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Knowledge and practice regarding body mechanics among the nurses in a tertiary hospital of Pokhara, Nepal

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Abstract

Introduction: Body mechanics refers to the efficient, coordinated, and safe use of the body parts during physical tasks. The nursing profession experiences a high incidence of musculoskeletal injuries during patient care. Injuries can be prevented through correct body mechanics. This study aimed to assess the knowledge and practices regarding body mechanics among nurses in a tertiary hospital in Pokhara.

Method: A descriptive cross-sectional study was conducted at Pokhara Academy of Health Sciences, Nepal, during 26 Apr 2024 to 09 May 2024, among nurses working in outpatient and inpatient settings. Ethical approval was obtained. Convenience sampling was used. Knowledge and practices of body mechanics were assessed using a pre-tested, structured self-administered questionnaire. The IBM SPSS was used for descriptive and Chi-square analysis, with a significance level set at $p<0.05$.

Result: Out of 105 nurses, 38(36.2%) had a good knowledge of body mechanics. Regarding practice, 84(81.0%) demonstrated satisfactory adherence to body mechanics techniques. There was a significant association of the level of knowledge on body mechanics with working hours ($p=0.027$) and educational status ($p=0.006$).

Conclusion: Nurses exhibited an average level of knowledge but satisfactory practice. Further education on body mechanics is essential to enhance their well-being and prevent occupational injuries.

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Introduction

Body mechanics refers to the effective use of the body to perform activities such as bending, lifting, sitting, and standing safely and efficiently.[1] It involves the coordinated function of the musculoskeletal and neurological systems to maintain posture, balance, and alignment, reducing strain and preventing injuries.[2] Proper body mechanics should be applied in all activities, including rest.[3]

Core components include correct posture, body alignment, centre of gravity, base of support, balance, and coordination.[4] When lifting, objects should be held close to the body, using leg muscles instead of the back. Twisting the waist while lifting should be avoided to reduce spinal strain. Proper application of these principles conserves energy, reduces stress, and prevents musculoskeletal injurie.[5]

Despite these benefits, improper practices such as repetitive tasks, prolonged standing or sitting, awkward postures, and manual lifting contribute to musculoskeletal disorders (MSDs).[6] Nurses are at high risk for conditions such as back pain, neck pain, and muscle spasm.[7]

Nursing involves lifting, repositioning patients, and prolonged physical activity, increasing the risk of MSDs.[8] Improper body mechanics can lead to chronic pain, fatigue, and psychological distress.[9] Research shows high prevalence rates of MSDs among nurses, with back pain being the most common.[10,11] Limited studies exist locally on nurses' knowledge and practice of body mechanics. This study aims to assess these aspects among nurses in a tertiary hospital in Pokhara, Nepal.

Method

A descriptive cross-sectional study was conducted to assess the knowledge and practice of body mechanics among nurses in a tertiary hospital in Pokhara, Nepal. The study was carried out at Pokhara Academy of Health Sciences (PoAHS), the largest government healthcare facility in the Western Region of Nepal, providing diverse medical services. The hospital was selected due to its high patient flow, enough nurses, and accessibility for the researcher.

The study included all registered nurses and Auxiliary Nurse Midwives (ANM) working at PoAHS. A non-probability convenience sampling technique was used to select participants. The inclusion criteria involved registered nurses and ANMs working in outpatient and inpatient departments who were willing to participate. Nurses who were unavailable during data collection or unwilling to participate were excluded from the study. The data were collected in two weeks from 26 Apr 2024 to 09 May 2024.

A structured, self-administered questionnaire was used. Questionnaire was developed by researchers through extensive literature review. Content validity of the instrument was ensured through expert review by two nursing professors, two physiotherapy experts, and an orthopaedic professor (Content Validity Index was 0.86). Pre-testing of the instrument was carried out in 10% of the total sample (i.e. 11, for a total sample of 105) in Charak Memorial Hospital, Pokhara, Nepal. Reliability of the instrument was calculated by using Karl Pearson's correlation coefficient test by adopting Split Half technique for knowledge and Cronbach's alpha test for practice question.

The questionnaire consisted of three sections: socio-demographic information, knowledge on body mechanics (24 multiple-choice items), and practice assessment (14 items). For knowledge items, one point was awarded for each correct response and zero for incorrect responses. For multiple-response items, each correct option received a score of "1," while incorrect or

omitted responses were scored "0." Knowledge levels were categorized as poor (<50% correct), fair (50–75% correct), and good (>75% correct). The practice section included 14 positively phrased statements assessing the application of body mechanics. Responses were scored as "2" for always, "1" for sometimes, and "0" for never. Total practice scores were converted into percentage scores, with ≥60% indicating satisfactory practice and <60% indicating unsatisfactory practice. For association, knowledge level was classified as good and poor based on mean value.

