

Association of Phantom Vibration and Ringing Syndrome and Job-Related Stress among Nurses in Al-Nasiriyah City

ارتباط متلازمة الإهتزاز والرنين الشبجي مع الكرب النفسي المتعلق بالعمل بين الممرضين في مدينة الناصرية

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المستخلص:

الهدف: تهدف الدراسة إلى: (١) تقييم متلازمة الاهتزاز والرنين الشبجي بين الممرضين ، (٢) تحديد مستوى الكرب النفسي المتعلق بالعمل بين الممرضين في المستشفيات التعليمية في مدينة الناصرية ، و (٣) تحديد العلاقة بين الكرب النفسي المتعلق بالعمل ومتلازمة الاهتزاز والرنين الشبجي.

المنهجية : دراسة وصفية (دراسة مستعرضة للدراسة الحالية) أجريت في الرابع من كانون الاول ٢٠١٧ حتى الرابع من نيسان لعام ٢٠١٨ لغرض تحديد ارتباط متلازمة الاهتزاز والرنين الشبجي مع الكرب النفسي المتعلق بالعمل بين الممرضين في المستشفيات التعليمية في مدينة الناصرية على عينة عرضية (غير الاحتمالية) شملت (٦٠٠) ممرضة والذين يعملون في نوبات الدوام الصباحي والمسائي. تم جمع البيانات من خلال استخدام الاستبانة وإجراء الملى الذاتي للاستبانة. وتتألف من اربعة أجزاء: 'الخصائص الاجتماعية والديموغرافية للممرضين، العوامل التي ترتبط باستخدام الهاتف المحمول بين الممرضين، مقياس متلازمة الاهتزاز والرنين الشبجي، و مقياس الضغط المتعلق بالعمل. تم تحديد صلاحية الاستبيان من خلال لجنة من الخبراء وتم تحقيق موثوقية الاتساق الداخلي من خلال تطبيق معامل ارتباط ألفا (٠,٨٣) والذي كان مقبولاً إحصائياً وقد تم تحليل البيانات من خلال تطبيق النهج الإحصائي الوصفي والاستدلالي باستخدام الحزمة الإحصائية للعلوم الاجتماعية (SPSS) النسخة ٢٤

النتائج: وكشفت نتائج الدراسة بأن الممرضين لديهم خبرة متوسطة من متلازمة الاهتزاز والرنين الشبجي بدلالة المستوى المعنوي لجميع فقرات المقياس ، ولم يكن هناك ارتباط ذو دلالة معنوية بين متلازمة الاهتزاز / والرنين الشبجي مع الكرب النفسي المتعلق بالعمل بين الممرضات.

التوصيات: أوصت الدراسة بنشر الوعي بين الممرضات فيما يتعلق بمخاطر استخدام الهاتف المتنقل من خلال الدورات التعليمية و محاضرات التعليم المستمر والقيام بإجراء مزيد من الدراسات المماثلة لاستكشاف العوامل التي تؤثر على الإجهاد المتعلق بالوظيفة من أجل تطبيق الإدارة لتلك العوامل .

الكلمات المفتاحية: الاهتزاز/الرنين الشبجي، الكرب النفسي المتعلق بالعمل، الممرضين

Abstract

Objectives: The study aims to: (1) assess the prevalence of phantom vibration and ringing syndrome among nurses, (2) determine the level of job-related stress among those nurses who are working at teaching hospitals in Al-Nasiriyah city, and (3) identify the association between job-related stress and experience of phantom vibration and ringing syndrome.

Methodology : A descriptive design, cross-sectional study was used for the present study was carried out from 4th December, 2017 to the 4th April, 2018 in order to determine the association of Phantom Vibration and Ringing Syndrome with Job - Related Stress among nurses at Teaching Hospitals in Al-Nasiriyah City , on a purposive (non-probability) sample was used in this study that composed of (600) nurses who are working in the morning and night shifts . Data were collected by using the technique of self – administrative report was consisted of four parts: ' socio-demographic characteristics for the nurses, factors that are related to mobile use among the nurses , phantom vibration and ringing syndrome scale and job – related stress scale . The validity of the questionnaire was obtained through a panel of experts and the internal consistency reliability was achieved through the application of Alpha Correlation Coefficient ($r=0.76$) which was statistically acceptable.

