

# Nurse Manager's Emotional Intelligence in Educational Hospitals: A Cross-sectional Study from the West of Iran

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## ABSTRACT

**Introduction:** Identifying and promoting nurse managers' emotional intelligence is critical in order to promote the quality of health care and educational services. Effective managers deploy emotional intelligence for control and management of their own and employees' feelings and emotions in order to achieve organisational goals. Personal characteristics of managers could also influence their management, leadership and quality of services at any organisation and personnel's performance as well.

**Aim:** This study aimed to investigate nurse managers' emotional intelligence in educational hospitals of Hamadan University of Medical Sciences.

**Materials and Methods:** A cross-sectional study was conducted with 370 nurse managers of five educational hospitals of Hamadan University of Medical Sciences, Iran in 2016. Data were collected using inspired Bradberry's Emotional

Intelligence Questionnaire and were analysed by descriptive and inferential statistics using Pearson correlation coefficient test, t-test and Variance analysis.

**Results:** Emotional intelligence of nurse managers was excellent with good ability level 216 (58.3%), moderate ability level 134 (36.2%) and low and very low ability level 20 (5.4%). The mean score of nurse managers' emotional intelligence was  $80.46 \pm 6.7$  which interpreted good ability level. There was significant relation between mean score of nurse managers' emotional intelligence and gender, age, marital status, number of children, educational level, work experience, managerial work experience, job and life satisfaction ( $p=0.04$ ).

**Conclusion:** The results indicate a significant and positive relationship between emotional intelligence and some demographic characteristics. Moreover, nursing management boards should work on all aspects of emotional management and consider demographic characteristics for selection of managers.

**Keywords:** Empathy, Self-awareness, Self-regulation, Self-motivation, Social skill

## INTRODUCTION

Intelligence in human is multifaceted including physical intelligence; the ability to control skillfull movements with the brain and nervous system control, intellectual intelligence; the ability of problem solving and academic achievement, spiritual intelligence; control and management of beliefs and values and emotional intelligence; control and management of their own and others' emotions [1].

Emotional intelligence or ability of understanding, identifying feelings in self and others [2] However, Thorndike RL et al., proposed social intelligence or the ability to understand and manage human relations [3]. Later, Shearer CB et al., proposed the concepts of interpersonal and intrapersonal intelligence that underpinned the work of Salovey and Mayer in the field of emotional intelligence [4].

The emotional intelligence is divided into four areas; identification of emotions in own and others, the ability to understand emotions, managing emotions and applying emotions [5]. People with moderate intellectual intelligence and high emotional intelligence are more successful rather than the people with high intellectual intelligence and low emotional intelligence [2,6].

Emotional intelligence is almost a new concept in the management area with the effect on personnel's more appropriate coping with the work life tensions and challenges and consequently organisational performance [7]. Effective managers deploy emotional intelligence for control and management of their own and employees' feelings and emotions in order to achieve organisational goals [8]. Managers with low emotional intelligence could create only an atmosphere of fear and anxiety in the organisation which leads to short-term and ephemeral productivity [9].

Individual and social capabilities of emotional intelligence are widely applied in management. Individual capability of self-awareness (ability to perceive accurately the emotions when happened) and self-management (ability to control the emotions). Social capability includes social awareness (ability to identify and understand the others individual and group emotions) and relationship management (positive and constructive management of interactions) [10].

Managers with high self-awareness and self-management could create a trustful and fair environment and almost free of conflict and damaging competition with accurate perception of emotions and control and management of them as well [11]. Managers with high social awareness and relationship management have also better ability to maintain good and fair relations with others and resolve the conflicts [12]. Moreover, high emotional intelligence for managers seems crucial in order for effective management, increasing productivity, maintaining human resources at all levels of the organisation and provide a space for sharing information, trust and taking risk [13,14].

Nursing managers are responsible for delivery of high quality nursing care [15]. Moreover, their capabilities and efficiency could improve and assure the quality nursing care with creation and maintenance of a good professional job environment for promotion of nurses' performance [16,17]. Personal characteristics of managers could also influence their management, leadership and quality of services at any organisation and personnel's performance as well [18,19]. Emotional intelligence is a predictor of leadership and management success [20]. This study aimed to assess emotional intelligence in nurse managers of educational hospitals of Hamadan University of Medical Science.