Study was conducted after getting ethical approval from the Institutional Review Committee (IRC) of PoAHS (Ref. no. 13/081). Verbal as well as written consent was obtained from participants. The purpose and nature of the study as well as the importance was explained to the participants. Confidentiality was assured. Participants were assured that participation in this study was voluntary and they have the right to withdraw from the study at any time without any consequences.

The collected data was coded and entered into Epi-Data version 3.1. The entered data was exported to IBM SPSS version 23 for analysis. Descriptive statistics such as frequency, percentage, mean and standard deviation were analysed. Inferential statistical test (chi-square test) was used to test the association between level of knowledge and selected demographic variables.

Result

The result shows that more than half 67(63.8%) of the nurses were aged between 25-30 years, with a mean age of 28.44 years and SD 5.46. All nurses were female, and more than half 58(55.2%) were unmarried, majority 83(79.0%) did not have children, and 11(10.5%) had one child. More than half 66(62.9%) of the nurses had a bachelor (B.Sc. or BN) degree.

Majority 94(89.5%) of the nurses were designated as staff nurses with only 5(4.8%) holding the positions of ANM and 6(5.7%) in-charge. Regarding working department, 15(14.3%) of nurses in the study were currently working in operation theatre, 15(14.3%) in maternity ward. Regarding the working experience, more than half 56(53.3%) of the nurses had 1 – 5 years of working experience, while only 13(12.4%) over 10 years of experience. Regarding working hours, the majority 85(81.0%) of the nurses work 48 hours or fewer per week. Most of the nurses 97(92.4%) had not received training regarding body mechanics, and only 15(14.3%) reported having known musculoskeletal problems. The most common musculoskeletal issue was back pain 8(7.6%), with a few reporting other issues such as calf muscle pain, lower limb pain, and shoulder-related pain.

The knowledge regarding body mechanics among nurses, shows that one-third 38(36.2%) of the participants had good knowledge of body mechanics, more than half 55(52.4%) had fair knowledge while only 12(11.4%) of the participants had poor knowledge. The total possible score was 39, with a maximum score of 38 and a minimum score of 16. The mean score was 27.84 and SD 9.24, Table 1.

The knowledge regarding body mechanics aspect wise mean, nurses had a highest possible score of 9, with a mean of 6.13 and a standard deviation of 2.07. Regarding the principles of sitting and standing, nurses demonstrated strong knowledge with a mean of 4.23 out of 5 and lower variability (0.84). In contrast, regarding lifting principles, knowledge was moderate with a mean of 3.64 out of 5 and a higher standard deviation (1.11). Regarding transferring principles, the mean score was 3.16 out of 4, with a standard deviation of 0.98. Regarding logrolling and extension, the mean was 3.26 out of 4 with moderate variability

(0.89). Regarding knowledge of the effects of improper body mechanics, the mean score was 4.74 out of 8 with a higher standard deviation (2.15). However, regarding prevention of these effects, the lowest mean score was 2.68 out of 4, with noticeable variability (1.20), Table 2.

The practice regarding body mechanics among nurses shows 84(81.0%) of the nurses had satisfactory practice of body mechanics and 21(19.0%) of the nurses had unsatisfactory practice of body mechanics, Table 3.

Aspect wise practice score regarding body mechanics shows that most of nurses demonstrate satisfaction in comfort 83(79.0%) and transferring patients 68(64.8%), indicating strong adherence to these critical safety practices. However, the majority show unsatisfactory performance in sitting 69(65.7%), standing 65(61.9%), pushing/pulling 87(82.9%), extending 55(52.4), performing difficult tasks 84(80%), and lifting 74(70.5%), Table 4.

There was statistically significant association of level of knowledge on Body Mechanics with Working hours/week (p=0.027) and educational status of nurses (p=0.006). There was no significant association between the level of knowledge and other variables, Table 5.