Results: The finding of the study revealed that phantom vibration and ringing syndrome are experienced moderately among nurses evidenced by significant level among all items of the scale, there were no significant association between phantom vibration \ ringing syndrome and job- related stress among nurses.

Recommendations: The study recommended spreading awareness among nurses regarding the risks of mobile use through instructional sessions and continuing education lectures and the necessary conducting of further similar studies for exploring the factors that influence the job-related stress in order to apply the management for such factors.

Keywords: Phantom vibration/ringing, job-related stress, nurses

Introduction

Recently, cell phones & pagers have been playing an important role as a primary source of communication among societies for this reason; the cell phones are become necessary now a day. Life with techniques like mobile phones is much easier than ever before, although their uses have many undesirable effects and especially its impacts on public health⁽¹⁾.

A new terminology like Phantom vibration syndrome is an intermittent perception that a mobile phone is vibrating when it is not. A similar perception, phantom ringing syndrome is an intermittent perception that a mobile phone is ringing when it is not. These two syndromes might share common associated factors and underlying mechanisms⁽²⁾.

Technology allows us to perform multiple functions, help us to communicate more quickly and more efficiently, and keep us better informed. However, technological advancements (such as mobile, computer, and laptop) are impacting workplace stress in many ways⁽³⁾.

Job stress is one of the biggest psychosocial risks at work, Job related stress in nursing can be defined as the physical and emotional reactions that occur when the nurse's ability and resources cannot deal with the demands and requests of their work⁽⁴⁾.

The previous studies implied that medical staff at hospital with intensive care are experiencing a phantom vibration and ringing syndrome. Many factors have been found to be associated with phantom vibration syndrome such as occupation, mobile phone location, hours of carrying the device, and the time of use in vibration mode⁽⁵⁾.

Chen and his colleagues stated the result of the previous researches that found an association between phantom vibration and ringing syndrome with job-related stress⁽⁶⁾. Another study that is conducted on the medical staff interns, found that medical interns are experiencing a different types of stressors. Phantom vibration syndrome and phantom ringing

syndrome are important stressors among them that are linked to job stress⁽⁷⁾.

Objectives of the study

The study aims to: (1) assess the prevalence of phantom vibration and ringing syndrome among nurses, (2) determine the level of job-related stress among those nurses who are working at teaching hospitals in Al- Nasiriyah city, and (3) identify the association between job-related stress and experience of phantom vibration and ringing syndrome.

Methodology

A descriptive design, cross-sectional study was carried out in order to achieve the earlier stated objectives of this study, the present study is started for the period on 4th December, 2017 to 4th April, 2018. The study was carried out to determine the association of Phantom Vibration and Ringing Syndrome with Job –Related Stress among Nurses as a main objective in this study. A purposive (non-probability) sample was used in this study that composed of (600) nurses of the morning and night shifts from teaching hospitals in AL-Nasiriyah City was involved in the present study.

Data were collected by using the technique of self – administrative report a questionnaire was designed by the researcher through adoption and modification of the scales that contribute in achieving the objectives of this study. The researcher was developing the instrument of the study depending on the Extensive review of available literature and previous related study scale Gray-Toft and Anderson, (2016) and Goyal, (2015)⁽¹²⁾. The questionnaire of the study is composed of four parts: the first parts, include the socio-demographic characteristics for the nurses included in this study; the second part, include the factors that are related to mobile use among the nurses; third part include the phantom vibration and ringing syndrome scale; were estimated by calculating the cutoff point for each item according to score of mean for each item which have been rated and scored according to the following patterns: The items number 1, 12, and 13 were rated into three Likert scale as follow:

