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Effects of Core Stabilization Exercise through Leaflet and Video in Adolescent Idiopathic Scoliosis

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Objective

- **Core stabilization exercises**
  - a key component of exercises for the conservative treatment of adolescent idiopathic scoliosis (AIS)

- Aim of this study
  - to evaluate the effectiveness of two different home-based exercise instruction methods (**leaflets versus video materials**) for children with **AIS** performing core stabilization exercises.

Methods

- This study retrospectively assessed 39 children (leaflet group=30, YouTube video group=9) with **AIS** receiving treatment at an outpatient rehabilitation clinic

- Depending on the group, the children were provided with a leaflet or YouTube video link detailing core stabilization exercises
  - instructed to perform the exercises daily at home **for 6 months, completing three sets daily**

- **Evaluation**
  - **Whole-spine X-rays** :taken before and after the 6-month intervention to measure changes in the Cobb angle and degree of vertebral rotation.
  - **Endurance** to maintain the Superman and Bird-Dog positions

Figure 1. The YouTube video provided to the YouTube Video group in this study

- **Statistical analysis**
  - The **Mann-Whitney U test** :used to compare outcomes between the two groups
  - The **Wilcoxon signed-rank test** was used to assess pre- and post-intervention changes within each group

Results

Table 1. Demographic data of the children with JIS

Total 39 children		Mean ± Standard Deviation
Age (years)	The youngest : 10 years The oldest: 15 years	11.46 ±1.46
Gender	Male	14
	Female	25
Group	Brochures	30
	YouTube videos	9
Height growth (cm) over 6 months		2.72±1.92

- After 6 months of intervention, the leaflet and YouTube groups showed no significant differences regarding Cobb angle, rotational degree, or endurance in the Bird-Dog and Superman positions.

- **Within-group** comparisons before and after the 6-month exercise period
  - showed a significant improvement in Cobb angle in the leaflet group

		Bird dog (sec)	Superman (sec)	Cobb's angle	Rotation Degree
Leaflet group	**Pre**	8.00±4.07	9.33±2.54	**11.77±1.44**	0.37±0.49
	Post	9.00±3.05	10.00±0.00	**8.68±4.31* (p=0.001)**	0.40±0.50
	Diff	1.00±4.03	0.67±2.54	-3.09±4.37	0.03±0.19
YouTube video group	**Pre**	8.89±3.33	10.00±0.00	13.75±2.73	0.33±0.50
	Post	8.89±3.33	10.00±10.00	10.95±5.67 (p=0.05)	0.22±0.44
	Diff	0.00±0.00	0.00±0.00	-2.80±3.86	-0.11±0.33

Table 2. Comparisons of the leaflet-based and video-based groups

Conclusion

- The findings of this study suggest
  - **No significant difference in the effectiveness of core stabilization exercises** for AIS when instructed through a leaflet or a YouTube video