Knowledge, Attitudes on Fall and Awareness of Hospitalized Patient's Fall Risk Factors Among the Nurses Working in Tertiary Care Hospitals.

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Abstract

Back ground: Fall is the most common patient safety incident in health care organization. This study was initiated to obtain information regarding knowledge & attitude on fall and awareness of fall risk factors among nurses to device evidence based and multidisciplinary educational and training programme to improve patient safety and thereby reducing morbidity and mortality associated with fall.

Methods: A descriptive cross sectional survey study was conducted among 339 registered nurses working in Tertiary care hospitals across Chennai, Tamil Nadu, India. Modified version of previously validated standard questionnaire was administered by the investigators through online survey method to explore the level of knowledge & attitude on fall and awareness of inpatient fall risk factors among Nurses.

Results: In this study, 15.6% of participants had adequate knowledge on fall, 57.2% had favorable attitude towards fall and 38.3% adequate awareness on fall risk factors. Years of experience in nursing has statistical significant association with level of knowledge on fall. The participant's attitude towards fall had statistical significant relationship with age, education, experience in nursing and previous patient fall experience. The correlation between fall knowledge, attitude of fall and awareness of fall risk factors were highly significant. Majority of the participants expressed their favorable attitude towards need for fall preventive education.

Conclusion: In our study, it is evident that there is a void which has to be filled to improve the knowledge, attitude and awareness on fall and its risk factors. There is a need for extensive education and holistic, multifactorial and interdisciplinary training program to be undertaken through various health care organizations.

Introduction

A fall is defined as an event which results in a person coming to rest inadvertently on the ground or floor or other lower level (1). Falls and its consequences are major public health problem, making it the second leading cause of accidental deaths worldwide (2). Fall is reported as the most frequent patient safety event occurring in hospitals³. Fall occur at a rate of 3–5 per 1,000 occupied bed-days, and the Agency for Healthcare Research and Quality estimates that each year 700,000 to 1 million hospitalized patients fall (4). Nearly one in every three inpatients aged 65 years and older sustains fall. The traumatic complications of fall includes physical injury, functional impairment, increased rate of hospitalization and delayed recovery as a result people suffer a lot with a huge burden to the family, health sector, and economy of the country (5, 6, 7). A significant proportion of non-traumatic falls, often instill fear of fall- a post fall syndrome which includes dependency, loss of autonomy, confusion, immobilization, and depression, which will lead to a further restriction in daily activities and thus affects Quality of life (8, 9). Despite the continued efforts to decrease falls in the hospital settings, there continues to be an increased incidence of inpatient falls. Nurses are the true backbone for any health facility. They provide constant care to patients and it is important that they are properly trained to identify risk factors and employ strategies to prevent them. Due to demanding working schedule, lack of awareness, complex patient profiles, there are high chances that preventable aspect of these “geriatric giants” are not well addressed and often overlooked. Knowledge and attitude of nurses attribute to disseminate and establish a foundation for fall preventive activities in Tertiary care hospitals. Even though falls among hospitalized patient is a well-recognized topic in both nursing and medical literature, in many developing countries it has not been prioritized for research. Hence, the current study had been devised to find out these lacunae and establish the best care for the patients.

Materials And Methods

Study participants

This is a cross sectional study was conducted in Panimalar Medical College Hospital & Research Institute, Chennai, Tamil Nadu, India. A probability random sampling technique was used for selecting the study participants. The Researchers recruited 339 registered nurses who are working in tertiary care hospitals across Chennai aged over 20 years. Registered nurses who are able to read and write English and those willing to give informed consent were only included in the study. Nursing students, trainees and who were not available during data collection were excluded from participating in the study. A semi structured questionnaire was used to gather information from concerned participants at single point in time. Confidentiality of all participants was maintained by assigning unique respondent ID to each participant. This study protocol was approved by the Institutional Review Board (IRB) of the Panimalar Medical College Hospital & Research Institute, Chennai (Panimalar Medical College Hospital & Research Institute IRB #1/2020/003) and conformed to the requirements of the Declaration of Helsinki (as revised in Seoul 2008).

