IMPACT OF POSTURAL EDUCATION ON CHILD'S SITTING POSITION IN CLASSROOM AND ON BACK PAIN

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I. INTRODUCTION

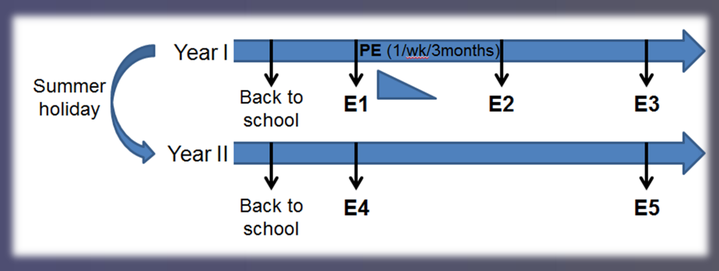
Low back pain concerns 70% of a global population and can appear as soon as primary school; mainly due to poor sitting position (SP) [1]. This study aimed to evaluate the influence of school furniture associated with postural education on schoolchildren's SP in classroom and on back complaints.

II. METHODS

Seventy-seven first primary schoolchildren were divided into an experimental group (EG) (n=46) and a control group (CG) (n=31) and took part in this study.

This 2-school-year-cluster randomized controlled study included 5 phases of evaluation (E1 to E5):

- E1: Evaluation before any intervention
- E2: Evaluation after having provide a triangular cushion and 3 months of postural education (PE)
- E3: Evaluation after 6 months using the cushion
- E4: Evaluation of the holiday effect
- E5: Evaluation after 2 years using the cushion



ITEMS	2 POINTS	1 POINT	0 POINT
Cervical column		right	curving
Upper limb		bearing	no bearing
Back rest use		yes	no
Lumbar column		right	curving
Trunk-thights angle	obtuse	right	acute
Thight	scarbed	parallel	crossed
Lower limb	2 feet	1 foot	0 foot
Chair legs use		4 feet	2 feet
			TOTAL /11

At each step of the study, the children's (SP) was assessed with a specific observation form composed of different items (max score = 11/11 corresponding to an ideal SP).
In addition, a questionnaire about spinal pains was submitted at the beginning of the study and at the end of each school-year.

III. RESULTS

Compared with the CG and except from E3 to E4, the children's of the EG significantly improved their SP at each step of the study ($p<0.02$) (**Figure 1**). Specifically, the use of the cushion combined with the PE resulted in a more open trunk-thighs angle ($p=0.02$), better maintenance of the lumbar lordosis ($p=0.03$) and better support of both feet on the ground ($p=0,02$).

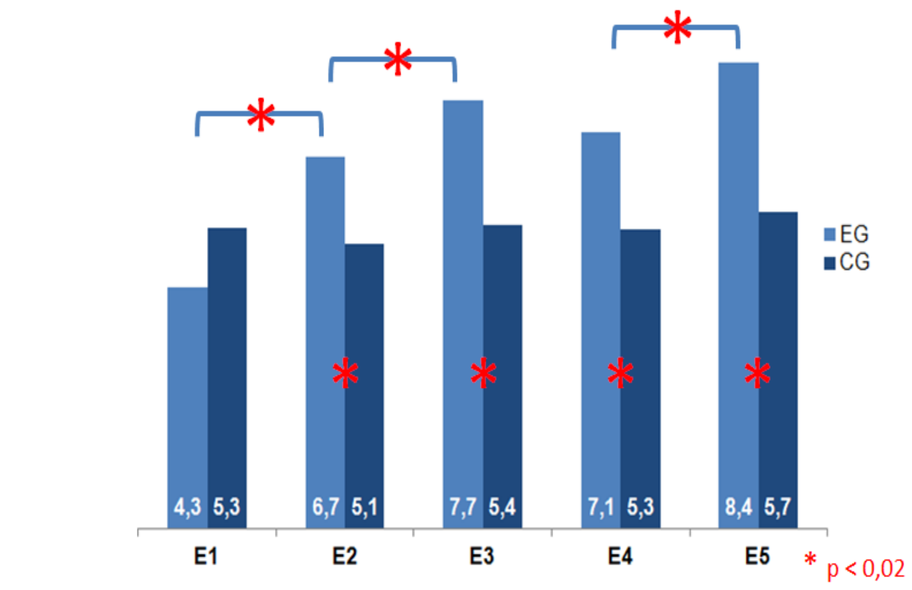


Figure 1: Mean score (/11) reflecting the sitting position quality at baseline (E1) and the following assessment sessions (E2-E5). (* $p < 0.02$).

The intervention tends to decrease back pain, specifically in neck and lumbar spine (**figure 2**)

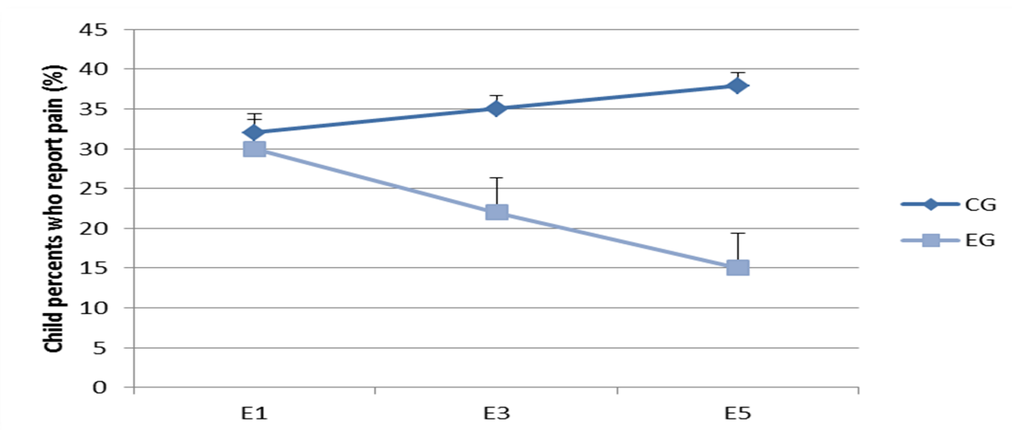


Figure 2: Percent of children who report pain at the beginning of the study (E1) and at the end of each school year (E3 and E5).

IV. CONCLUSION

The children's sitting position in the classroom was improved using ergonomic furniture combined with a postural intervention. This approach also tends to reduce back complaints. Further studies are needed to confirm those results. A better and more comfortable sitting position could improve behavior and concentration in primary school children.

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REFERENCES

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