ISSN: 2476-5279; International Journal of Musculoskeletal Pain Prevention. 2021;6(4): 588-594.

Low Back Pain Preventive Intervention in Clinical Workers in Lorestan Hospitals in Iran

ARTICLEINFO

Article Type
Original Research

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How to cite this article

Moazemi Goodarzi A., Tavafian SS., Delshad MH. Low Back Pain Preventive Intervention in Clinical Workers in Lorestan Hospitals in Iran. IJMPP. 2021; 6(4): 588-594.

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Article History
Received: July 11, 2021
Accepted: Sep11,2021
ePublished: Oct 9, 2021

ABSTRACT

Aims: Low Back Pain (LBP) is a serious and prevalent health problem, especially worldwide. This study evaluated the impact of an interventional program on promoting the knowledge, attitude and practice among a clinical worker to prevent low back pain in Lorestan hospitals, Iran.

Method and Materials: in this interventional study, 80 clinical workers who were working in the two hospitals of Lorestan province in Iran, were divided randomly into an intervention (N=40) and control (N=40) group.

The intervention group took part in the itervenional program while the control group received no intervention. The demographic questionnaire and a researcher - made questionnaire were used.

Findings: In all 40 clinical workers in each group of intervention with mean age of 33.18±6.025 years and control group with mean age of 31.40± 6.732 years took part in the study. The mean scores of knowledge, in the control group versus intervention group, immediately after intervention, 3-, and 6 - months follow-up were 13.001.79± vs 13.28 ±2.21, 13.03±2.15 vs 14.931.28±, and 13.03±2.15 vs 14.38±1.67 respectively which were significant in two time points of 3- and 6- month follow ups (P<0.05) . Regarding, the mean scores of attitude the scores of control versus intervention group were 39.386.45± vs 40.136.86±, 39.55±6.11vs 43.98±4.81, and 39.435.64± vs 43.605.74±, respectively; and for behavior the scores in control vs intervention group were 16.966.90± vs 15.054.52±; 16.05± 4.5 vs 18.35±5.30, and 16.00±4.60 vs 18.134.80±, respectively.

Conclusions: This study showed that the interventional program is an effective intervention to promote preventive behavior of LBP in clinical workers.

Keywords: Low Back Pain, Interventional Program, knowledge, Attitude, Behavior.

Introduction

Work-related Musculoskeletal Disorders (WMSD) are important health problems in the health system[1]. It has been argued that Low Back Pain (LBP) is a serious, highly prevalent health problem among all countries, especially in developing countries [2]. There is a linear dose–response relationship between preventive behavior and LBP [3]. Given that occupational traumatic behaviors are the main cause of LBP in the clinical workers, training healthy behavior can reduce these disorders and strongly are recommended [4].

Previous study revealed that different factors are involved in the incidence of LBP in clinical workers especially some staffs who do heavy works like patients transferring in the hospital [5].

Several studies have shown the effectiveness of knowledge, attitude and behavior promotion based educational interventions on prevention of LBP [6-7]. Previous evidence reported that negative attitudes towards LBP preventive behaviors could leading to pain severity and disability. On other hands positive beliefs towards LBP preventive behaviors could promote healthy LBP preventive behaviors and prevent LBP [6].

As to our knowledge there is no study regarding the impact of educational program on knowledge, attitudes and

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[DOR: 20.1001.1.24765279.2021.6.4.5.3]
[DOI: 10.52547/ijmpp.6.4.588]

behaviors of clinical workers in Lorestan hospitals regarding LBP preventive behaviors , this study aimed to evaluate the effects of an designed educational program on promoting the knowledge, attitude and behaviors of clinical workers regarding LBP prevention in Lorestan hospitals, Iran.

Method and Materials

In this interventional study, 80 clinical workers who were working in the two hospitals of Lorestan province in Iran were randomly allocated into an intervention (N=40) and control group (N=40). The intervention group participated in an educational program while the control group received no intervention. The demographic questionnaire and a researcher - made questionnaire were used to be completed by the participants.

Inclusion criteria were as: being clinical worker in the medical wards of the selected hospitals, being able to attend in the educational program , and having satisfaction with participating in the study. Excluding criteria were as suffering from any illness or problem that prevents the subjects from performing the right behaviors, leaving the hospital due to any reason, dismissal from service, job leaving due to pregnancy and maternity care, and suffering from congenital anomalies in the their spine.

