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Evaluation of an Ankylosing Spondylitis Education and Self- Management Program: Beneficial effects on AS specific outcomes

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Background

- ▶ Self management programs - demonstrated to provide significant health benefits in people with multiple musculoskeletal diseases.
- ▶ We (AOFWA) have successfully developed and delivered programs in osteoarthritis and rheumatoid arthritis (published)
- ▶ AS is more prevalent in male adults with most symptoms presenting in the late teens to early thirties. It is less likely to present after 45 years.
- ▶ Limitations related to the disease or flares can impact on patients' lifestyle relating to self-care, work and recreation.
- ▶ Understanding these factors will allow patients to avoid precipitants, accept limitations, modify lifestyle and adhere to strategies that have been demonstrated to modify the course of the disease.

Aim

- ▶ To examine the benefits of a **locally developed** Ankylosing Spondylosis Self-Management Program (ASSM) delivered by trained allied health professionals for people with AS regarding change in health status, quality of life, and disease activity and whether this benefit would be sustained.

Objective

Primary purpose

- Develop an Ankylosing Spondylitis Education and Self-Management (ASSM) program
- Have trained allied health professionals deliver the ASSM to participants

Secondary purpose

- **Disease activity outcomes**
- Develop facilitators' manuals & toolkits for use by health professionals
- Design and develop “Train the trainer workshop” to train health professionals

Disseminate the ASSM program

Inclusion / Exclusion criteria

Inclusion criteria

- Clinical diagnosis of AS confirmed by their rheumatologist
- Aged ≥ 18 years

Exclusion criteria

- Non English speaking
- Co-morbid inflammatory musculoskeletal disease and/or
- Visual, auditory or cognitive impairment

Method

- ▶ An ASSM program was **developed locally**.
- ▶ Patients with Ankylosing Spondylitis were invited to complete the six week ASSM program.
- ▶ Components of program - next slide
- ▶ Patient health status, quality of life and disease activity were assessed at baseline and multiple time points following the completion of the program.

SLIDE - BRIEF PROGRAM OVERVIEW (HAND-OUT)

- SELF-MANAGEMENT PHILOSOPHY AND SMART GOAL SETTING
- LEARNING ABOUT ANKYLOSING SPONDYLITIS & SPONDYLO-ARTHROPATHIES'
- LEARNING ABOUT JOINTS AND SPINE
- RELAXATION AND A GOOD NIGHT SLEEP
- STRETCHES, EXERCISE & FITNESS FOR AS
- MANAGING FATIGUE
- AS. IMMUNE DRIVEN - WHAT HAPPENS?
- PAIN MANAGEMENT STRATEGIES
- COGNITIVE BEHAVIOUR TECHNIQUES (CBT)
- LIVING AND COPING WITH AS
- MEDICATIONS FOR AS
- BLOOD TESTS AND RADIOGRAPHY
- POSTURE AND BALANCE
- THE COSTS OF AS
- WORKING WITH AS
- DIET FOR AS
- CAM FOR AS
- OSTEOPOROSIS
- PREGNANCY AND AS
- SPORT AND AS

Methods: Outcome Measures

Ankylosing Spondylitis Disease-specific measures

- Bath AS Metrology Index (BASMI)
- Bath AS Functional Index (BASFI)
- Bath AS Disease Activity Index (BASDAI)
- Bath AS Patient Global Score (BAS-G)
- Ankylosing Spondylitis Quality of Life (ASQoL)
- Evaluation of Ankylosing Spondylitis Quality of Life (EASI-QoL)

General Measures

- Physician Global assessment of Disease Activity (PGDA)
- Hospital Anxiety and Depression Scale (HADs)
- Health/ HIV Disability Questionnaire (HDQ)
- Pain Self Efficacy Questionnaire (PSEQ)
- Multi-Dimensional Assessment of Fatigue (MAF) - Global Fatigue Index (GFI)
- Fatigue Severity Scale (FSS)
- 36-Item Short Form Health Form (SF-36)