## MATERIALS AND METHODS

A cross-sectional study was conducted using the Iranian version of Bradberry's emotional intelligence questionnaire [10] on 370 nursing managers of educational hospitals of Hamadan University of Medical Sciences, Iran during February to May in 2016. Data were collected by a 41-question questionnaire consisting of two parts of demographic characteristics and emotional intelligence items. The part of demographic characteristics included 13 questions about age, gender, marital status, number of children, educational level, indigenous work experience, managerial work experience, income, employment type, job-related complications, job satisfaction, and life satisfaction.

The part of emotional intelligence consist of a 28-question questionnaire that measured emotional intelligence in four dimensions; 1-self-awareness (6 questions), 2-self-management (9 questions), 3-social awareness (5 questions) and 4-relationship management (8 questions). The questionnaire scale was included in "never=1", "rarely=2", "sometimes=3", "usually=4", "almost always=5" and "always=6". Total score and dimensions scores of emotional intelligence questionnaire were calculated to 100 for the simplicity of the comparison and interpreted in high ability level (90-100), good ability level (80-89), average ability level (70-79) with need to strengthen, weak level (60-69), very weak (less than 59) or alert status.

Emotional intelligence questionnaire has been reviewed and approved by converge correlation coefficient with emotional intelligence test equals to  $r=0.67$  and  $p<0.01$  and Cronbach's alpha 0.83 validity and reliability [21]. In this study, reliability of the Emotional Intelligence Questionnaire was assessed by test-retest ( $r=0.87$ ).

This study was approved by the research council of Hamadan University of Medical Sciences (No. P/16/35/9/5417 dated Jan. 24, 2015). Purposes of the study, the confidentiality and being anonymous of the questionnaire and voluntary participation of the company in the research was explained to nurse managers. Willingness to complete the questionnaire constitutes informed consent to participate in the research. Inclusion criteria were having at least one year work experience, willingness to participation and completing the questionnaire. Incomplete questionnaires were excluded.

The questionnaires were presented for all nurse managers at any centre including matrons, supervisors, head nurses, and the people in charge of morning, afternoon and night working shifts in each ward and collected after a maximum of one week. In this research, based on a similar study, the average co-relation co-efficient between emotional intelligence and leadership styles is equal to 0.7 and in this research, the coefficient calculated was minimum 0.6 [22]. Therefore, in the Type I error  $p=0.05$  and the ability to test of  $1-p=0.9$ , at least 349 of these nurse managers are required. Taking into account the 15% loss, there were 400 subjects of research samples.

Out of 400 questionnaires distributed among 370 nursing managers, finally 370 questionnaires were completed and studied. Data were analysed by SPSS Version 16 software and using descriptive and inferential statistics (mean, standard deviation, Pearson co-relation co-efficient, T-test) and significant lower levels of 0.05.

## RESULTS

Out of the 400 questionnaires provided to nurse managers, 370 questionnaires were completed and received (response rate of 92.5%). The mean age was  $41 \pm 5.1$ -year-old considering 291 (78.6%) women and 79 (21.4%) male. Total 305 (82.4%) Nurse Managers were married and 180 (48.7%) had two or more children. Most of the nurse managers 329 (88.9%) were bachelor's degree and the rest master's degree. Majority 313 (84.6%) of Nurse managers were

Demographic characteristics	Frequency		
	n	%	
Age (year)	<30	9	2.4
	30-39	119	32.2
	40-49	218	58.9
	>40	24	6.5
Gender	Male	79	21.4
	Female	291	78.6
Marital status	Married	305	82.4
	Single	65	17.6
Number of children	0	61	16.5
	1	129	34.9
	2	155	41.9
	>2	25	6.8
Educational level	Bachelor	329	88.9
	Master	41	11.1
Native	Yes	313	84.6
	No	57	15.4
Work experience (year)	<10	29	7.9
	10-19	260	70.3
	>19	81	21.6
Managerial work Experience (year)	<10	139	37.6
	10-19	210	56.7
	>19	21	5.7
Income (Million Rials)	<15	43	11.6
	15-20	287	77.6
	>20	40	10.8
Employment type	Contract	279	75.4
	Tenure	91	24.6
Job-related complications	Yes	80	21.6
	No	290	78.4
Job satisfaction	High	18	4.8
	Moderate	296	80
	Low	56	15.1
Life satisfaction	High	37	10
	Moderate	302	81.6
	Low	31	8.4