Table 1. Level of knowledge regarding Body Mechanics among nurses, n=105

Level of knowledge (%)	n(%)
Good knowledge (>75)	38(36.2)
Fair knowledge (50-75)	55(52.4)
Poor knowledge (<50)	12(11.4)
Mean±SD=27.84± 9.24	

Table 2. Aspect wise mean Knowledge regarding Body Mechanics, n=105

Aspects	Maximum	Mean	SD
General information	9	6.13	2.07
Principle while sitting and standing	5	4.23	0.84
Principle while lifting	5	3.64	1.11
Principle while transferring	4	3.16	0.98
Principle while logrolling and extension	4	3.26	0.89
Effect of improper body mechanics	8	4.74	2.15
Preventing the effect of improper body mechanics	4	2.68	1.20
Over all knowledge score	**39**	**27.84**	**9.24**

Table 3. Level of Practice regarding Body Mechanics among nurses, n=105

Level of practice (%)	n (%)
Satisfactory (≥60)	84(81.0)
Unsatisfactory (< 60)	21(19.0)
Mean±SD=20.171±3.509	

Table 4. Aspect wise practice score regarding body mechanics, n=105

Performance	Satisfactory (≥60%) n(%)	Unsatisfactory (<60%) n(%)
Sitting	36(34.3)	69(65.7)
Standing	40(38.1)	65(61.9)
Pushing/pulling	18(17.1)	87(82.9)
Lifting	31(29.5)	74(70.5)
Transferring	68(64.8)	37(35.2)
Extending	50(47.6)	55(52.4)
While performing difficult task	21(20.0)	84(80.0)
Comfort	83(79.0)	22(21.0)

Table 5. Association between selected variables and Level of Knowledge, n=105

Variables	Level of knowledge		χ2-value	p-value
	Good (≥28) n(%)	Poor (<28) n(%)		
Age				
Less than or equal to 28	41(60.3)	27(39.7)	0.383	0.536
More than 28	20(54.1)	17(45.9)		
Marital status				
Married	30(62.5)	18(37.5)	0.705	0.433
Unmarried	31(54.4)	26(45.6)		
Educational level				
Diploma	16(41.0)	23(59.0)	7.426	0.006
Bachelor	45(68.2)	21(31.8)		
Area of working				
Critical units	25(64.1)	14(35.9)	0.920	0.338
Non- Critical units	36(54.5)	30(45.5)		
Work Experience (in years)				
Less than 5years	43(60.6)	28(39.4)	0.549	0.459
5 years and above	18(52.9)	16(47.1)		
Working hours/week				
>48	16(80.0)	4(20.0)	4.869	0.027
≤48	45(52.9)	40(47.1)		
Designation				
Staff nurse	55(58.8)	39(41.5)	-	1.000#
Others	6(54.5)	5(45.5)		
Training regarding body mechanics				
Yes	7(87.5)	1(12.5)	-	0.135#
No	54(55.7)	43(44.3)		
Known musculoskeletal problems				
Yes	53(58.9)	37(41.4)	0.163	0.686
No	61(58.1)	44(41.9)		

p-value <0.05 considered as statistically significant #Fisher-exact test

Discussion

This study conducted to assess the level of knowledge and practice regarding body mechanics among 105 nurses working in hospital, Pokhara, Nepal, demonstrated that 38(36.2%) had good knowledge of body mechanics, 55(52.4%) had fair knowledge while only 12(11.4%). A similar finding was reported by the study conducted in Sohag University hospital, Egypt where the result shows that 109(44.1%) of the nurses had good knowledge, 118(47.8%) fair knowledge, while only 20(8.1%) had poor knowledge.[14] Similar study conducted at Puducherry, India revealed that 11(16%) of staff nurses had adequate knowledge, 54(77%) of them had moderate knowledge and 7% of them had inadequate knowledge regarding body mechanics.[15] Another similar study conducted in Mangalore, India shows 20(40%) had very good knowledge, 25(50%) had good knowledge, and 5(10%) average knowledge. [16]

In the present study, the overall mean knowledge score regarding various aspects of proper body mechanics was 27.84 with a standard deviation SD of 9.24, out of a total possible score of 39. A similar finding was reported in a study conducted at Shriram Hospitals, Jodhpur, where the overall mean knowledge score was 11.02 with an SD of 4.96, out of a total possible score of 30.[17]

In the present study, only 36(34.3%) nurses used body mechanics techniques satisfactorily while sitting. This finding is consistent with a study conducted at the Medical College Hospital in Karnataka, where 34(37.7%) of staff nurses followed proper body mechanics while sitting.[9] The findings contradict with the study conducted at Sohag University Hospital, Egypt, which showed 147(59.5%) of nurses used body mechanics techniques satisfactorily while sitting.[14] This difference might be attributed to more structured or frequent training programs at Sohag University Hospital, as well as better ergonomic workstations, proper seating arrangements, and reminders about correct posture, encouraging better adherence

