



# Assessing Spine-related Self-efficacy among School Children in Iran

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## ABSTRACT

**Aims:** Self-efficacy is an important predictor of spine-related behavior among adults. This article aimed to assess the self-efficacy toward healthy spine-related behavior among schoolchildren in Iran.

**Method and Materials:** A cross-sectional study was done in region 22 of capital Tehran, Iran, through a simple random sampling method. In this regard, 104 schoolchildren participated in the study. To collect data, a self-reported questionnaire was used. Descriptive/analytical statistical analysis was applied. Chi-square test was used to obtain relationship between self-efficacy and participants characterizes. The data was analyzed by SPSS version 24.

**Findings:** In all, 104 female elementary schoolchildren who were studying in 5<sup>th</sup> grade participated in this study. The findings demonstrated that the rate of back pain during last week was 23.1% (n=24). Only, 16.3% (n=17) of participants had a high level of self-efficacy. There were significant relationships between father's job (P=0.019) and presence of back pain (P=0.048) with self-efficacy.

**Conclusions:** Perceived self-efficacy toward healthy spine-related behavior was needed to be improved among schoolchildren by applying potential change strategies in educational program.

**Keywords:** Self-efficacy, Spine-related Behavior, Schoolchildren

## Introduction

Low Back Pain (LBP) as a cause of disability in adults, is one of the most public health concerns worldwide [1,2]. Recent research has shown that LBP is also an important cause of disability in children and adolescents. The prevalence of this health problem is increasing among the mentioned population. In addition, the presence of LBP in childhood plays a significant role in its presence in adulthood [3-5].

The cause of LBP in childhood - like other ages - involves a variety of physical and psychological factors [4,6]. Among them, behavioral risk factors are of great importance [7]. Based on previous study, the prevalence of LBP in fifth-grade female elementary schoolchildren were reported to be 23.6% [8].

It has been argued that healthy spine-related behavior among schoolchildren is a key factor in LBP prevention [9]. Moreover, according the previous study, self-efficacy is an important predictor of spine-related behavior among proposed population [10]. In this study the researchers aimed to assess the self-efficacy toward healthy spine-related behavior among schoolchildren in Iran.

## Method and Materials

A cross-sectional study was conducted between October 2018 and March 2019. Totally, 104 girls that have been attended in 5<sup>th</sup> grade of elementary school in region 22 of capital Tehran, Iran, participated in this survey. They were selected through the simple random sampling method. A self-reported questionnaire

was used to collect participants' basic characteristics and self-efficacy items. Basic characteristics of participants questions included: the father and mother's job, level of their education, transmit tool, and a question about the presence of low back pain during last week (Yes, No).

To assess self - efficacy of school children, firstly, the subscales of BABAQ questionnaire, that had been applied in our previous studies and showed a good reliability [11,12], was used. The Cronbach's alpha and intra class correlation coefficients of this subscale were 0.93 and 0.83, respectively. Self-efficacy subscale consisted of 4 items as follows:

1. How do you perceive participating in physical activity and sports each day?
2. How do you perceive attaining a natural curvature of the spine?
3. How do you perceive checking your book bag weight?
4. How do you perceive paying attention to ergonomically postures?

The items were estimated on a 4-point scale (from difficult to easy); higher scores indicated higher self-efficacy. Again, the authors allocated a range score representing high, medium, and low self-efficacy. The SPSS version 24 was used to analyze data. Descriptive statistical method was conducted to demonstrate basic characterizes and self-efficacy of participants. Chi-square tests was used to consider relationship between categorical variables. Statistically significant level was obtained at  $p < .05$ .

This study was approved by the ethics committee of Tarbiat Modares University under the code IR.TMU.REC.1396.727. all of the participants and their parents about research aim were informed. Then, they approved to participate in this study by completing and returning the questionnaire.

## Findings

In all, 104 school children approved to participate in this study. Findings demonstrated. about

23.1% of participants (n=24) were suffering from LBP during last week. Table 1 shows the rest basic demographic characterizes of the participants.

**Table 1)** Demographic data of the participants

Father's job	Number	Percent
Employed	92	88.5
Unemployed	2	1.9
Retired	6	5.8
<b>Mother's job</b>		
Employed	21	20.2
Housewife	81	77.9
<b>Father's education</b>		
Illiterate/primary	3	2.9
Secondary	51	49.0
Higher	36	34.6
<b>Mother's education</b>		
Illiterate/primary	6	5.8
Secondary	59	56.7
Higher	28	26.9
<b>Having back pain</b>		
Yes	24	23.1
No	80	76.9
<b>Going to school by</b>		
Walking	20	19.2
Public transportation	4	3.8
Own car	40	38.5
School service	40	38.5

Table 2 shows that mean score of pupils' self-efficacy was  $10.29 \pm 3.05$ . Furthermore, around 10.6% (n=11), 70.2% (n=73), and 16.3% (n=17) of participants had a low, medium,

and high level of self-efficacy toward healthy spine-related behavior respectively. In addition, descriptive statistical results of self-efficacy items has been shown in Table 2.

Table 3 demonstrates the relationship between self-efficacy and basic characterizes

of the participants. There were statistically significant associations between self-efficacy with father’s job (P=0.019) and presence of LBP (p=0.048) respectively. There were no significant relationships between self-efficacy and others basic characterizes.