All procedures of the study were explained to the potential participants. The informed consent form was signed by them. Ethics Committee of Tarbiat Modares University approved the study (Code No: IR.MODARES. REC.1398.203).

Based on the need assessment of the clinical workers who took part in intervention group as well as literature review regarding LBP prevention educational programs that were performed at the initial of the study, the educational intervention was designed for four sessions, each 45 - minute session.

The most important topics of the 1st session included the anatomy of normal vertebra, the ways of keeping right postures of the vertebra and the factors which may cause additional pressure on it and leading to LBP. The 2end session was about promoting knowledge of the clinical workers regarding the ways of LBP prevention on while working in the hospital. The third session was about improving attitudes of the clinical workers regarding LBP prevention ways. In the 4th session all clinical workers practiced the right preventive behaviors and learned how they could keep right postures of their vertebra. All these topics were explained ad practiced through question/answer techniques and group discussion, role-playing and film screenings. The interventional program was just applied for intervention group.

To collect data a demographic questionnaire as well as a researcher – made questionnaire consisted of subscales of knowledge, attitude and behavior questions were used. This scale included 38 items with 3-option likert system from never to always which scored 1 to 3 and the high scores indicated better situation expect for attitude subscale that included 9 items with 5-option likert system from completely disagree to completely agree scored 1 to 5 and the high scores indicated better situation.

The third tool was Visual Analog Scale (VAS) that was used for measuring LBP. VAS is a one-dimensional scale to measure pain severity. Using VAS, the clinical worker were asked to select a number which showed their pain severity. In this scale, number 10 means severe pain and number 0 means no pain. The Validity and reliability of VAS are reported in previous evidences [8, 9].

In this study 40 participants were considered for each group of Intervention and control. Firstly, 80 eligible participants were selected randomly which subsequently were divided

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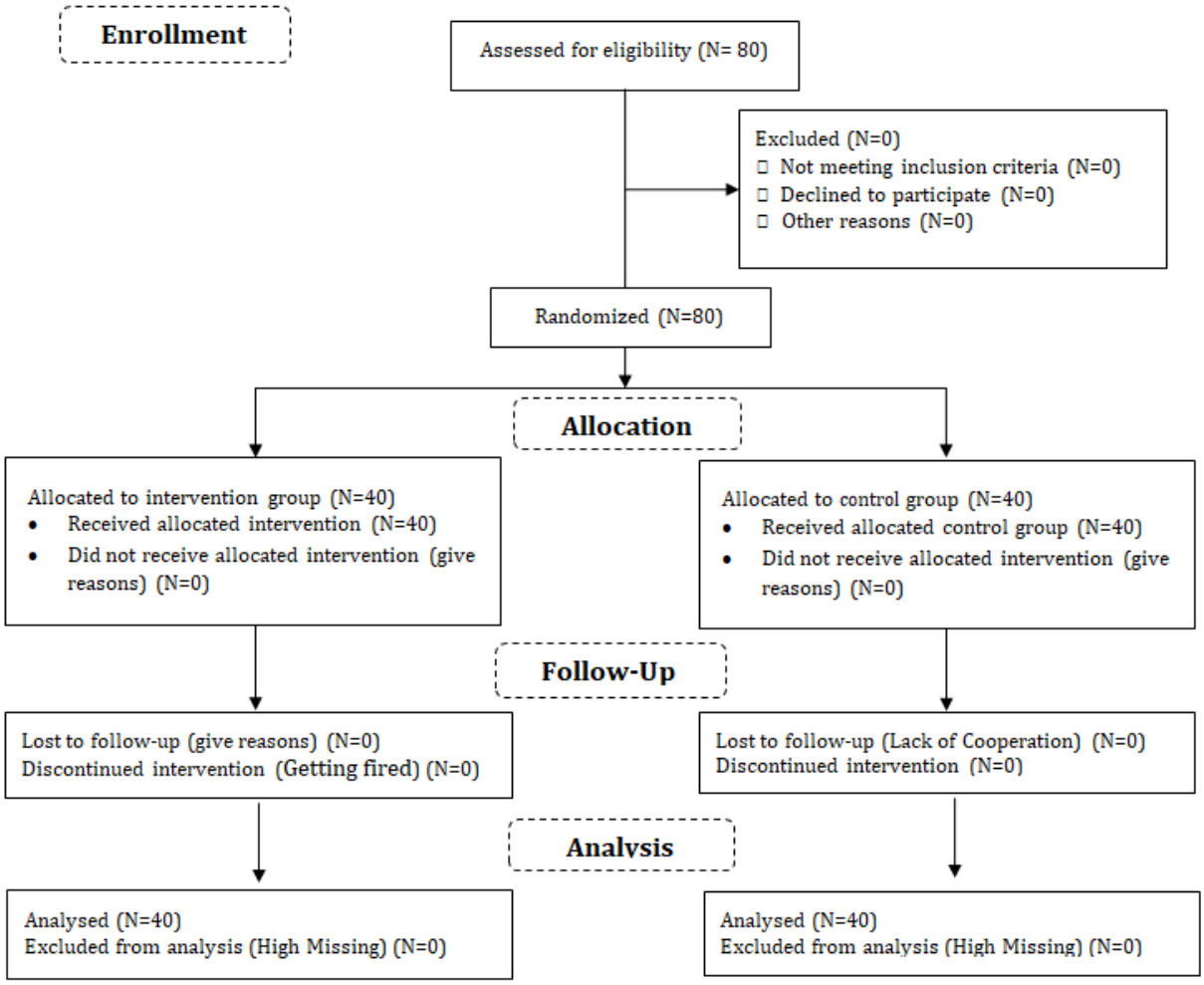