**[Table/Fig-1]:** The frequency of nursing managers according to demographic characteristics.

native, had work experience between 10-19 years 260 (70.3%) and 210 (56.7%) have also experience of management between 10-19 years. Most of Nurse Managers were head nurse or charge nurse 327 (88.4%) and the rest 43 (11.6%) matron or supervisor. The mean of income level of Nurse Managers was  $10.59 \pm 0.25$  million Rials and most of them 287 (77.6%) had between 15-20 million Rials income. Most 279 (75.4%) of them were employed on contract basis and the rest were on tenure. Most 296 (80%) of Nurse Managers had moderate job satisfaction and also moderate life satisfaction 302 (81.6%). 333(90%) of Nurse Managers had not passed any educational courses related to emotional intelligence [Table/Fig-1].

In general, emotional intelligence scores of nurse managers was assessed excellent 22 (5.9%), good 194 (52.4%), moderate 134 (36.2%), weak 19 (5.1%) and very weak 1 (0.3%). Nurse Managers' emotional intelligence mean score was also  $80.46 \pm 6.7$  which was interpreted at good ability level.

Nurse managers' emotional intelligence score at the dimension of self-awareness was assessed excellent 81 (21.9%), good 138 (37.3%), moderate 103 (27.8%), weak 15 (4.1%) and very weak 33 (8.9%) ability levels. Nurse Managers' emotional intelligence mean

Emotional intelligence dimensions	Emotional intelligence ability level									
	Excellent (90-100)	Good (80-89)	Moderate (70-79)	Weak (60-69)	Very weak (10-59)	Total	Mean±SD	Interpretation level	Max	Min
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)				
Self-awareness	81 (21.9)	138 (37.3)	103 (27.80)	15 (4.1)	33 (8.9)	370 (100)	79.71±12.55	Moderate (70-79)	98	39
Self-management	135 (36.5)	112 (30.3)	76 (20.5)	12 (3.2)	35 (9.5)	370 (100)	80.87±15.14	Good (80-89)	99	36
Social awareness	125 (33.8)	80 (21.6)	114 (30.8)	37 (10)	14 (3.8)	370 (100)	80.67±12	Good (80-89)	98	36
Social skills	132 (35.7)	94 (25.4)	94 (25.40)	24 (6.5)	26 (7)	370 (100)	80.59±14.3	Good (80-89)	98	36
Emotional intelligence	22 (5.9)	194 (52.4)	134 (36.2)	19 (5.10)	1 (0.3)	370 (100)	80.46±6.7	Good (80-89)	95	50