Measures

Modified version of previously validated standard questionnaire was administered by the investigators comprised on 52 questions/statements on demographic characteristics and information pertaining to the fall and its risk factors. The demographics were followed by 3 sections with set of questions/statements. The Section-1 incorporated 16 simple questions, to assess the knowledge on fall by selecting correct and incorrect options. Section – 2 embraced 13 positive and negative statements on 5 point likert scale, the respondents have to record their response on the 5 point Likert scale ranging from: Strongly agree (SA), Agree (A), Unsure (U), Disagree (D), Strongly Disagree (SD) for obtain information on attitude of fall and Sect. 3 – encompassed risk factor category question with the list of 16 risk factors where the respondent have to select related /unrelated option. The reliability of this tool was analyzed using Cronbach's alpha, wherein $\alpha = 0.75$.

Statistical analysis

Each statement/ question was numerically coded to obtain score for knowledge and attitude of fall and awareness of fall risk factors. All the categorical variables are presented as numbers and percentages. Descriptive analysis was performed using univariate statistics to report the Mean and Standard Deviation (SD) for the continuous variable and frequency distributions for the categorical variables. Correlation, non-parametric tests of Kruskal-Wallis and Mann-Whitney Test were performed to compare differences in the variables. All reported statistically significant differences were calculated at the 95% confidence level. Spearman's rho test measured the strength and direction of the relationship between two variables. Chi-square test was used to assess the association between categorical variables. Statistical significance was set at $p < 0.05$. All statistical analyses were performed using Statistical Package for Social Science (SPSS, version 17) for Microsoft windows, SPSS Inc. USA.

Results

Of the 439 participants who were intended to receive survey questionnaires, 339 participants submitted completed questionnaires: a response rate of 75% leaving 339 valid for analysis. Table: 1 depicted the demographic characteristics of the nurses. Out of the participants ($n = 339$) are Female (84.1%) and Male (15.9%). Most of the nurses participated in the study (36.3%) were their professional experience is less than 6 months. 21% of the respondent have experienced patients' that have sustained falls whereas (56.3%) have not experienced previous patient fall. Majority of the respondent (71.7%) have received fall prevention education. However, only (18.3%) were extremely familiar with fall prevention activities.

Knowledge on fall

Considering overall level of knowledge of the 339 participants, 26.8% ($n = 91$) of individuals had inadequate knowledge, 57.5% ($n = 193$) had moderately adequate knowledge, and 15.6% ($n = 53$) had adequate knowledge on fall.(Fig. 1) .The average mean knowledge of the study participants was 10.05 ± 2.219 (Table 5). Correlation between level of knowledge and participants' years of experience in nursing alone showed statistically significant relationship at $p0.01$ among all the selected demographic variable.(Table 6) Similarly only years of experience in nursing has statistical significant association ($p0.01$) with level of knowledge on fall.(Table 7)

The statements concerned with diseases condition and medications related to fall as expressed by the participants represented lowest of all knowledge scores were: 42% for "Taking medicine for diabetics is not related to fall" and "Intravenous therapy or intravenous access has a risk for fall,".46% for "Depression is not related to fall and 47.2% for Taking medicines for blood pressure is not related to fall" (Table 2)

Attitude towards fall

In this present study, 2% ($n = 6$) had unfavorable attitude, 42.2% ($n = 143$) had moderately favorable attitude and 57.2% had favorable attitude towards fall.(Fig. 1) 49.69 ± 5.746 was the average mean attitude of the study participants.(Table 5) The participants' attitude towards fall had statistical significant relationship at $p0.001$ with age, education, experience in nursing and previous fall experience at $p0.05$. (Table 6) There were statistical significant associations between attitude of fall with age (0.05), gender ($p0.001$), educational qualification ($p < 0.001$) and experience in nursing ($p 0.001$).(Table 7)

The lowest mean score for the statements on attitude of fall were: 2.58 ± 1.24 for the statement" hospital environment is safe for fall". 2.66 ± 1.26 for "fall is unavoidable" Majority of the participants expressed their favorable attitude towards need for fall preventive education. 4.56 ± 0.74 (Table.3)

Awareness of fall risk factors

The participants level of awareness on fall risk factors were 38.3% (n = 130) adequate, 52.2% (n = 177) moderately adequate and 9.4% (n = 32) inadequate.(Fig. 1) The average mean value was 11.48 ± 2.165 .(Table 5) The correlation between fall knowledge, attitude of fall and awareness of fall risk factors were highly significant at $p0.0001$ with 95% CI.(Table 5)