Figure 1) Follow diagram of study

into the intervention and control group randomly. Figure 1 show the random allocation and follow ups of the participants during 6 months. The participants of both groups completed the questionnaire at four time points of baseline, immediately post intervention, 3 - and 6- month follow ups. Demographic data was completed just at initial of the study.

In order to analyze the collected data, the data were entered into the SPSS, version 21 (IBM company, USA). Descriptive and analytic tests were used to analyze data.

Findings

Totally, 80 participants including 40 clinical workers with a mean age of 33.18±6.02 in the intervention group and 40 clinical workers with a mean age of 31.40± 6.73 in the control group completed the study. The majority of the participants in the intervention group (N=33; 82.5%) and the control group (N=9 ; 72.5%) were female. Table 1 shows demographic characteristics. There was no significant difference between the two groups at baseline (P>0.05).

Table 2 shows the comparison of the studied variables of knowledge, attitude and preventive behaviors of the participants of both groups at initial of the study as well as 3- and 6-month follow ups. Accordingly, there was no significant difference between the two groups at the beginning of the study. However, the two groups were different

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Table 1) Demographic characteristics of the studied clinical workers of both groups at initial of the study

Group Variable	Intervention (N=40) N (%)	Control (N=40) N (%)	P-value [a]
Gender			
Male	7(17.5)	11(27.5)	0.42
Female	33(82.5)	29(72.5)	
Age (Yrs)**			
<= 30	13(32.5)	18(45)	0.21
39- 30	19(47.5)	18(45)	
40 and more	8(20)	4(10)	
Educational level			
Up Diploma	1(2.5)	-	0.73
license	34(85)	36(90)	
Master	5(12.5)	4(10)	
Economic status			
Up to $150	2(5)	5(12.5)	
Up to $200	17(42.5)	14(35)	0.91
Up to $300	10(25)	17(42.5)	
>$300	11(27.5)	4(10)	
Marriage status			
Single	27(67.5)	23(57.5)	0.24
Married	13(32.5)	17(42.5)	
work experience (Yrs)			
< 5	12(30)	17(42.5)	
5-10	10(25)	14(35)	
10-15	6(15)	5(12.5)	0.24
15-20	10(25)	3(7.5)	
20-25	1(2.5)	0 (0.00)	
25-30	1(2.5)	1(2.5)	
Working shift			
Morning shift	8(20)	5(12.5)	0.38
Night shift	29(72.5)	34(85)	
LONG day shift	3(7.5)	1(2.5)	
Hospital ward			
Internal / surgery	4(10)	8(20)	
Emergency	11(27.5)	12 (30)	
Maternity	8(20)	9(22.5)	0.12
ICU	2(5)	6(15)	
CCU	5(12.5)	2(5)	
Women and children	3(7.5)	2(5)	
Dialysis	7(17.5)	1(2.5)	

[a] chi square tests. ** Years

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Table 2) Comparison of knowledge, attitude and preventive behaviors of the studied participants of both groups at 3 time points