The present study illustrated that only 40(38.1%) nurses use the body mechanics techniques satisfactorily while standing. Similar study was conducted in Medical College Hospital, Karnataka which showed that 33(36.6%) staff nurses followed right body mechanics in standing.[9] Similar finding was reported by the study conducted in Sohag University Hospital, Egypt where 124(50.2%)of the nurses follows the body mechanics techniques satisfactorily while Standing.[14]

Similarly, present study revealed that 18(17.1%) nurses use body mechanics techniques satisfactorily while pulling and pushing. The finding was in line with the finding of the study conducted in Medical College Hospital, Karnataka where 16(17.7%) staff nurses followed right body mechanics while pulling and pushing.[9] Similar finding was reported by the study conducted in Sohag University, Egypt where 26(10.5%) of the nurses follows the body mechanics techniques satisfactorily while pulling and pushing.[14]

The present study showed that 31(29.5%) nurses use the body mechanics techniques satisfactorily while lifting. The finding was in line with the finding of the study conducted in Medical College Hospital, Karnataka where 19(21.1%) staff nurses followed right body mechanics while lifting.[9] Similarly finding was reported by the study conducted in Sohag University Hospital, Egypt where 67(27.1%) of the nurses follows the body mechanics techniques satisfactorily while lifting.[14]

The present study highlighted that 50(47.6%) nurses use the body mechanics techniques satisfactorily while extending. The similar finding was reported by the study conducted in

Medical College Hospital, Karnataka where 48(53.3%) staff nurses followed right body mechanics while Extending.[9] Similar finding was reported by the study conducted in Sohag University, Egypt where 132(53.4%) of the nurses follows the body mechanics techniques satisfactorily while extending.[14]

Although the aspect-wise analysis revealed unsatisfactory performance in several critical areas such as sitting, standing, lifting, pushing/pulling, extending, and performing difficult tasks, the overall practice score showed 81% of nurses having satisfactory practice. This apparent discrepancy is due to the scoring pattern used for the total practice score, where all items were combined and higher-scoring activities particularly comfort and transferring elevated the overall percentage. In addition, a large proportion of "sometimes" responses contributed partial scores, which increased the total score above the 60% cut-off. Thus, while the total score presents a satisfactory level of practice, the aspect-wise findings highlight important gaps in fundamental body mechanics skills, underscoring the need for targeted improvement in specific high-risk activities.

Present study highlighted that there were no any significant association between the selected background variables (age, marital status, children, designation, currently working unit, working experience, Training regarding body mechanics, Previous history of musculoskeletal disorders) with level of knowledge which is supported by many researchers conducted in IMS and SUM hospital India,[3] Chettinad Hospital Tamilnadu, India,[18] critical care units Puducherry, India[19].

This study has limitations. It was conducted in only one tertiary hospital in Pokhara, which limits the diversity of the sample and reduces the generalizability of the findings. The use of convenience sampling is another drawback, as it may have introduced selection bias and prevented the sample from being truly representative of the wider nursing population. The small sample size, due to time constraints, also limits the strength and applicability of the results. Despite these limitations, the study offers valuable insights into nurses' knowledge and practices related to body mechanics. The findings suggest the need for hospital authorities to strengthen in-service education through targeted training, which can improve nurses' competencies, reduce injury risks, and enhance patient care. The study also highlights the importance of providing or upgrading assistive devices and ergonomic equipment to support safe body mechanics and prevent musculoskeletal injuries.

Future studies should use probability sampling, larger sample sizes, and multiple healthcare settings to increase representativeness and generalizability, providing a clearer national picture of nurses' knowledge and practices regarding body mechanics.

Conclusion

Present study found that nurses demonstrated poor knowledge of body mechanics, while their practice score was at an exhibited satisfactory practice of body mechanics, indicating a gap between knowledge and consistent application in practice. Furthermore, a statistically significant association was identified between the level of knowledge and key variables such as educational level and working hours per week. These results underscore the need for continuous professional development, targeted training interventions, and organizational support to enhance both knowledge and practical application of proper body mechanics among nurses, thereby promoting occupational safety and improving quality of care.

Author contribution

Conception, design: All; Data acquisition: RP; Data analysis, interpretation: All; Drafting: All; Revision: All; Final approval of the version to be published: All; Agreement to be accountable for all aspects of the work: All.

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Conflict of interest

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Supplementary material

Data and supplementary material that support the findings of this study are available from the corresponding author upon reasonable request.