**Table 2)** Distribution of the participants in terms of their responses to the demographic questions (N=104)

Items	Difficult N (%)	Very difficult N (%)	Easy N (%)	Very easy N (%)
SE1	5 (4.8)	28 (26.9)	20 (19.2)	47 (45.2)
SE2	15 (14.4)	38 (36.5)	21 (20.2)	24 (23.1)
SE3	16 (15.4)	36 (34.6)	27 (26.0)	20 (19.2)
SE4	10 (9.6)	28 (26.9)	26 (25.0)	27 (26.0)

SE1. How do you perceive participating in physical activity and sports each day? SE2. How do you perceive attaining a natural curvature of the spine? SE3. How do you perceive checking your book bag weight? SE4. How do you perceive paying attention to ergonomically posture.

**Table 3)** Relationship between self-efficacy and basic characteristics (n=104)

Variables	Self-efficacy score (4-16)			P-value *
	Low (4 – 6)	Moderate (7- 13)	High (14 – 16)	
<b>Father’s job</b>	N (%)	N (%)	N (%)	<b>0.019</b>
Employed	10 (11.2)	64 (71.9)	15 (16.9)	
Unemployed	0 (0.0)	0 (0.0)	2 (100.0)	
Retired	0 (0.0)	6 (100.0)	0 (0.0)	
<b>Mother’s job</b>				0.913
Employed	2 (9.5)	16 (76.2)	3 (14.3)	
Housewife	8 (10.3)	56 (71.8)	14 (17.9)	
<b>Father’s education</b>				0.149
Illiterate/primary	0 (0.0)	2 (66.7)	1 (33.3)	
Secondary	8 (16.7)	28 (58.3)	12 (25.0)	
Higher	2 (5.6)	30 (83.3)	4 (11.1)	
<b>Mother’s education</b>				0.811
Illiterate/primary	0 (0.0)	5 (83.3)	1 (16.7)	
Secondary	6 (10.5)	39 (68.4)	12 (21.1)	
Higher	4 (14.8)	19 (70.4)	4 (14.8)	
<b>Presence of back pain</b>				<b>0.048</b>
Yes	5 (22.7)	15 (68.2)	2 (9.1)	
No	6 (7.6)	58 (73.4)	15 (19.0)	
<b>Transmit tool</b>				0.900
Walking	2 (10.0)	15 (75.0)	3 (15.0)	
Public	0 (0.0)	4 (100.0)	0 (0.0)	
Own car	5 (13.2)	27 (71.1)	6 (15.8)	
Service	4 (10.3)	27 (69.2)	8 (20.5)	

\*  $\chi^2$  test for categorical variables. Statistically significant relationship (P<0.05).

## Discussion

This descriptive study intended to assess the self-efficacy toward healthy spine-related behavior among 5<sup>th</sup>-grade girls in elementary schoolchildren context. Particular objective was paid attention to reveal the relationship

According to Bandura (2000), self-efficacy influences the degree to which individuals pay attention to opportunities or impediments in their life circumstances and it have been found to be the most important predictors of a range of health behaviors in a diverse range of studies [10,13,14].

The findings of the descriptive analysis demonstrated that participants had a low level of self-efficacy. For example, the minority of the participants believed that checking their book bag weight is easy. Likewise, the minority of the participants reported that attaining a natural curvature of the spine is easy for them. Similarly, about one fourth of the studied students accepted confidence to pay attention to ergonomically postures. These results were in relative compatible with the finding of previous studies [8]. However, about half of the pupils perceived that they could to participate in physical activity and sports each day, which is not in line previous studies [8, 9,15]. This result was in consistent with previous study that revealed a significant association between self-efficacy and physical activity level of the participants ( $p=0.008$ ) [18].

Our results clarified that low back pain was frequent in proposed schoolchildren which was in consistent with existed evidence [8, 12,16,17]. In addition, presence of low back pain and individual basic characterizes including father's job were independently associated with self-efficacy. These findings were similar to our previous study [8]. Association between self-efficacy and low back pain may be explained by the idea that spine-related

behavior is one of the most important risk factors of low back pain. Furthermore, self-efficacy is an significant predictor of spine-related behavior. Similarly, father's job can provide welfare for family members and affect to children's self-efficacy.

In addition to some strong points, the current study had some limitations. As we only collected data from the 5<sup>th</sup>-grade girls' schoolchildren and others pupils did not participate in this research, the generalizability of findings may be limited. Second, presence of low back pain report was limited to during last week, because we intended to reduce recall bias. Furthermore, the data were gathered through self-reporting that might be caused bias information. However, these findings provide additional evidence that self-efficacy could relate to low back pain. In addition, the present study may be attributed to design suitable interventions to decrease low back pain by promoting self-efficacy.

## Conclusion

The findings reveal that self-efficacy was significantly associated with LBP and father's job. As other basic characterizes did not show statistically significant relationship with self efficacy in this target population, further researches are needed to assess such relationship among multi central and larger schoolchildren's populations. However, the results showed that there were not high perceived self-efficacy among participants. In addition, this study represented that perceived self-efficacy toward healthy spine-related behavior should be promoted among schoolchildren by applying potential change strategies in educational program.

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**Author contribution:** ZAC: was the main investigator. She collected. She took responsibility for conducting the study and the integrity and the accuracy of the data collection. She wrote the first draft of the manuscript SST supervised all stages of the study. Am took part in analyzing the data. SST, ZAC and AM read and approved the final manuscript.

**Ethical permission:** This study was approved by the ethics committee of Tarbiat Modares University. with ethics code of IR TMU REC 1396-727.

**Conflict of Interest:** The authors declare that they have no competing interests.

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