**[Table/Fig-2]:** Frequency of nursing managers according to emotional intelligence score and its dimensions.

Demographic characteristics		Total score of emotional intelligence		Self-awareness		Self-management		Social awareness		Social skills	
		Mean±SD	Tests	Mean±SD	Statistical T.	Mean±SD	Statistical T.	Mean±SD	Statistical T.	Mean±SD	Statistical T.
Age	<30	80.0±3.8	Rp=0.3 p=0.001	82.3±6.7	Rp=0.42 p=0.41	76.6±16.2	Rp=0.23 p=0.001	78.3±18.1	Rp=0.13 p=0.001	82.6±11.3	Rp=0.13 p=0.04
	30-39	77.3±6.7		78.1±13.3		76.1±17.1		78.7±13.6		77.1±16.2	
	40-49	81.9±6.3		80.9±12.0		82.8±13.7		81.3±10.7		82.0±13.4	
	>40	83.1±5.1		75.2±13.6		88.0±8.8		84.9±9.6		83.7±8.8	
Gender	Male	73.1±5.8	T=13.1 p=0.001	73.7±16.3	T=25.5 p=0.001	71.7±18.5	T=21.1 p=0.001	76.2±14.3	T=1.15 p=0.07	72.2±18.6	T=30.3 p=0.001
	Female	82.4±5.4		81.3±10.7		83.3±13.0		81.8±11.0		82.8±11.9	
Marital status	Married	82.2±5.3	T=74.1 p=0.04	73.6±16.0	T=6.7 p=0.001	71.1±19.6	T=17.9 p=0.001	72.9±13.7	T=18.11 p=0.001	72.3±18.8	T=16.3 p=0.001
	Single	72.1±6.3		81.0±11.2		82.9±13.1		82.3±10.9		82.3±12.4	
Number of children	0	73.9±6.1	rs=0.28 p=0.001	74.9±15.9	rs=0.05 p=0.30	74.2±18.0	rs=0.10 p=0.05	75.9±13.3	rs=0.156 p=0.04	72.2±17.8	rp=0.156 p=0.04
	1	81.9±5.5		81.6±11.5		82.6±14.0		81.2±11.2		82.1±12.3	
	2	81.2±6.4		79.4±12.0		81.7±14.0		81.21±12.1		82.2±13.3	
	2<	83.1±4.6		83.0±9.0		82.7±12.0		85.7±8.6		82.5±12.5	
Education	BS.	80.7±6.5	T= 0.28 p=0.78	79.5±12.8	T= 2.09 p=2.88	81.5±14.8	T= 1.18 p=0.27	80.7±12.0	T= 0.24 p=0.62	81.1±13.7	T= 2.73 p=0.09
	MS.	78.1±7.2		80.6±9.7		75.3±16.9		79.4±12.0		77.3±17.1	
Native	Yes	80.5±6.6	T=1.05 p=0.292	80.0±12.2	T=3.26 p=0.07	81.1±15.0	T=0.00 p=0.96	80.4±11.7	T=1.81 p=0.17	80.7±13.8	T= 1.48 p=0.22
	No	79.7±7.0		77.8±13.9		79.3±15.8		81.8±13.4		79.6±16.7	
Work experience	<10	79.0±6.5	rp =0.22 p=0.001	76.4±14.1	rp =0.04 p=0.35	82.5±12.1	rp =0.02 p=0.67	78.7±15.9	rp =0.14 p=0.04	78.3±16.4	rp =0.11 p=0.04
	10-19	79.9±6.8		80.5±12.3		79.6±16.4		79.8±11.7		80.0±14.4	
	>19	82.4±6.0		79.7±11.9		82.6±13.2		83.6±9.0		83.2±12.1	
Managerial work experience	<10	78.6±6.8	rp =0.19 p=0.001	78.8±12.9	Rp=0.01 p=0.71	79.5±15.2	rp =0.10 p=0.08	78.3±13.4	rp =0.14 p=0.04	78.6±15.8	rp =0.03 p=0.04
	10-19	82.2±5.9		81.0±11.8		81.9±15.3		83.0±10.2		82.3±12.5	
	>19	80.3±7.3		76.1±13.8		83.0±12.1		80.4±9.4		81.6±12.9	
Income (Million Rials)	<15	81.2±6.3	rp =-0.02 p=0.06	78.6±12.9	Rp=0.02 p=0.63	79.9±16.0	Rp=0.04 p=0.34	82.8±11.6	Rp=-0.03 p=0.51	83.0±12.2	rp =0.05 p=0.26
	15-20	80.3±6.5		79.8±12.5		80.6±15.3		80.2±12.0		80.3±14.2	
	>20	80.4±8.1		79.9±12.6		83.1±12.7		81.2±11.9		79.6±16.8	
Employment	Contract	79.5±7.3	F=5.19 p=0.04	79.6±12.7	F=0.02 p=0.88	80.2±15.3	F=2.17 p=0.14	80.0±12.6	F=3.22 p=0.07	79.6±15.1	F=4.98 p=0.05
	Tenure	82.3±6.1		79.8±12.0		82.9±14.4		82.6±9.5		83.4±10.9	
Job-related complications	Yes	80.4±6.8	T=0.16 p=0.68	79.7±12.8	T=0.89 p=0.34	81.5±14.4	T=2.57 p=0.10	80.4±12.1	T=0.00 p=0.96	80.1±14.5	T=0.04 p=0.82
	No	80.9±5.9		79.6±11.6		78.4±17.2		81.5±11.6		82.1±13.2	
Job satisfaction	High	81.0±7.0	RP=0.05 p=0.04	79.6±11.3	RP=0.02 p=0.65	79.5±17.2	RP=-0.04 p=0.35	83.4±9.9	RP=0.07 p=0.15	82.6±14.9	RP=0.07 p=0.88
	Mean	80.2±6.6		79.8±12.5		80.9±14.9		80.0±12.2		80.1±14.4	
	Low	81.3±6.8		77.5±16.7		83.0±11.4		81.5±12.3		81.8±9.7	
Life satisfaction	High	80.7±7.6	RP=0.99 p=0.04	80.5±11.9	RP=-0.9 p=0.85	81.9±15.2	RP=-0.00 p=0.95	78.6±13.8	RP=0.07 p=0.17	81.4±16.7	RP=-0.04 p=0.42
	Mean	80.3±6.4		79.3±12.8		80.9±15.0		80.7±11.8		80.5±14.1	
	Low	78.8±7.8		82.2±9.7		78.5±15.7		82.3±11.3		79.8±13.2	