Results

- ▶ 208 participants were recruited, 55.8% were male and the mean age was 46.2 ± 15.2 years
- ▶ The median time to AS diagnosis from the index symptom experience was 7.6 ± 9.8 years
- ▶ Ankylosing Spondylitis disease activity marker:
 - ▶ BAS-G scores **improved** at 3 months ($p=0.048$) and was sustained at 12 months ($p<0.001$)
 - ▶ BASDAI **improved** at 3 months ($p=0.060$) and was sustained at 12 months ($p=0.001$).
 - ▶ The ASQoL ($p=0.315$) and BASFI ($p=0.107$) were no different from baseline to any time point up to 12 months

Results

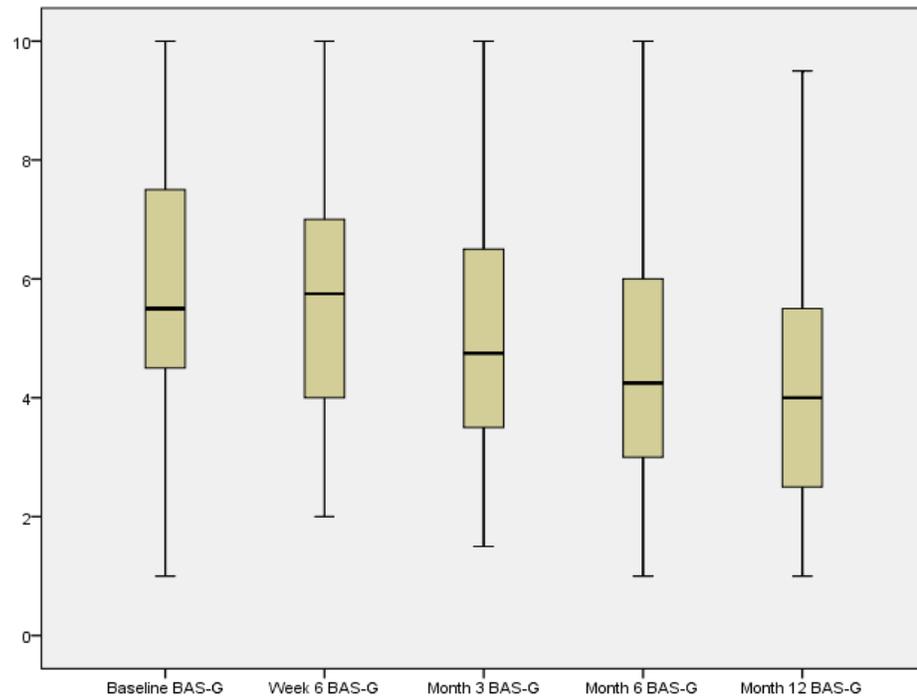
- ▶ Participants reported less nocturnal back pain from 0 to 12 months ($p=0.001$).
- ▶ PGDA improved by 12 months ($p=0.049$)
- ▶ MAF-GFI improved at 3 months ($p=0.017$).
- ▶ SF-36 some components improved by 12 months

Results

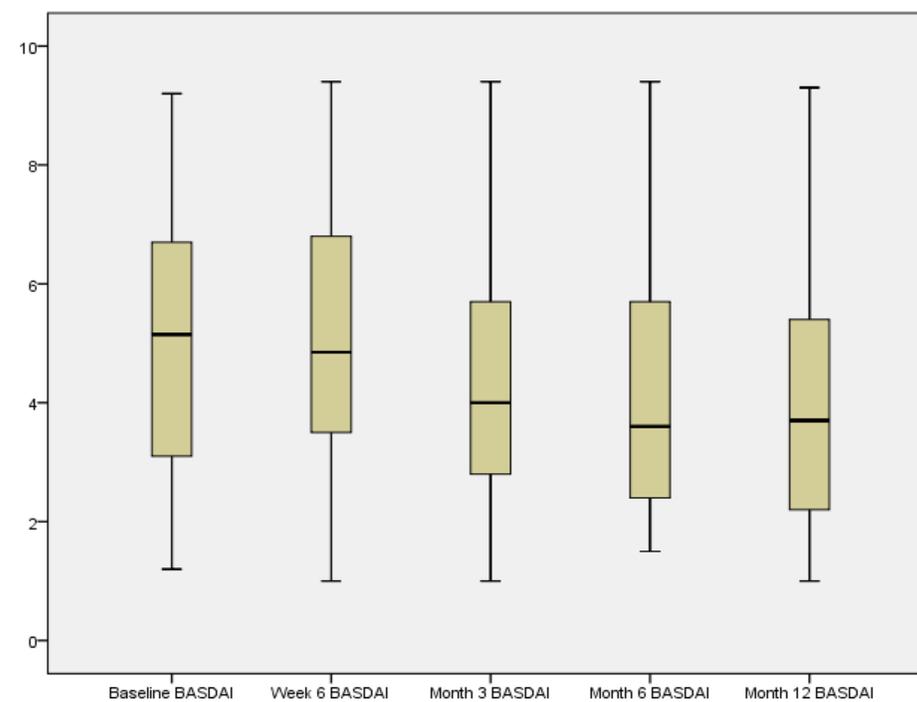
- ▶ HADS, EASiQoL, PSEQ and MAF-GFI scores did not show improvement over 12 months ($p > 0.05$).
- ▶ The **within subject contrasts** assessed the within subject change between baseline and 12 months.
- ▶ All outcomes except HADS and FSS demonstrated **significant within subject improvement** (p value range < 0.001 to 0.048)

