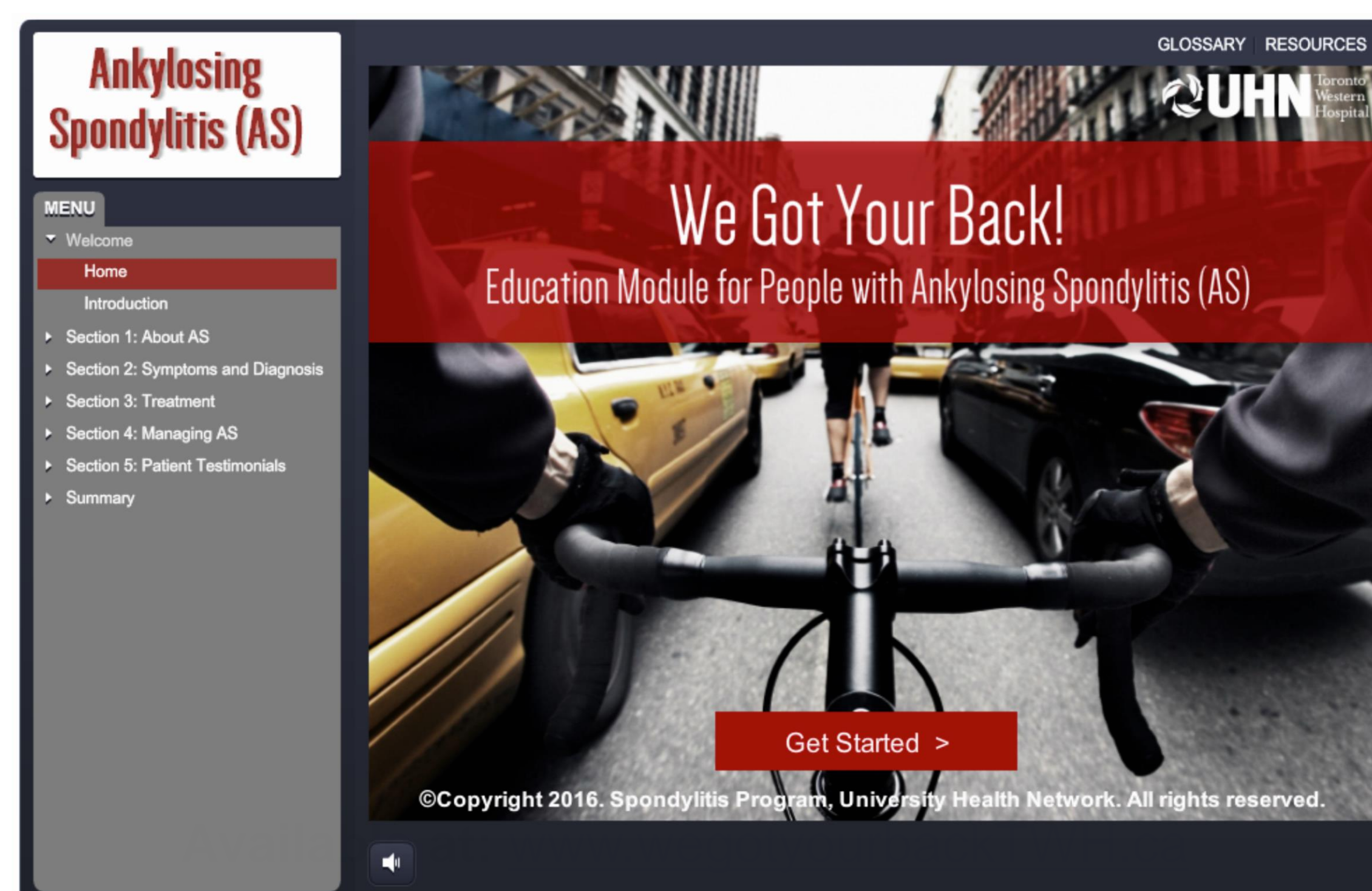
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PURPOSE

The purpose of this study was to measure the impact of the axSpA e-Learning patient education program on patients' perception of social roles and participation.