Table 1
Demographic characteristics of the nurses included in the study (N = 339)

Demographics	Frequency	Percentage (%)
AGE	47	13.9
≤ 20 years	174	51.3
21–25 years	56	16.5
26–30 years	62	18.3
> 30 years	285	84.1
GENDER	54	15.9
Female	87	25.7
Male	3	.9
EDUCATIONAL QUALIFICATION	205	60.5
Diploma in nursing &	44	13.0
Midwifery	123	36.3
P.C.B.Sc	75	22.1
B.Sc Nursing	82	24.2
M.Sc Nursing	19	5.6
EXPERIENCE IN NURSING	40	11.8
Less than 6 months	148	43.7
6 months – 2 years	191	56.3
2–6 years	243	71.7
7–10 years	96	28.3
More than 10 years	62	18.3
PREVIOUS PATIENT FALL EXPERIENCE	103	30.4
Yes	32	9.4
No	16	4.7
RECEIVED FALL PREVENTION EDUCATION		
Yes		
No		
FALL PREVENTION ACTIVITY		
Extremely familiar		
Very familiar		
Somewhat familiar		
Not so familiar		
Not at all familiar		

Table 2
Statements that evaluate participants knowledge on fall in this study (N = 339)

Items	Mean	Standard Deviation
Recurrence rate is high among anyone who has already experienced a fall	.67	.472
Falls occur most frequently among safety incidents in hospitals.	.58	.495
Falls increase an elderly persons' death rate.	.77	.420
Elderly hip fractures occur by falls	.89	.312
Sliding is not falling	.55	.499
The more medicine you take, the higher your fall risk.	.58	.494
The more diseases you have, the higher your fall risk	.66	.473
Depression is not related to falls.	.46	.499
Someone who has a visual impairment has a higher risk for falls.	.91	.280
Being numb in the limbs is not related to falls	.57	.496
Dysuria is a risk factor for falls.	.70	.458
Taking medicine for diabetes is not related to falls.	.42	.495
Taking medicine for blood pressure is not related to falls	.47	.500
Hearing impaired is not related to falls	.53	.500
Falls occur more when getting up from and down on beds in hospitals.	.86	.343
IV therapy or IV access has a risk for fall	.42	.495

Table 3
Statements that evaluate the attitude of falls among nurses enclosed in the study (N = 339)

Items	Mean	Std. Deviation
I am concerned about patient falls.	4.39	.726
I think falls among patients is unavoidable	2.66	1.268
I think nurses are responsible for patients' falls.	3.75	1.235
Fall prevention is higher priority for intervention.	4.35	.794
I have concern about nursing interventions for fall prevention	4.29	.872
Fall prevention interventions should be conducted actively	4.37	.725
A patients' fall risk level should be inspected when hospitalised.	4.32	.900
Falls preventive education is necessary.	4.56	.741
Falls occur because of patients.	2.59	1.082
I will help immediately if someone asks for help when they move.	4.53	.750
Physical injury is not severe even if a fall happens	3.07	1.218
The hospital environment is safe for falls.	2.58	1.241
I feel guilty if my patient falls.	4.21	.908

Table-4: Frequency and Percentage of level of awareness on fall risk factors among the nurses (N = 339).

Table 5
Correlation between knowledge, attitudes on fall and awareness of fall
risk factors among nurses (N = 339)

RISK FACTOR	CATEGORY	n	Percentage (%)
Gender	Related	182	53.7
	Unrelated	157	46.3
Educational level	Related	138	40.7
	Unrelated	201	59.3
Hearing	Related	247	72.9
	Unrelated	92	27.1
Depression	Related	254	74.9
	Unrelated	85	25.1
Taking medicine	Related	290	85.5
	Unrelated	49	14.5
Urinary incontinence	Related	205	60.5
	Unrelated	134	39.5
Number of chronic disease	Related	258	76.1
	Unrelated	81	23.9
Cognitive impairment	Related	283	83.5
	Unrelated	56	16.5
Insomnia	Related	294	86.7
	Unrelated	45	13.3
Age	Related	302	89.1
	Unrelated	37	10.9
Use of assistive device	Related	268	79.1
	Unrelated	71	20.9
Anxiety for fall	Related	276	81.4
	Unrelated	63	18.6
Sight	Related	291	85.8
	Unrelated	48	14.2
Walking disorder	Related	313	92.3
	Unrelated	26	7.7
Activities of daily living	Related	262	77.3
	Unrelated	77	22.7
Dizziness	Related	306	90.3
	Unrelated	33	9.7