item (1): fixed line= 1, simple phone= 2, and smart phone=3; item (12): not private=1, some private=2, and very private=3; item (13): normal=1, very emotional=2, and much emotional=3. The significant level for the three items was estimated by calculation the cutoff point for mean and divided into three level as follow: not significant= 1 – 1.66, significant= 1.67 – 2.33, and high significant= 2.34 – 3 . The items number 2, 4, 5, 7 and 8 were rated with Semantic scale as follow:) : yes = 1 and no =0 ; The significant level for the five items was estimated by calculation the cutoff point for mean and divided into three level as follow: not significant= 0 –0.33 , significant= 0.34 – 0.67 , and high significant=0.68 – 1 . The items number 3 and 6 were rated into four Likert scale as follow : daily = 3, weekly = 2, Monthly =1 , Never= 0 .The significant level for the two items was estimated by calculation the cutoff point for mean and divided into three level as follow : not significant= 0 –1, significant = 1.1 – 2, and high significant= 2.1 – 3. The items number 9, 10, 11, were rated into four Likert scale as follow: item (9): Shirt pocket = 1, Jean front pocket = 2, Jean back pocket =3, Handbag = 4; ; item (10): Education & sciences = 1 , Communication with family & friends = 2 , Entertainment = 3 , All above = 4 ; item (11) : < 3 hours =1, 3 – 5 hours =2, 6 – 10 hours =3, 10 < hours=4 . The significant level for the three items was estimated by calculation the cutoff point for mean and divided into three level as follow: not significant= 1 – 2, significant= 2.1 – 3, and high significant= 3.1 – 4 .

And the last part include job –related stress scale. contains 26 items that help to measure of job-related stress among nurses , these items were rated to three levels of Likert scale and scored as follows: never

stressful= 1, sometimes stressful= 2 and very stressful=3. The level of job-related stress was estimated by calculating the cutoff point for total score of the scale and divided into three levels and scored as follows: mild= 26-43, moderate= 44-61, and severe= 62-78.

The validity of the questionnaire was determined through a panel of experts (13 experts). These experts were (7) faculty member from the College of Nursing / University of Baghdad , (2) psychiatrists from Ibn –Rushed psychiatric teaching hospital , (2) faculty member from the College of Nursing / University of Babylon , (1) faculty member from the College of Nursing / University of Karbala , (1) faculty member from the Institute of Medical Technology/ Baghdad .

The internal consistency of the instrument was determined through the pilot study and the computation of Alpha Correlation Coefficient (Cronbach's Alpha). The result of the reliability was ($r = 0.76$). The data were collected for the present study through the utilization of the self-administrative questionnaire, by using the Arabic version of the questionnaire for all subjects who were included in the study sample The researcher distributed the questionnaire for nurses after taking their willing to participate in this study, the interview was conducted with volunteer nurses It took about 20 to 40 minutes for interviewing and after that the questionnaire was collected. Statistical analyses were conducted by using statistical package for social science (SPSS) version (24) Data analysis was employed through the application of descriptive and inferential statistical approaches which were performed through the computation of the following: frequencies, percentage, standard deviation, alpha correlation coefficient and Chi-square

Results

Table (1): Distribution of the Nurses according to their Socio-demographic Characteristics

List	Characteristics	F	%	
1	Gender:	Male	200	33.3
		Female	400	66.7
		Total	600	100
2	Age group:	< 20 year	10	1.7
		20 – 29 year	411	68.5
		30 – 39 year	144	24
		40 – 49 year	26	4.3
		50 – 59 year	9	1.5
		Total	600	100
3	Marital status:	Unmarried	258	43
		Married	332	55.3
		Divorced	8	1.3
		Widowed/widower	1	0.2
		Separated	1	0.2
		Total	600	100
4	Having children:	Yes	281	46.8
		No	319	53.2
		Total	600	100
5	Number of children:	None	319	53.2
		1 – 3	236	39.3
		4 – 6	43	7.2
		7 ≤	2	0.3
		Total	600	100
6	Nursing qualification:	Intermediate school	9	1.5
		Secondary school	224	37.3
		Diploma	209	34.8
		Bachelor	156	26
		Master	2	0.4
		Total	600	100