Time	Groups	Baseline		3-minth follow up		6-month follow up		P value
		Mean	*SD	Mean	SD	Mean	SD	
knowledge	Intervention	13.28	2.21	14.93	1.28	14.38	1.67	<0.001
	Control	13.01	1.79	13.08	1.71	13.03	2.15	0.982
P value		0.544		<0.001		0.002		
Attitude	Intervention	40.13	6.86	43.98	4.81	43.60	5.74	<0.001
	Control	13	1.79	13.08	1.71	13.02	1.81	0.988
P value		0.616		<0.001		0.002		
Behavior	Intervention	15.17	5.92	18.35	5.30	18.13	4.80	<0.003
	Control	16.96	6.90	16.05	4.52	16.00	4.60	0.906
P value		0.508		0.039		0.042		

* Standard deviation

Table 3) Comparison of pain severity among the studied participants of both groups at 3 time points

TIME	Groups	Baseline		3-minth follow up		6-month follow up		P-VALUE
		Mean	*SD	Mean	SD	Mean	SD	
Pain severity	Intervention	5.20	1.47	2.83	1.31	2. 25	1.9	100.0>
	Control	5. 28	1.37	5.45	1.66	5.55	1.66	0. 208
P value		0.815		<0.001		<0.001		

* Standard deviation

significantly at 3- and 6- month follow up (P< 0.001) Table 3 shows the comparisons of pain severity in both groups at 3 time points of before intervention 3- and 6- month follow ups. As this Table shows the two groups were the same at the beginning of the study but they were different significantly at 3- and 6- month follow ups (P<0.001).

Discussion

This study assessed the effectiveness of a designed educational program on promoting preventive LBP behavior among clinical workersof Lorestan hospitals in Iran. The findings showed a better rate of preventive LBP in the intervention group compared to the other group.

Furthermore, after 6 months the knowledge of the participants in the intervention group was promoted and their attitude and behaviors were improved.

The present study verified that the designed educational intervention were effective on promoting knowledge, attitude and behaviors of clinical workers in intervention group. These results are in line with the results of the previous studies [10, 11]. In addition , the existed study [12], Which was conducted in 2017 regarding the effect of back school workshops on the level of knowledge and attitude of nurses , showed that after training program a significant difference was seen in knowledge and attitude of the participants that is consistent with the results of present study.

Furthermore the results of the present study regarding the effect of education program on the behavior of the participants in

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intervention group are in the line of previous study[13] that showd the educational program could improve LBP preventive behaviors of the women.

In the present study the attitude of the intervention group was significantly improved after taking part in intervention program. In this regard, previous studies [11,13] have supported this finding of the present study in terms of significance improvement of attitude of the participants after the intervention. In the study of Kazemi et al.[11], between the two methods of face-to-face and virtual education, the change in attitude in the direct education method in the first trimester was due to the direct relationship between educator and learner and the possibility of more exchange, although the effect of virtual education on longer evaluation, has been obtained because of virtual education benefits such as greater accessibility and lower implementation costs. The findings of the present study revealed that it have been more successful in changing attitudes among the participants because of taking part in educational classes and removing possible barriers through questioning/answering so that they could do the preventive behavior easily. of course, in Kazemi study [11] it was shown that the use of virtual education as a supplement and reminder of training has also played an effective role in the sustainability of training. The findings of the present study showed that behavior of the intervention group was significantly improved. Regarding this finding it could be argued that this improvement is due to knowledge promotion and attitude improvement. This study verified that improvement of LBP behaviors could reduce LBP among the participants in intervention group. It could be discussed that this result is due to educational program, because in other group that did not receive any education, their LBP severity did not reduce at all.

Although this study has its own strength points like its effectiveness on promoting LBP preventive behavior which was supported by other studies, there are some limitations like collecting data through self-reporting as well as small sample size. Therefore, doing more researches in near futures without these limitations are strongly recommended.

Conclusion

The findings if this study revealed that the designed intervention program can be effective for improving knowledge, attitude and behaviors of clinical workers regarding LBP preventive behaviors . However, these findings should be evaluated in future studies with larger participants who took part from multi centers.

Acknowledgment

The authors thank the research deputy of Tarbiat Modares University (TMU) for its financial support. Furthermore, the authors would like to thank all participants who took part in the study.

Authors' contribution

AMG conducted all stages of the study. SST supervised the study. MHD advised the study.

Conflict of Interests

The authors declare that they have no competing interests.

Ethical Permission

This study was done after getting permission from the Ethics Committee of Tarbiat Modares University (Code No: IR.MODARES.REC.1398.203).

Funding/Support

This paper is a MSc thesis in Tarbiat Modares University and supported by research deputy of the university.

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