Table 6
Correlation of different characteristic variables with knowledge and attitude of fall

Variables	Mean	S.D	Spearman's rho & p-value, Sig.
Knowledge	10.05	2.22	r = 0.206
Attitude	49.7	5.75	p = 0.001
Knowledge	10.05	2.22	r = 0.252
Awareness on fall risk factors	11.48	2.16	p = 0.001
Attitude	49.7	5.75	r = 0.214
Awareness on fall risk factors	11.48	2.16	p = 0.001

Table 7

Association of demographic variables with level of knowledge and level of attitude among participants enclosed in this study.

Variables		Knowledge on Fall			Attitude on Fall		
		N	Mean Rank		N	Mean Rank	
Kruskal-Wallis Test	Kruskal-Wallis Test						
Age	≤ 20 Years	47	155.93	H = 7.010	47	143.17	H = 23.831
	21–25 Years	174	161.02	d.f = 3	174	157.05	d.f = 3
	26–30 Years	56	191.46	p = 0.072	56	175.93	p = 0.001
	> 30 Years	62	186.48	N.S	62	221.31	
Gender	Female	285	170.28	Z = 0.124	285	174.42	Z = 1.911
	Male	54	168.50	p = 0.901 N.S	54	146.67	p = 0.056 N.S
Educational Qualification	Diploma in Nursing and Midwifery	87	169.11	H = 0.052	87	125.41	H = 37.086
	P.C.B.Sc	3	159.00	d.f = 3	3	174.33	d.f = 3
	B.Sc Nursing	205	170.33	p = 0.997	205	175.27	p = 0.001
	M.Sc Nursing	44	170.95	N.S	44	233.32	
Experience in Nursing	Less than 6 Months	123	165.21	H = 7.113	123	153.56	H = 36.388
	6 Months – 2 Years	75	153.81	d.f = 4	75	163.08	d.f = 4
	2–6 Years	82	175.11	p = 0.130	82	151.40	p = 0.001
	7–10 Years	19	212.21	N.S	19	228.61	
	More than 10 Years	40	184.56		40	243.83	
Previous fall experience	Yes	148	170.50	Z = 0.083	148	152.44	Z = 2.909
	No	191	169.62	p = 0.934 N.S	191	183.61	p = 0.004
Received fall prevention education	Yes	243	176.62	Z = 1.997	243	176.14	Z = 1.839
	No	96	153.26	p = 0.046 S*	96	154.45	p = 0.066 N.S
Fall prevention activity	Extremely familiar	62	149.93	H = 7.091	62	162.38	H = 6.042
	Very familiar	103	183.88	d.f = 4	103	185.34	d.f = 4
	Somewhat familiar	126	175.00	p = 0.131	126	170.72	p = 0.196 N.S

Variables	Knowledge on Fall		N.S	Attitude on Fall	
	N	Mean Rank		N	Mean Rank
Not so familiar	32	149.84		32	149.84
Not at all familiar	16	167.38		16	143.44
H: Kruskal–Wallis test; Z: Mann-Whitney Test, $p < 0.05$ is considered as Statistically significant.					
NS – Not significant.					

