

# The Frequency of Phantom Vibration Syndrome in Medical Staff: A Cross Sectional Survey

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## ABSTRACT

**Introduction:** Phantom vibration syndrome, also known as hypovibochondria or ring-xiety, may occur among individuals carrying digital devices. Phantom vibration syndrome is the mistaken belief that a device is vibrating when it is not. The current study investigates this phenomenon among medical staff who often interact with digital devices throughout duty hours.

**Objective:** The objective of the study was to determine the frequency of Phantom vibration syndrome in medical staff.

**Methods:** A cross-sectional survey of medical staff was conducted. A convenience sample of 150 physicians, surgeons, allied health professionals, and medical assistants was used. Online survey invitations were sent by email, WhatsApp, and other channels. The data was analysed by SPSS 25.0. The Fisher exact test was used to compare phantom vibrations to categorical data.

**Results:** The results showed that out of 190 medical staff, there were 133 (72.7%) having phantom vibration syndrome. It was significantly associated ( $p=0.000$ ) with younger age groups from 21-40 year, was seen more in surgeon, physicians and then nurses ( $p=0.029$ ), associated more with carrying cell phone ( $p=0.003$ ), more in carrying device in breast and back pocket ( $p=0.001$ ), more in keeping device on vibration always or most of time ( $p=0.008$ ) and more in using device from 11-15 or more hours ( $p=0.001$ ). It was equally distributed in both male females ( $p=0.176$ )

**Conclusion:** The study concluded that phantom vibration syndrome was highly prevalent in medical staff. The findings were associated with the length of time the product was used and were more prevalent among surgeons, medical physicians, and nurses in a decreasing order. most respondents regarded the feelings as bothersome and worth stopping and even changing the device.

**Keywords:** Phantom Vibration Syndrome, Medical Staff, Health Practitioner, Digital Devices

## INTRODUCTION

In the era of information technology, electronic gadgets like pagers and mobile phones have become standard and routine use. Users often set these gadgets to silent vibration mode in quiet settings and environments.(Phaneuf, 2019) When the vibration mode is used more frequently, users may get a random perception of vibration even though the device is not vibrating.(Rosenberger, 2015) The prevalence of this symptom, which is also known as phantom vibration syndrome, is unknown. Its risk factors, potential risk factors, and treatment have not been established by evidence.(Haupt, 2007, Mangot et al., 2018)

PVS is a disease caused by technological progress. This belief is maintained by 90% of mobile phone users. Several studies have been carried out to determine the prevalence of PVS. In 2010, Rothberg et al. conducted research on PVS among medical personnel. Approximately 70% of individuals experience PVS in their everyday lives.(Rosenberger, 2015) At Kurukshetra University, Goyal (2015) performed a PVS survey with 300 postgraduate students from diverse fields. 74% of the students reported both phantom vibrations and phantom vibration syndrome simultaneously, whereas 17% only experienced phantom vibrations as well as 4% only experience phantom ringing syndrome.(Goyal, 2015) Mobile phone and pager users often used PVS. Michelle and Kaiser (2013) conducted research with 290 college freshmen. They noticed that 89 percent of the children had PVS.(Remley et al., 2013, Dezfouli and Khosravi, 2020)

Han et al et al. (2013) discovered that 78% of test subjects experienced what they believed to be phantom vibration syndrome.(Han et al., 2013) Mohammadbeigi et al observed that 54.3% of medical students had PVS, with a greater frequency among students than female students. Multiple further investigations have shown that the worldwide prevalence of PVS is increasing.(Mohammadbeigi et al., 2017) The objective of study was to determine the prevalence of this phenomenon phantom vibrations and associated risk factors among medical professionals who were supposed to carry a mobile device and other variables.

## METHODS

It was a cross sectional survey conducted among medical staff. The study was compiled at Link Medical Institute, Link Medical Centre, Lahore. Based on sample of convenience a total number of 150 medical staff including physicians, surgeons, allied health practitioners and medical assistants were included.

This was an online survey and invitation were disseminated through email, WhatsApp, and other approachable media. In order minimize bias, the invitation message simply stated: "We want to ask for your participation in a survey related to electronic devices with a vibrating beeper". Upon acceptance, Google Scholar based form was sent to the participants. The self-determined questionnaire as based on questions related to potential factors linked with phantom vibrations, gender, age, occupation, device type being used in vibration, wearing part, frequency of routine ringing and experience of phantom vibrations. The questionnaire was tested and modified after its pilot testing. The study was approved by Link Medical Institute, Lahore.