F: Frequency, %: Percentage

The analysis of this table shows that two third of nurses who are working at teaching hospitals in Al-Nasiriya are young females (66.7%) with age group (20-29) years old (68.5%), more than half of them are married (55.3%) and 43% of them are unmarried; only 46.8% of them having children who were 1-3 child/ family (39.3%). Regarding nursing qualification, the highest percentage reveals nursing secondary school (37.3%) and diploma (34.8%) and only 26% of them having bachelor degree.

Table (2): Assessment of Phantom Vibration and Ringing Syndrome and Related Factors among Nurses

List	Items	Scale	F (%)	M.S	Assess.
1	Having phone:	Fixed line	66 (11)	2.66	H.S*
		Simple mobile	70 (11.7)		
		Smart mobile	464(77.3)		
		Total	600 (100)		
2	Have you felt your phone is vibrating when it doesn't?	Yes	346(57.7)	0.57	S**
		No	254(42.3)		
		Total	600 (100)		
3	How many times you felt your phone is vibrating when it doesn't?	Daily	87(14.5)	1.01	S***
		Weekly	87(14.5)		
		Monthly	172(28.7)		
		Never	254(42.3)		
		Total	600 (100)		
4	Did it bother you to feel like this feeling?	Yes	303(50.5)	0.51	S**
		No	297(49.5)		
		Total	600 (100)		
5	Have you felt your phone is ringing when it doesn't?	Yes	369(61.5)	0.60	S**
		No	231(38.5)		
		Total	600 (100)		
6	How many times you felt your phone is ringing when it doesn't?	Daily	92(15.3)	1.07	S***
		Weekly	90(15)		
		Monthly	187(31.2)		
		Never	231(38.5)		
		Total	600 (100)		
7	Did it bother you to feel like this feeling?	Yes	297(49.5)	0.50	S**
		No	203(33.8)		
		Total	500 (100)		
8	Have you felt vibration or ringing of mobile phone even when it is switched off or not in your pocket?	Yes	255(42.5)	0.43	S**
		No	345(57.5)		
		Total	600 (100)		
9	Where you kept your phone?	Shirt pocket	382(63.7)	1.61	S****
		Jean front pocket	139(23.2)		
		Jean back pocket	9(1.5)		
		Handbag etc	70(11.7)		
		Total	600 (100)		
10	For which purpose you used the mobile phone?	Education & sciences	10(1.7)	3.06	H.S****
		Communication with family & friends	250(41.7)		
		Entertainment	33(5.5)		
		All above	307(51.2)		
		Total	600 (100)		
11	How much time you spent on your mobile phone in a day?	< 3 hours	231(38.5)	2.01	S****
		3 – 5 hours	199(33.2)		
		6 – 10 hours	104(17.3)		
		10 < hours	66(11)		
		Total	600 (100)		

12	How much private information you have in your phone?	Not private	122(20.3)	1.98	S*
		Some private	367(61.2)		
		Very private	111(18.5)		
		<i>Total</i>	<i>600 (100)</i>		
13	How much emotional person think you are?	Normal	279(46.5)	1.75	S*
		Very emotional	195(32.5)		
		Much emotional	126(21)		
		<i>Total</i>	<i>600 (100)</i>		

F: Frequency, %: Percentage, M: Mean of score, Assess: Assessment, S: Significant, H.S: Highly significant