Demographics		Level of Knowledge on fall			Level of Attitude on fall				
		Inadequate	Moderately Adequate	Adequate	Chi-Square Test, P-value & Sig.	Unfavorable	Moderately Favorable	Favorable	Chi-Square Test, P-value & Sig.
Age	≤ 20 Years	15 (31.9%)	26 (55.3%)	6 (12.8%)	$\chi^2 = 6.695$	0 (0.0%)	25 (53.2%)	22 (46.8%)	$\chi^2 = 14.391$
	21–25 Years	50 (28.7%)	103 (59.2%)	21 (12.1%)	d.f = 6 P = 0.350	2 (1.1%)	81 (46.6%)	91 (52.3%)	d.f = 6 P = 0.026
	26–30 Years	12 (21.4%)	32 (57.1%)	12 (21.4%)	N.S	0 (0.0%)	22 (39.3%)	34 (60.7%)	
	> 30 Years	14 (22.6%)	34 (54.8%)	14 (22.6%)		0 (0.0%)	15 (24.2%)	47 (75.8%)	
Gender	Female	78 (27.4%)	161 (56.5%)	46 (16.1%)	$\chi^2 = 0.807$ d.f = 2	0 (0.0%)	115 (40.4%)	170 (59.6%)	$\chi^2 = 13.813$ d.f = 2
	Male	13 (24.1%)	34 (63.0%)	7 (13.0%)	P = 0.668 N.S	2 (3.7%)	28 (51.9%)	24 (44.4%)	P = 0.001
Educational Qualification	Diploma in Nursing and Midwifery	19 (21.8%)	56 (64.4%)	12 (13.8%)	$\chi^2 = 3.319$ d.f = 6	1 (1.1%)	57 (65.5%)	29 (33.3%)	$\chi^2 = 33.282$ d.f = 6
	P.C.B.Sc	1 (33.3%)	2 (66.7%)	0 (0.0%)	P = 0.768 N.S	0 (0.0%)	1 (33.3%)	2 (66.7%)	P = 0.001
	B.Sc Nursing	60 (29.3%)	111 (54.1%)	34 (16.6%)		1 (0.5%)	77 (37.6%)	127 (62.0%)	
	M.Sc Nursing	11 (25.0%)	26 (59.1%)	7 (15.9%)		0 (0.0%)	8 (18.2%)	36 (81.8%)	
Experience in Nursing	Less than 6 Months	31 (25.0%)	78 (63.4%)	14 (11.4%)	$\chi^2 = 20.814$ d.f = 8	0 (0.0%)	61 (49.6%)	62 (50.4%)	$\chi^2 = 31.448$ d.f = 8
	6 Months – 2 Years	21 (28.0%)	47 (62.7%)	7 (9.3%)	P = 0.008	2 (2.7%)	30 (40.0%)	43 (57.3%)	P = 0.001
	2–6 Years	28 (34.1%)	35 (42.7%)	19 (23.2%)	S**	0 (0.0%)	43 (52.4%)	39 (47.6%)	
	7–10 Years	4 (21.1%)	8 (42.1%)	7 (36.8%)		0 (0.0%)	4 (21.1%)	15 (78.9%)	
	More than 10 Years	7 (17.5%)	27 (67.5%)	6 (15.0%)		0 (0.0%)	5 (12.5%)	35 (87.5%)	
Previous patient fall experience	Yes	38 (25.7%)	88 (59.5%)	22 1 (14.9%)	$\chi^2 = 0.404$	1 (0.7%)	73 (49.3%)	74 (50.0%)	$\chi^2 = 5.606$

Demographics		Level of Knowledge on fall			Level of Attitude on fall				
		Inadequate	Moderately Adequate	Adequate	Chi-Square Test, P-value & Sig.	Unfavorable	Moderately Favorable	Favorable	Chi-Square Test, P-value & Sig.
	No	53 (27.7%)	107 (56.0%)	31 (16.2%)	d.f = 2 P = 0.817 N.S	1 (0.5%)	70 (36.6%)	120 (62.8%)	d.f = 2 P = 0.061 N.S
Received fall prevention education	Yes	63 (25.9%)	136 (56.0%)	44 (18.1%)	$\chi^2 = 3.986$ d.f = 2	1 (0.4%)	97 (39.9%)	145 (59.7%)	$\chi^2 = 2.402$ d.f = 2
	No	28 (29.2%)	59 (61.5%)	9 (9.4%)	P = 0.136 N.S	1 (1.0%)	46 (47.9%)	49 (51.0%)	P = 0.301 N.S
Fall prevention activity	Extremely familiar	18 (29.0%)	38 (61.3%)	6 (9.7%)	$\chi^2 = 15.086$ d.f = 8	0 (0.0%)	31 (50.0%)	31 (50.0%)	$\chi^2 = 11.478$ d.f = 8
	Very familiar	27 (26.2%)	55 (53.4%)	21 (20.4%)	P = 0.057	0 (0.0%)	35 (34.0%)	68 (66.0%)	P = 0.176
	Somewhat familiar	31 (24.6%)	71 (56.3%)	24 (19.0%)	N.S	1 (0.8%)	52 (41.3%)	73 (57.9%)	N.S
	Not so familiar	13 (40.6%)	17 (53.1%)	2 (6.3%)		1 (3.1%)	17 (53.1%)	14 (43.8%)	
	Not at all familiar	2 (12.5%)	14 (87.5%)	0 (0.0%)		0 (0.0%)	8 (50.0%)	8 (50.0%)	
p < 0.05 is considered as Statistically significant.									
NS – Not significant.									