METHODS

Fifty-six adult patients with axSpA attending a tertiary academic spondyloarthritis clinic were randomized to one of two groups: 1) e-Learning intervention, in addition to usual care patients were emailed a link to the online module to be completed at their leisure; or, 2) usual care (i.e. control group). All patients completed outcomes measuring Social Role and Participation (SRPQ, 4) at baseline, immediately after completing the e-Learning module, and again at 6 to 12 months. The SRPQ includes 12 role domains with 3 dimensions: 1) role importance, 2) restriction to role participation, and 3) satisfaction with social role performance. Patients identified importance (i.e. 1 – not at all important to 5 – extremely important) and satisfaction (i.e. 1 – not at all satisfied to 5 – extremely satisfied) with roles on a scale. Univariate and bivariate analyses were conducted on SAS 9.2. Non-parametric T-tests (Mann-Whitney and Wilcoxon Signed Rank test) were used to compare continuous variables and paired continuous outcomes respectively. Fisher's exact test was used to compare categorical variables.

RESULTS

Twenty-three patients with axSpA completed the e-Learning module and thirty-three patients continued with usual care. Overall, mean (SD) age was 42.3 (12.9) years, 69.6% were male, mean (SD) disease duration was 12.9 (10.2) years and 75% had a post-secondary education.
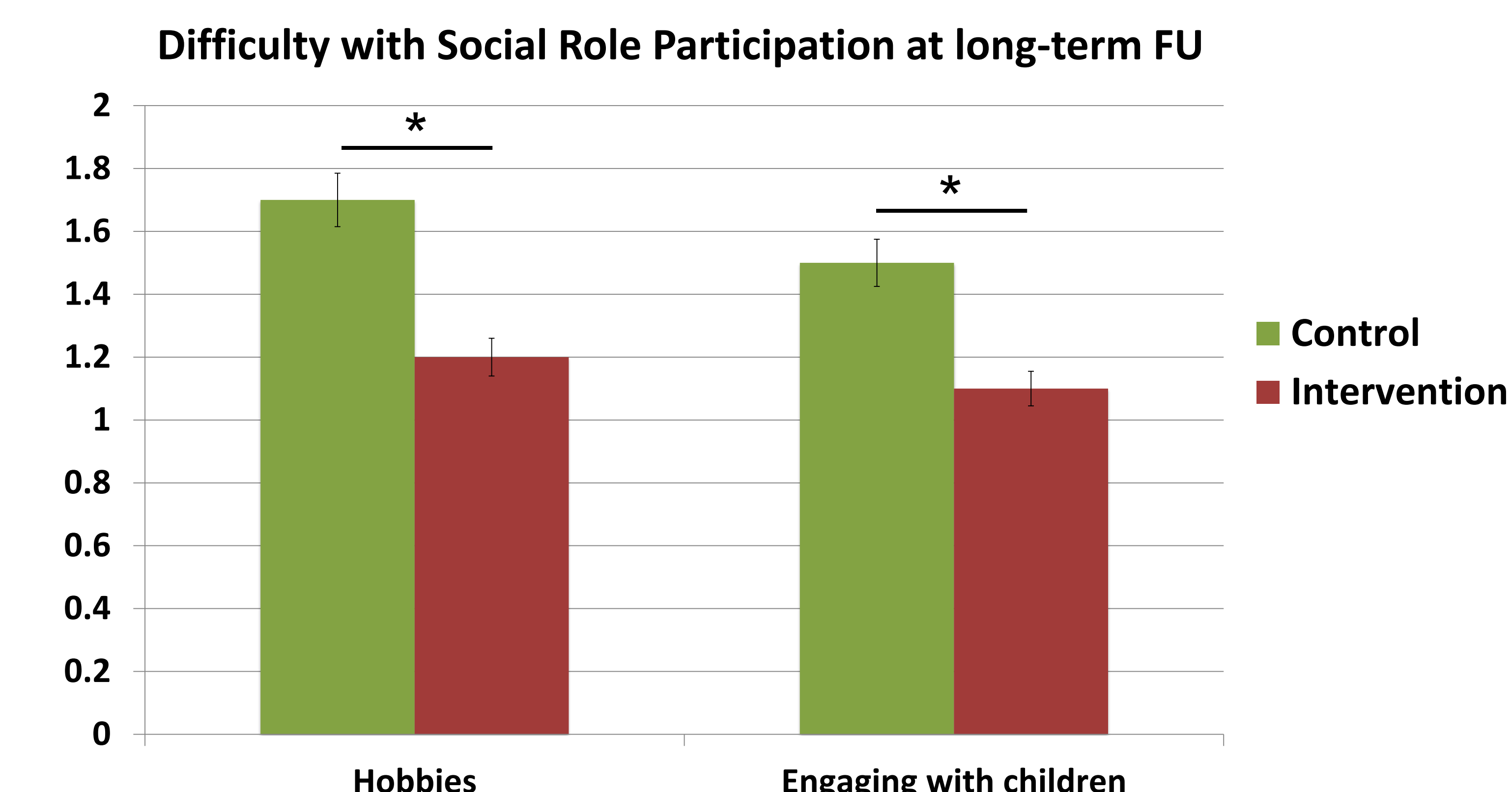
RESULTS (cont'd)