Result: Disease specific outcomes Post-Intervention

BAS-G Scores

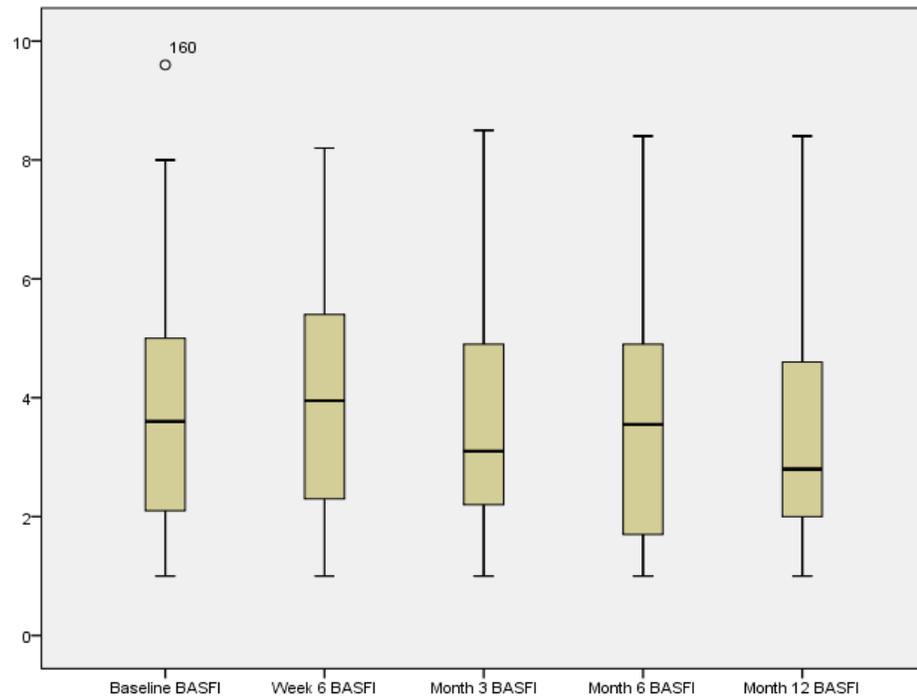


BASDAI Scores

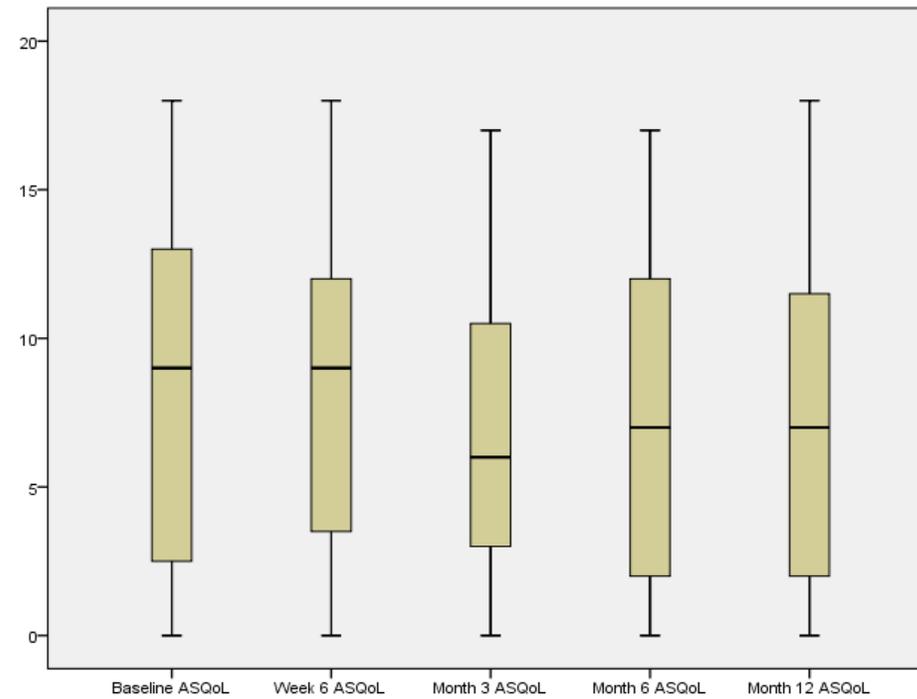


Result: Disease specific outcomes Post-Intervention

BASFI Scores



ASQoL Scores



Conclusion

- ▶ This custom developed program (ASSM) has demonstrated significant and sustained benefit in terms of patient symptoms, disease activity measures and quality of life in a condition that results in significant impairment, disability and poorer quality of life.
- ▶ The benefit of this program can potentially be tested in a RCT with cost effectiveness outcomes included.
- ▶ Roll out of this program in AS management may be worth considering.

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 - ▶ **Dr Charles Inderjeeth** - Rheumatologist /Gerontologist SCGH and UWA
 - ▶ **Dr Kathie Briffa** - School of Physiotherapist Curtin University WA
- ▶
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- ▶
- ▶ **Ric Forlano, CEO**
- ▶ **Arthritis Foundation of WA**

Thank You

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- ▶ Zochling, J., *Measures of symptoms and disease status in ankylosing spondylitis: Ankylosing Spondylitis Disease Activity Score (ASDAS), Ankylosing Spondylitis Quality of Life Scale (ASQoL), Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), Bath Ankylosing Spondylitis Functional Index (BASFI), Bath Ankylosing Spondylitis Global Score (BAS-G), Bath Ankylosing Spondylitis Metrology Index (BASMI), Dougados Functional Index (DFI), and Health Assessment Questionnaire for the Spondylarthropathies (HAQ-S)*. *Arthritis Care Res (Hoboken)*, 2011. **63 Suppl 11**: p. S47-58.
- ▶ Coleman, S., et al., *Self-management for osteoarthritis of the knee; does mode of delivery influence outcome?* *BMC Musculoskelet Disord*, 2010. **11**: p. 56.
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- ▶ Vermaak, V., et al., *Evaluation of a disease specific rheumatoid arthritis self-management education program, a single group repeated measures study*. *BMC Musculoskelet Disord*, 2015. **16**: p. 210.

Result: Quality of Life and Disease Activity tools over time.