*Significance (M.S): N.S= 1 – 1.66, S= 1.67 – 2.33, H.S= 2.34 – 3

**Significance (M.S): N.S= 0 – 0.33, S= 0.34 – 0.67, H.S= 0.68 – 1

***Significance (M.S): N.S= 0 – 1, S= 1.1 – 2, H.S= 2.1 – 3

****Significance (M.S): N.S= 1 – 2, S= 2.1 – 3, H.S= 3.1 – 4

The analysis of this table indicates that phantom vibration and ringing syndrome are experienced moderately among nurses evidenced by significant level among all items of the scale; the item (1) shows that 77.3% of nurses having smartphone mobiles, Items (2, 3, & 4) indicates that more than half of nurses are experiencing a phantom vibration syndrome (57.7%) (M.S=0.57) monthly (28.7%) (M.S=1.01) who are bothering of feeling such fake vibration (50.5%) (M.S=0.51). Items (5, 6, & 7) indicates also that 61.5% of nurses are experiencing a phantom ringing syndrome (M.S=0.60) monthly (31.2%) (M.S=1.07) who are bothering with feeling of fake ringing (50.5%) (M.S=0.50). 57.5% of nurses are feeling with vibration and ringing of their mobile even when they switched off or in their pocket (M.S=0.43). 63.7% of nurses are keeping their mobile phone in their shirt pocket, and more than half of them are using the mobile for the purposes of education, communication, and entertainment (51.2%). Regarding time spent on mobile use, 38.5% of nurses are spent less than three hours per day on their mobile phone (38.5%). More than half of nurses report that they have some private information saved in their mobile phones (61.2%). Thinking a normal emotional person is the more frequent response reported by the nurses (46.5%).

Table (3): Overall Assessment of Job-related Stress among Nurses

Stress Level	F	%	M.S	SD
Mild	129	21.5	1.92	0.583
Moderate	392	65.3		
Severe	79	13.2		
<i>Total</i>	<i>600</i>	<i>100</i>		

F: Frequency, %: Percentage, M: Mean of score, SD: Standard Deviation

Mild= 26 – 43, Moderate= 44 – 61, Severe= 62 – 78

This table indicates that nurses are sometime got stressful related to their job that found in this finding revealed a moderate stress among nurses (65.3%) while only 13.2% having severe level of stress.

Table (4): Association of Phantom Vibration Syndrome with Job-related Stress among Nurses

Job-related stress \ Phantom Vibration syndrome	Mild	Moderate	Severe	Total
Yes	66	232	48	346
No	63	160	31	254
Total	129	392	79	600
$\chi^2_{obs.} = 2.914$ $df = 2$ $\chi^2_{crit.} = 2.894$ $P = 0.233$				

df: Degree of freedom, P: Probability level (P-value ≤ 0.05)
 $\chi^2_{obs.}$: Calculated Chi-square, $\chi^2_{crit.}$: Tabulated Chi-square

This table indicates that there is no significant association between phantom vibration syndrome and job-related stress among nurses at p-value ≤ 0.05

Table (5): Association of Phantom Ringing Syndrome with Job-related Stress among Nurses

Job-related stress \ Phantom Ringing syndrome	Mild	Moderate	Severe	Total
Yes	76	246	47	369
No	53	146	32	231
Total	129	392	79	600
$\chi^2_{obs.} = 0.759$ $df = 2$ $\chi^2_{crit.} = 0.757$ $P = 0.684$				

df: Degree of freedom, P: Probability level (P-value ≤ 0.05)
 $\chi^2_{obs.}$: Calculated Chi-square, $\chi^2_{crit.}$: Tabulated Chi-square

This table indicates that there is no significant association between phantom ringing syndrome and job-related stress among nurses at p-value ≤ 0.05 .