Table 1. Baseline demographics and disease characteristics

Variable	Frequency (%) or Mean (sd)		p-value
	Controls N=33	Intervention N=23	
Age (years)	40.0 (12.4)	44.6 (13.4)	0.17
Disease duration (years)	10.4 (9.1)	15.3 (11.3)	0.13
Sex (male)	66.7	73.9	0.77
Education:			0.64*
University	75.0	81.8	
College	12.5	4.6	
High School	12.5	9.1	
Unknown	0	4.6	
Employed	87.9	82.6	0.70
Human leukocyte antigen-B27 (present)	75.0	86.4	0.49
Erythrocyte sedimentation rate	12.7	6.3	0.17
C-reactive protein	8.7	3.7	0.40
Extra-articular manifestations:			
Inflammatory bowel disease	6.3	8.7	1.00
Uveitis	21.9	34.8	0.36
Psoriasis	15.6	17.4	1.00
Bath ankylosing spondylitis disease activity index (BASDAI) score	3.3 (2.7)	3.0 (2.1)	0.94
Pharmacological management:			
Non-steroidal anti-inflammatories	81.3	69.6	0.35
TNFα-inhibitors	62.5	60.9	1.00
Disease modifying anti-rheumatic drugs	9.4	17.4	0.44
Other Medications	9.4	17.4	0.44
Body mass index	26.6 (4.4)	28.0 (3.4)	0.45
Smoking Status	25.0	13.0	0.33
Co-morbidities:			
Respiratory	6.3	14.3	0.37
Cardio-vascular	21.9	14.3	0.72
Mental-illness	3.1	14.3	0.29
Other	13 (40.6%)	7 (33.3%)	0.77

*p-value compares (college/university vs.≤ high school)

Figure 1. Study recruitment

LFU: lost to follow-up

Comparison by study group at baseline showed that importance of "relationship with other family members" was lower in the intervention group (p = 0.02), otherwise there were no significant differences between groups.

Immediate follow-up measures indicated lower perceived importance in the intervention group with respect to: "plan/attend social events" (p = 0.007); "having a paid job" (p = 0.005); "relationship with other family members" (p = 0.02); and "fully participating in all aspects of life" (p = 0.02). The intervention group also reported lower satisfaction with "type of paid work that you are able to have" (p = 0.03). At 6-12 months follow-up, the intervention group reported less difficulty with certain activities (see Figure 2). This group also identified "intimate relationships" (p = 0.02) and "fully participating in all aspects of life" (p = 0.02) as less important.