The comparison between primary outcome phantom vibrations and categorical variables was conducted using Fisher's exact test.(Cuzick, 1985, Kot and Rajiani, 2020) All the data was coded into ordinal or nominal categories. The prevalence ratios of categorical variables reflected proportion positive responses and ratios of ordinal variables such as number of hours a digital device in use, were increase in the order.

## RESULTS

The results showed that out of 190 medical staff, there were 133 (72.7%) having phantom vibration syndrome. It was significantly associated ( $p=0.000$ ) with younger age groups from 21-40 year, was seen more in surgeon, physicians and then nurses ( $p=0.029$ ), associated more with carrying cell phone ( $p=0.003$ ), more in carrying device in breast and back pocket ( $p=0.001$ ), more in keeping device on vibration always or most of time ( $p=0.008$ ) and more in using device from 11-15 or more hours ( $p=0.001$ ). It was equally distributed in both male females ( $p=0.176$ )

Table 1:

Characteristics		Total Number 190(100%)	With Phantom Vibrations N=133 (%)	Total Percentage	P Value
Age	21-30	80(42.1%)	61(45.9%)	32.1%	0.000
	31-40	68(35.8%)	52(39.1%)	27.4%	
	41-50	21(11.1%)	12(9%)	6.3%	
	51-60	6(3.2%)	1(0.8%)	0.5%	
	61-70	15(7.9%)	7(5.3%)	3.7%	
Gender	Male	78(41.1%)	58(43.6%)	30.5%	0.176
	Female	112(58.9%)	75(56.4%)	39.5%	
Occupation	Physician	40(21.1%)	24(18%)	12.6%	0.029
	Surgeon	76(40%)	64(48.1%)	33.7%	
	Nurses	44(23.2%)	32(24.1%)	16.8%	
	Physiotherapist	22(11.6%)	10(7.5%)	5.3%	
Device Carried	Cell phone	90(60.5%)	90(67.7%)	47.4%	0.003
	Monitor, beeper	43(39.5%)	43(32.3%)	22.6%	
Device location	Back pocket	34(17.9%)	28(21.1%)	14.7%	0.001
	Breast pocket	90(47.4%)	80(60.2%)	42.1%	
	Side Pocket	66(34.7%)	25(18.8%)	13.2%	
Vibration Mode	Never	26(13.7%)	12(9%)	6.3%	0.008
	On and off	39(20.5%)	28(21.1%)	14.7%	
	Most of time	56(29.5%)	37(27.8%)	19.5%	
	All the time	69(36.3%)	56(42.1%)	29.5%	
Daily hours of use	Less than 5	33(17.4%)	11(8.3%)	5.8%	0.001
	5-10	76(40%)	60(45.1%)	31.6%	
	11-15	60(31.6%)	41(30.8%)	21.6%	
	More than 15	21(11.1%)	21(15.8%)	11.1%	

Table 2:

Characteristics	Response	Phantom vibrations experience		P Value
Bothersomeness	Not at all	Count	62	0.000
		Percentage	46.6%	
	A little	Count	35	
		Percentage	26.3%	
	Bothersome	Count	36	
		Percentage	27.1%	
Duration of device use before phantom vibrations began	<1 month	Count	12	0.004
		Percentage	9.0%	
	1-5 months	Count	31	
		Percentage	23.3%	
	6-12 months	Count	72	
		Percentage	54.1%	
>12 months	Count	18		
	Percentage	13.5%		
Phantom vibrations frequency	Daily	Count	8	0.001
		Percentage	6.0%	
	Weekly	Count	10	
		Percentage	7.5%	
	Monthly	Count	115	
		Percentage	86.5%	
Moving the device	Helpful	Count	8	0.000
		Percentage	28.6%	
	No Helpful	Count	10	
		Percentage	38.5%	
	Not Attempted	Count	115	
		Percentage	89.1%	
Stopping use of vibrate mode	Helpful	Count	13	0.000
		Percentage	50.0%	
	No Helpful	Count	10	
		Percentage	34.5%	
	Not Attempted	Count	110	
		Percentage	85.9%	
Changing the device	Helpful	Count	9	0.000
		Percentage	33.3%	
	No Helpful	Count	10	
		Percentage	55.6%	
	Not Attempted	Count	114	
		Percentage	82.6%	

uncomfortable, while just 2% felt them to be quite vexing. Because of this, only 61% of people tried to stop them, and most of them were successful because they either moved the device or stopped using it in the vibrate mode. In pervious literature on adult users of mobile phones and found that two-thirds of them had experienced phantom ringing at some point.(Wahlqvist, 2020, Goyal and Saini, 2019) There have been four reports with comparable results. The research was reported on in several mainstream publications, and several online health blogs and websites have covered the illness. There are at least three different Facebook groups devoted to Phantom Vibration Syndrome. The feelings may be described most accurately as tactile hallucinations, which occur when the brain creates the impression of an unreal touch.(Melvin, 2020) It seems reasonable to keep using the term "phantom vibration syndrome," both because the word "hallucination" connotes mental illness, whereas the phantom vibration syndrome appears to occur in the majority of normal people, and because so many people already use it.(Charulatha et al., 2021)