Discussion

The findings of data analysis that are shown in table (1) indicated that the majority of nurses were females, The researcher believes that the reason the number of females more than males is that the nursing secondary school in Al Nasiriya city is only for females in recent years, a study presents supportive evidence is available in the study that showed female nurses were more than half of the sample⁽⁷⁾, another supportive evidence that found Overall, 69.1% were female⁽⁸⁾. The majority of the nurses were in the age-group of 20 to 29, as indicates that nursing community in Al-Nasiriya is young, a

study presented supportive evidence that found most of nurses (58.9%) were in the age-group of 20 to 29 years⁽⁹⁾. More than half of them are married, only 46.8% of them having children who were 1-3 child/family. A study presents supportive evidence that (53%) of young female are married⁽¹⁰⁾. Regarding nursing qualification, The highest percentage of respondents were nursing secondary school, this is because nursing secondary schools in Al-Nasiriyah city are more than medical institutions and colleges of nursing. A study presents supportive evidence that found Tuama majority of

participants (45.5%) in Thi- Qar hospitals have preparatory nursing school⁽¹¹⁾.

In table (2), indicated that phantom vibration and ringing syndrome are experienced moderately among nurses evidenced by significant level among all items of the scale; in the items (1), the nurses having smartphone mobiles more than those having Simple mobile and fixed line, the researcher believes, that Smartphones offer users a several features including the ease of use and speed not matched by standard phones, a study presents supportive evidence that most of students had smartphone (81.3%)⁽⁸⁾. Items (2, 3, & 4) indicates that more than half of nurses are experiencing a phantom vibration syndrome monthly and are bothering of feeling, a study presents supportive evidence that found another supportive evidence that found Overall, 70.1% of all participants experienced the phantom vibration and ringing⁽²⁾, additional support was found most of the postgraduate students are facing the phantom vibration syndrome on monthly^{(8), (12)}. Item (5, 6, & 7) indicated also that 61.5% of nurses are experiencing a phantom ringing syndrome monthly and are bothering of feeling Higher than the phantom vibration syndrome (M.S=0.60), showed in Taiwan maximum of 88% of medical students reported the feeling of phantom ringing syndrome.), a study presents supportive evidence that which records the highest percentage is once a monthly (17%)⁽¹³⁾. Item (8) indicated the nurses are feeling with vibration and ringing of their mobile even when they switched off or in their pocket , in the rate of 57.5% , a study presents supportive evidence that found (75%) of students felt vibration or ringing even when the phone is switched off or phone was not in their pocket⁽¹²⁾. Item (9) indicated 63.7% of nurses are keeping their mobile phone in their shirt pocket were enhance with phantom vibration and ringing syndrome symptoms.

This fact is also supported by studies on Phantom Vibration and Ringing Syndrome among Postgraduate Students. Item (10) indicated that more than half of nurses are using the mobile for the purposes of education, communication, and entertainment in the rate of (51.2%). Item (11) referred that nurses are spent less than three hours per day on their mobile phone in the rate of (38.5%), a study presents supportive evidence that most participants with highest ratio are spending 1 to 3 hours per day on mobile⁽¹²⁾. Item (12) showed more than half of nurse report that they have some private information saved in their mobile phones. Item (13) showed thinking a normal emotional person is the more frequent response reported by the nurses.

In Table (3) , showed that job- related stress in nurses is in moderate level (65.3%), were working in different departments, a study presents supportive evidence that nurses have a moderate stress level, (55.1 %) ⁽¹⁴⁾.

The result in table (4 and 5) revealed that there is no significant association between phantom vibration/ringing syndrome with job-related stress among nurses, This indicates that the job related stress of nurses does not affect their behavior, there is no effect of stress on the phantom vibration syndrome, then there are other reasons to the syndrome may be factors related to the use of mobile , The researcher believes that nurses have the ability to separate between the stress of their job and their behavior perhaps by certain methods or strategies , a study presents supportive evidence that the independent association between work-related burnout and PVS/PRS suggests that PVS/PRS may be a harbinger of mental stress or a component of the clinical burnout syndrome⁽¹¹⁾.

Recommendations:

1. Spreading awareness among the nurses regarding the risks of mobile use for long period that may cause addiction for mobile through instructional sessions and continuing education lectures.
2. A brochures and posters about phantom vibration and ringing syndrome have to be conducted by the Ministry of Health and Environment to increase the nurses' awareness about the phenomenon for those nurses who are working within their hospitals.

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