Discussion

Fall in hospitalized patients is almost always preventable (10, 11). Nurses with adequate knowledge and awareness on fall and its risk factors, are anticipated to bring about be a significant reduction in the prevalence of fall occurrence and positive influence on fall among hospitalized patients (12). In our present study, 43.7% of nurses had previous patient fall experience which is similar to that reported by various studies (13, 14). This is much higher than that reported by Kim et al (15). These differences may be due to nature of hospital infrastructure, years of nursing training program and difference in patient profiles.

Despite the fact that majority of the participants (71.7%) reported “received fall prevention education”, only 15.6% had adequate level of knowledge which was lower when compared with the study reported by Kim et al (15), where 85.7% of nurses had high level of knowledge. Similar to our study, Laing et al (16) reported a lower level of knowledge among health workers about fall. In our study majority of the nurses had working experience of less than 2 years hence low level of knowledge regarding a complex multi factorial event like fall can be attributed.

In the assessment of knowledge session of the questionnaire statements pertaining to diseases condition, treatment related and medications related to fall as expressed by the participants represented lowest of all score similar with a previous studies (15, 16). This could be attributed to not incorporating multidisciplinary evidenced based training on fall with new perspective. In India, it is a harsh reality that many hospitals neither have standard policies and procedures nor training programs on falls and its prevention. Laing et al

(16) revealed that knowledge and skills of nurses related to fall and its prevention was improved after the training confirmed the need for evidence based training. Hence, introduction of a care bundle approach frequent in-services and focus groups may enhance nurses learning and improve clinical outcomes.

This study revealed majority 57.2% had favorable attitude towards fall which supports the study by Kim CG et al (14) where the attitude level of nurses was 77.2% positive on fall. This may be due to the social and cultural empathy incorporated in training. Contradictory results have been shown in various other studies (13, 14, 17). This may be due to difference in nature of study participants (students, workers).. However, the potential gaps in awareness of fall risk factors may be addressed through developing nurse sensitive, context-specific fall-prevention clinical guidelines for practice in India.

In our study 52.2% had moderately adequate awareness on fall risk factors .In contrast 60% of health care professionals including nurses had little or some awareness on fall risk factors in a study (18, 19). Therefore, an onsite training program on awareness of fall risk factors designed for nurses is crucial and need of the hour in order to help them identify the most important risk factors for falls and translate the knowledge into practice. Majority of the participants (66.1%) expressed need for fall preventive education in this study this achieved through developing multifactorial, multidisciplinary fall preventive educational program and introducing bundle approach on fall.

The years of experience in nursing showed both strong association and positive relationship with level of knowledge. This implies that the knowledge improves as they gain more working experience because they obtain more information and hands on experience. The attitude of nurses towards fall had strong associations with age, gender, educational qualification and experience in nursing. This implies that as their experience in nursing care increases with education and patient care the more the positive attitude they develop on fall and it preventive measure.

Interestingly, our study also showed a strong correlation between knowledge, attitude and awareness of fall preventive measures with each other. This is supported by several studies as well (14, 15, 16, 20). This shows that continued medical education and training of nurses is required to bring about an overall change in fall incidents in hospitalized patients.

Conclusion

In our study, it is evident that there is a void which has to be filled to improve the knowledge, attitude and awareness on fall and its risk factors .There is a need for extensive education and holistic, multifactorial and interdisciplinary training program to be undertaken through various health care organization including governmental and non-governmental organizations regarding fall and risk factors of fall to reduce fall occurrence thereby ensuring patient safety.

Declarations

Ethics approval and consent to participate: Institutional Review Board (IRB) Approval has been obtained prior to start of the study (Panimalar Medical College Hospital & Research Institute IRB #1/2020/003). Informed Consent has been obtained from all the participants of the study.

-Consent for publication: All authors provided their consent for publication of this manuscript.

-Availability of data and material: The data used to support the findings of this study are available from the corresponding author upon request.

-Competing interests: "All the authors declare no conflict of interest."

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Figures

Figure 1

Overall percentage distribution of level of knowledge & attitude on fall and awareness of fall risk factors.