Phantom vibration syndrome is a condition that has a mysterious origin; nevertheless, one theory suggests that it is brought on by the cerebral cortex's erroneous processing of incoming sensory information. Hypothesis-guided search is the process by which the brain applies filters or schema depending on what it expects to discover in order to manage the overwhelming quantity of sensory input.(Ning et al., 2018) This process helps the brain deal with the massive amount of sensory information that it receives. When a person experiences phantom vibrations, it is because their brain is expecting a call and so misinterprets the sensory information that it receives. Even if the exact cause is unclear, there are a number of stimuli that might have caused these feelings. These include the pressure of clothing, muscular contractions, and other things.

Hallucinations are prevalent in healthy people, despite the fact that they may be severe, and they are not confined to vibrations in any way.(Beck, 2021) It's also possible to hallucinate the ringtones of mobile phones. Phantom vibrations in our sample were recorded at an extraordinarily high frequency, indicating that regular brain operations were being carried out. Unresolved mysteries include the reasons why some people are affected by it while others are not; the reasons why younger people (or house staff) are more likely to be affected by it; and the reasons why particular body areas seem to be more susceptible to producing phantom vibrations than others.(Loydell, 2021) Because of the

## DISCUSSION

In this cross-sectional study of medical staff, 72% reported electronic device-induced phantom vibrations. The findings were associated with the length of time the product was used and were more prevalent among surgeons, medical physicians, and nurses the majority of respondents regarded the feelings as somewhat

cognitive flexibility of younger individuals, it's possible that they are more likely to see vibrations. On the other hand, papers that have been provided to medical students and residents can need more immediate attention than those that have been delivered to attending doctors. The frequency with which students and residents check their pagers is comparable to the frequency with which new moms assume they hear their infant crying.(Hinton, 2021)

Those who sought to end the phantom vibrations by relocating the instrument were often successful in doing so. If the source of the vibrations is shifted, the brain may be unable to form a sensory memory for that specific location if it was previously stimulated by those vibrations. In addition, if the feelings that related to the increased use of the substance were not reinforced, they tended to disappear. However, other users still felt the smartphone vibrate even when it was not in touch with them, making it clear that avoiding using the cell phone in vibration mode was not a solution that worked for everyone.

**Strengths and Limitations of the Study:** this study suffers from a number of limitations. To initially, the survey was only given to qualified medical professionals affiliated with a specific organisation. It is not known if other people experience phantom experiences with the same frequency as the one being described. The findings, on the other hand, are consistent with those that were presented in previous literature that investigated the general population. Additionally, the frequency of consumption was self-reported by the participants. There is a possibility that the participants exaggerated or underestimated their exposures. In a similar manner, efforts made to put a stop to the tremors were assessed in hindsight without the use of controls. Further research is needed to identify what exactly causes phantom vibrations and how to put an end to them once and for all. Thirdly, despite the high response rate, there was a refusal to participate from 24% of the people who were requested. There have been efforts taken to keep the specific nature of the poll a secret; but some participants who have already finished it may have disclosed its contents to others, which has resulted in a bias being introduced into our sample. The results of the poll represent a specific period. Prospective study may make it easier to predict who may acquire phantom vibration syndrome and to determine the condition's long-term prognosis.

## CONCLUSIONS AND IMPLICATIONS

The study concluded that phantom vibration syndrome was highly prevalent in medical staff. The findings were associated with the length of time the product was used and were more prevalent among surgeons, medical physicians, and nurses in a decreasing order. the majority of respondents regarded the feelings as bothersome and worth stopping and even changing the device.

A mobile phone is carried by more than half of the world's population at present, and a sizeable percentage of the people who carry mobile phones place the device's mode into the vibrating setting at least sometimes.(Lai et al., 2019, Woods et al., 2022) If two-thirds of these people experience phantom vibrations, the global implications would be enormous, even if the sensations are not particularly distressing. Even if just a small fraction of people who use the digital devices end up developing significant symptoms, it may be necessary to offer treatment for them. Additional research is necessary to understand what causes phantom vibration syndrome and how the condition might be treated. Users will have the ability to take preventive actions or, at the very least, relieve the symptoms of phantom vibration

syndrome once the root cause of the condition has been discovered.

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