Figure 2. Comparison of 6-12 months follow-up outcomes by study group
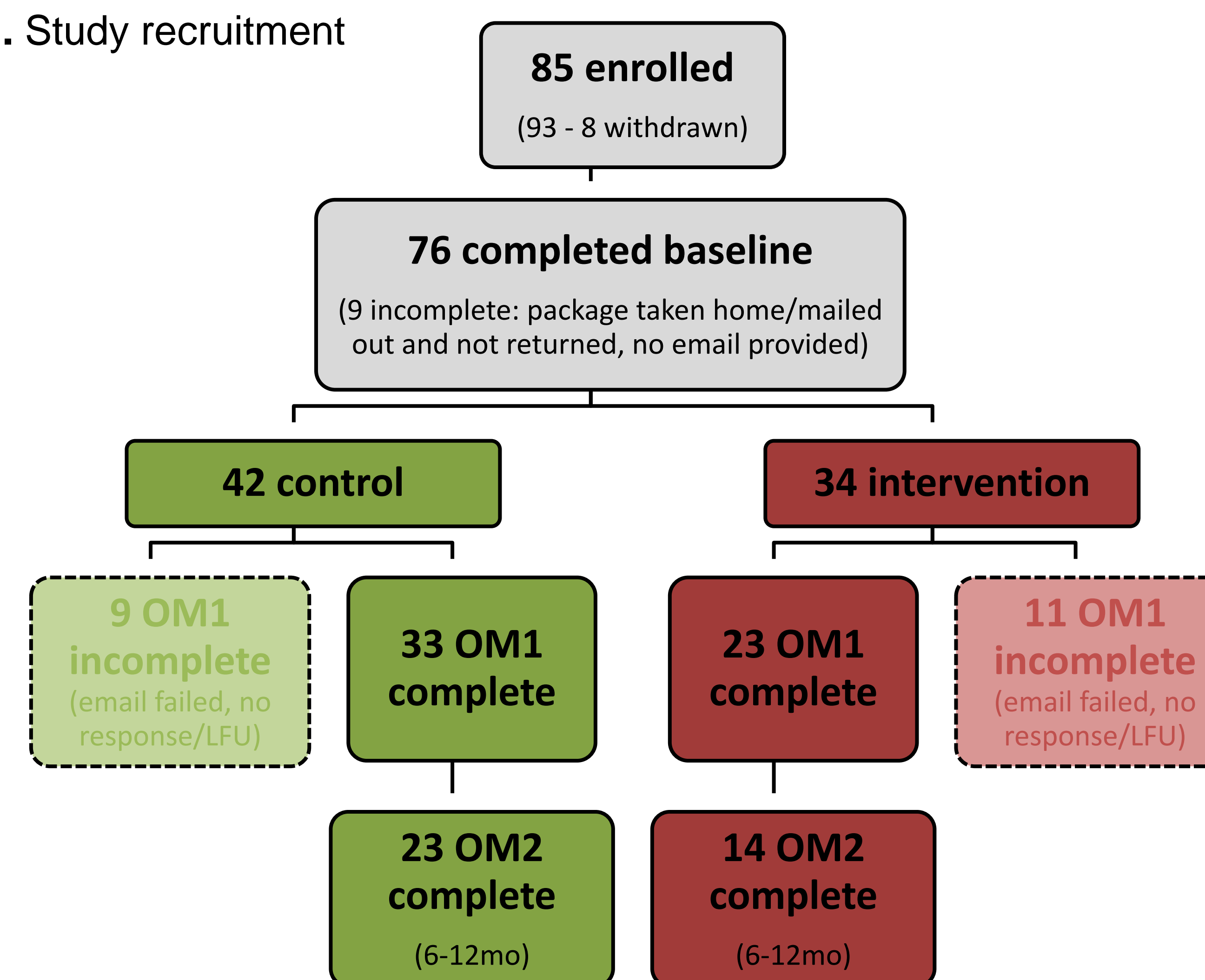

*p<0.05

CONCLUSIONS

Overall, we have found that patients with axSpa prefer electronic mediums of education over other formats (5). Although there are significant differences in the levels of importance of several social role subscales, the reported differences are relatively small. Long-term findings of less physical difficulty with some subscales (i.e. hobbies and engaging in activities with children/grandchildren) might indicate potential long-term benefits of the e-Learning module to patients with axSpA. Differences between the two groups in self-reported importance and satisfaction with social roles suggests that having received an electronic education program specific to axSpA is equivalent to receiving care at a academic specialized tertiary institution. This e-Learning module has potential to provide benefit to patients with axSpA who have limited access to specialized care, ultimately optimizing outcomes in this population.

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