	Sample	Baseline	Week 6	Week 6 to Baseline	3 Months	3 Months to Baseline	6 Months	6 Months to Baseline	12 Months	12 Months to Baseline	Within-Subjects Contrasts
	N	Mean (SE)	Mean (SE)	p-value	Mean (SE)	p-value	Mean (SE)	p-value	Mean (SE)	p-value	p-value
AS Specific Tools											
BAS-G	66	5.62 (0.27)	5.67 (0.25)	1.000	4.91 (0.25)	0.048	4.58 (0.26)	0.003	4.24 (0.24)	0.000	0.000
BASDAI	66	4.99 (0.25)	5.00 (0.26)	1.000	4.39 (0.24)	0.060	4.26 (0.26)	0.024	4.06 (0.25)	0.001	0.000
ASQoL	67	8.18 (0.72)	8.09 (0.66)	1.000	7.00 (0.61)	0.238	7.11 (0.65)	0.401	7.02 (0.67)	0.315	0.009
BASFI	66	3.84 (0.25)	4.05 (0.24)	1.000	3.62 (0.23)	1.000	3.68 (0.25)	1.000	3.35 (0.24)	0.107	0.002
General Intervention Assessment											
Back Pain (Nocturnal)	66	4.39 (0.29)	4.15 (0.29)	1.000	3.99 (0.26)	1.000	3.71 (0.28)	0.065	3.41 (0.28)	0.001	0.000
Back Pain (Total)	66	4.95 (0.28)	5.02 (0.28)	1.000	4.71 (0.26)	1.000	4.71 (0.26)	0.168	4.29 (0.28)	0.042	0.002
PGDA	66	4.79 (0.27)	5.12 (0.27)	1.000	4.67 (0.26)	1.000	4.44 (0.25)	1.000	4.05 (0.26)	0.049	0.000
HADS	66	13.91 (1.05)	13.77 (1.03)	1.000	13.67 (0.96)	1.000	13.24 (0.97)	1.000	12.61 (0.93)	1.000	0.121
HDQ	67	8.91 (0.63)	9.40 (0.68)	1.000	8.54 (0.64)	1.000	7.79 (0.66)	0.792	7.58 (0.66)	0.473	0.007
EASiQoL (Physical)	47	7.81 (0.77)	7.94 (0.74)	1.000	7.43 (0.72)	1.000	7.30 (0.79)	1.000	6.32 (0.72)	0.177	0.015
EASiQoL (Disease Activity)	47	7.36 (0.55)	8.00 (0.54)	1.000	7.11 (0.53)	1.000	6.81 (0.60)	1.000	6.77 (0.57)	1.000	0.048
EASiQoL (Emotional)	47	6.79 (0.72)	8.12 (0.67)	0.099	6.34 (0.63)	1.000	5.79 (0.70)	1.000	5.47 (0.53)	0.588	0.003
EASiQoL (Social)	47	6.87 (0.74)	7.57 (0.65)	1.000	6.92 (0.65)	1.000	6.30 (0.75)	1.000	5.83 (0.60)	1.000	0.030
PSEQ	66	38.12 (1.65)	38.50 (1.18)	1.000	36.9 (1.65)	1.000	39.45 (1.65)	1.000	41.74 (1.60)	1.000	0.017
MAF-GFI	66	26.91 (1.71)	27.41 (1.65)	1.000	24.17 (1.74)	0.316	22.69 (1.72)	0.035	24.18 (1.63)	0.562	0.002
FSS	56	4.54 (1.54)	4.65 (1.40)	1.000	No Data	No Data	4.59 (1.61)	1.000	No Data	No Data	0.790

GLM Repeated Measures ANOVA

SF-36 over time.

	Sample	Baseline	Week 6	Week 6 to Baseline	3 Months	3 Months to Baseline	6 Months	6 Months to Baseline	12 Months	12 Months to Baseline	Within- Subjects Contrasts
	N	Mean (SE)	Mean (SE)	p-value	Mean (SE)	p-value	Mean (SE)	p-value	Mean (SE)	p-value	p-value
SF-36 or General Intervention Assessment (continued)											
Physical function	73	62.0 (2.98)	60.9 (2.83)	1.000	63.4 (2.64)	1.000	62.7 (2.95)	1.000	62.7 (2.95)	0.007	0.000
Role physical	16	46.4 (10.60)	58.9 (10.88)	1.000	61.5 (10.84)	1.000	53.1 (10.67)	1.000	68.2 (10.57)	0.675	0.109
Role emotional		No data	No data		No data		No data		No data		
Energy/ fatigue	66	41.0 (2.09)	35.0 (1.63)	0.030	36.3 (1.68)	0.150	45.8 (2.27)	0.160	45.4 (2.18)	0.277	0.000
Emotional well-being	66	59.2 (2.04)	50.1 (1.46)	0.000	52.7 (1.59)	0.038	63.3 (1.97)	0.209	63.9 (1.70)	0.120	0.000
Social function	66	61.5 (3.53)	60.04 (3.76)	1.000	62.12 (3.44)	0.000	65.53 (3.47)	1.000	67.80 (3.47)	1.000	0.048
Bodily pain	66	47.3 (3.13)	44.7 (2.39)	1.000	47.2 (2.36)	1.000	55.4 (3.21)	0.066	60.3 (3.03)	0.000	0.000
General health	66	49.6 (2.77)	49.6 (2.91)	1.000	48.8 (2.92)	1.000	51.9 (2.85)	1.000	50.5 (2.83)	1.000	0.0458

GLM Repeated Measures ANOVA

RAND 36-Item Health Survey