**[Table/Fig-3]:** The correlations of demographics characteristics with means of emotional intelligence and its dimensions.

Pearson correlation coefficient and T-test was used to calculate p and T-values. Significance lower levels of 0.05 were considered significant.

rs: Spearman's Rank correlation coefficient; rp: Pearson Correlation; RP: Pearson Correlation; F: Fisher's exact test; T: Independent t-test

score at the dimension of self-awareness was also 79.71±12.55 which is interpreted at moderate ability level.

Nurse managers' emotional intelligence score at the dimension of self-management was assessed excellent 135 (36.5%), good 112 (30.3%), moderate 76 (20.5%), weak 12 (3.2%) and very weak 35 (9.5%) ability levels. Nurse Managers' emotional intelligence mean

score at the dimension of self-management was also 80.87±15.14 which is interpreted at good ability level.

Nurse managers' emotional intelligence score at the dimension of social awareness was assessed excellent 125 (33.8%), good 80 (21.6%), moderate 114 (30.8%), weak 37 (10%) and very weak 14 (3.8%) ability levels. Nurse Managers' emotional intelligence mean

score at the dimension of social awareness was also  $80.67 \pm 12$  which is interpreted at good ability level.

Nurse managers' emotional intelligence score at the dimension of social skills was assessed excellent 132 (35.7%), good 94 (25.4%), moderate 94 (25.4%), weak 24 (6.5%) and very weak 26 (7%) ability levels. Nurse Managers' emotional intelligence mean score at the dimension of social skills was also  $80.59 \pm 14.3$  which is interpreted at good ability level [Table/Fig-2].

In general, mean score of nurse managers' emotional intelligence had no significant correlation with demographic variables such as education level, native, income, work place, job satisfaction. In contrast, there were significant correlation for some of the demographic characteristics such as age, gender, marital status, number of children, work experience, managerial work experience, employment type and life satisfaction ( $p=0.04$ ). However, nurse managers' emotional intelligence increased by increasing age, number of children, work experience and managerial work experience.

In the aspect of self-awareness of emotional intelligence, mean scores of nurse managers had no correlation with demographic variables except marital status and gender ( $p=0.001$ ).

In the aspect of self-management of emotional intelligence, mean scores of nurse managers had no correlation with demographic variables except for gender, age, marital status, work experience, job satisfaction and number of children ( $p=0.04$ ), which means mean score of self-management aspect was more in female, single, with children and older nurse managers.

In the aspect of social awareness of emotional intelligence, mean scores of nurse managers had no correlation with demographic variables except for age, marital status, number of children, work experience and managerial work experience ( $p=0.001$ ) which means mean score of social awareness was more by increasing age, number of children, work experience and managerial work experience and single nurse managers.

In the aspect of social skills of emotional intelligence, mean scores of nurse managers had no correlation with demographic variables except for gender, age, marital status, number of children, work experience and employment type ( $p=0.04$ ) which means, the mean score of social skills was more at female, older, number of children, single and more work experience [Table/Fig-3].

## DISCUSSION

The mean of nurse managers' age was  $41 \pm 5.1$ , which is in agreement with some of the studies [19,22] in the last two decades of nursing, education has been developed in developing countries and increased hiring of new graduates of these programs. The majority of nurse managers (291, 78.6%) were women, which is consistent with the results of Tyczkowski B et al., study [20]. Nursing still is considered to be a feminine job in the developing countries. According to the majority of women in nursing profession, women are more present in different management levels. Most (82.4%) nurse managers were married that is in line with another study [18] probably because they have more work experiences, income and age. Most (88.9%) of nurse managers held bachelor's degree in nursing that is consistent with some studies [22] in developing countries like Iran. Nursing education and profession still is new especially in postgraduate education. Moreover, most of graduates in nursing master and PhD have employed in higher education institutions due to the expansion of nursing education in recent years. Most of nurse managers had work experience more than 10 years that is in line with similar studies [18]. Moreover, nursing management in educational hospitals has increased considering work experience and other merits as a meritocracy criteria for nurse manager selection as well.

In this research, emotional intelligence of nursing managers was in good ability level, which is consistent with the results of Tyczkowski B et al., study on nurse managers working in six large Midwestern health systems [20]. Good emotional intelligence buffers stress, reduces anxiety, promotes effective communication and improves performance [23,24] which could be essential for management and job success.

In this study, emotional intelligence in women was more than men that is consistent with results of Jorfi H et al., [22]. However, Yoke LB et al., found no significant differences among emotional intelligence levels and male and female's nurse managers [21]. Mankus AM et al., also believes women reported greater voluntary and involuntary attention to emotion than men [25]. Moreover, Landa JMA et al., in their study on nurses did not find any significant difference between emotional intelligence with gender and marital status that is in line with our results [26]. Higher emotional intelligence in women could be due to the ability to express emotions and empathy and interpersonal relationships in women rather to men.

Our results showed that emotional intelligence will be promoted with increasing age that is in line with some studies [22]. Age could be an effective factor during life to gain more self-awareness, self-management, social awareness and social skills in most people. Our results also showed a significant difference between emotional intelligence and work experience of nurse managers that is in line with results of Van Dusseldorp LR et al., [27] and Yoke LB et al., study on teachers [21]. Increasing emotional intelligence could be resulted from the increasing age and experience.

Our results showed that married nurse managers had higher emotional intelligence that is in line with the results of Gharahhajlou JE et al., study on high school English teachers [28]. The higher emotional intelligence of married people may be due to sensory justifications. Our results found no significant relationship between emotional intelligence and income levels that is in line with results of Mankus AM et al., study on emotional intelligence and socioeconomic status [25].

Our results did not found any relationship between emotional intelligence and education level that is not in line with findings of Kumar JA et al., study on polytechnic lecturers in Malaysia and Besnson G et al., study results on bachelor's nursing student [29,30]. Indeed, education level could not increase emotional intelligence lonely. Another finding of this study was life and job satisfaction among nurse managers with higher emotional intelligence that is in line with results of Gülerüz G et al., study on the job satisfaction and emotional intelligence of nurses [31]. Emotional capabilities make appropriate responses facing with the everyday events with positive attitude and emotion to the events resulting in satisfaction with physical and mental health. Moreover, Landa JMA et al., also found that emotional intelligence could be a support element in nurses' stress and increase job and life satisfaction [26]. Consequently, the people with high emotional intelligence are often organised, friendly, successful, motivated and optimistic.

## LIMITATION

Generalisation of the results is restricted by limited number of nurse managers and only one province of Iran. It is suggested that further research should be conducted to study nationwide or in a larger population.

## CONCLUSION

Nurse Managers had good ability level in emotional intelligence in general. They had also good ability level in aspects of self-management, social awareness and social skills. However, nurse managers had moderate ability level in aspect of self-awareness of emotional intelligence. Consequently, management boards should work on all aspects of emotional management and consider demographic characteristics for selection of nurse managers.



## Contributors

Ali Bikmoradi contributed to the conception and design of the study, conducted the survey, analysed and interpreted the results and drafted the manuscript. Fatemeh Abdi, Yadollah Hamidi and Naser Farahmand Moqadam contributed to the design of the study. Alireza Sullana contributed to the interpretation of results and drafted the manuscript. All authors contributed to the critical revision of the manuscript and approved the final version for publication.

## Ethical considerations

The authors declare the adherence to all ethical consideration during research, data analysis and preparation of manuscript as well. This article was a part of master's thesis in medical surgical nursing, approved by Research and Ethical Committee of Hamadan University of Medical Sciences with "P/16/35/9/5417 dated 30.06.2015".

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