References

1. Kang SW. The use of body mechanics principle, clinical-practice fatigue, and practice satisfaction of nursing students. Nurs Open. 2017;3:6–10. DOI Google Scholar Full Text
2. Carini F, Mazzola M, Fici C, Palmeri S, Messina M, Damiani P, et al. Posture and posturology, anatomical and physiological profiles: overview and current state of art. Acta Biomed. 2017;88(1):11–6. DOI PubMed Google Scholar Full Text
3. Jayakrishnan K. Knowledge and Practice among Staff Nurses regarding Body Mechanics. Int J Adv Nurs Manag. 2016;4(3):259–62. Google Scholar Full Text
4. Moustafa HM, Mohamed MAER, El-Tahry SI, Ibrahim NM. Relationship Between Back Pain With Nursing Activities And The Use Of Body Mechanics Among Nurses Working In General Hospitals. Port Said Sci J Nurs. 2022;9(1):119–44. DOI Google Scholar Full Text
5. Justin Carmel. What are Body Mechanics? Jacksonville Orthopaedic Institute [Internet]. 2021 [cited 2023 Dec 23]. Link Full Text
6. Spine Institute. The Importance of Proper Body Mechanics - Keeping Your Spine Healthy [Internet]. [cited 2023 Dec 23]. Available from: https:www.spineinstitute.com Link Full Text
7. Ghazali ANM. Knowledge and Practice of Body Mechanics Techniques Among Nurses. Am J Nurs. 2018;8(7):2018–20. Google Scholar Full Text
8. Aruja MSA, Poopady SA. A Study to Assess the Effectiveness of Body Mechanics in Reduction of Low Back Pain Among Student Nurses in A Selected Nursing College at Kollam. Int J Orthop Nurs. 2020;6(2):1–8. DOI Google Scholar
9. Dressner MA, Kissinger SP. Occupational injuries and illnesses among registered nurses. Mon Labor Rev. 2018;141:1–12. Full Text
10. Tuturo BA, Tuni M, Omer MA, Medhale M. Knowledge of Body Mechanics Techniques and Associated Factors among Nurses Working in East Shewa Zone Public Hospitals, Oromia Region, Ethiopia, 2022. Int J Clin Med Educ Res. 2023;2(9):254–63. DOI PubMed Google Scholar Full Text
11. Douhal H, Jarrah S, Masa'deh R, Shudifat R. Nurses' Knowledge and Practice of Appropriate Techniques of Body Mechanics and Non-specific Back Pain. Cureus. 2024;16(3):e56488. DOI PubMed Full Text
12. Akhtar S, Afzal M, Kousar R, Waqas A, Gilani SA. Asses knowledge and practices of body mechanic technique among nurses at Punjab institute of cardiology Lahore. Saudi J Med Pharm Sci. 2017;3(6A):545–55. DOI Google Scholar Full Text
13. Vijayan S, Menon S. Knowledge, attitude and practice on body mechanics among staff nurses in critical care units. Int J Adv Res Nurs. 2023;6(2):33–7. DOI Full Text
14. Abdelal H, Ali G, Abd Elal E. Assessment of Knowledge and Practice of Nurses towards uses of Body Mechanics Techniques. Sohag J Nurs Sci. 2022;1(1):44–53. DOI Google Scholar Full Text
15. Vinodh VP, D'Souza VF, Veigas TO, Machado V, Francis J, G. GR, et al. The Knowledge and Practice of Body Mechanics Among Staff Nurses: Descriptive Correlational Study. Am Int J Res Humanit Arts Soc Sci. 2014;8(2):124–6. Google Scholar Full Text
16. Dewasi PK, Khan P. A Descriptive Study to Assess the Knowledge Regarding Proper Body Mechanic Techniques Among Staff Nurses at Selected Hospitals of Jodhpur. Int J Progress Res Sci Eng. 2020;1(3):111–3. Google Scholar Full Text
17. Sharma A, Uppaluri SC, Koushik A, Koppula A. A Study To Assess The Knowledge And Practice Of Body Mechanics Among Staff Nurses Working In Intensive Care Unit In Selected Tertiary Hospital,

Kelambakkam. Glob J Res Anal. 2019;8(6):15–7. Full Text
18. Sunny S. Usage Of Body Mechanics In Selected Nursing Activities And Its Effect On Staff Nurses: A Descriptive Study. Int J Sci Res. 2021;10(2):58–9. DOI Full Text

Questionnaire/tools

RESEARCH INSTRUMENT

Self-Administered structured Questionnaire

Research Title: Knowledge and Practice Regarding Body Mechanics among the Nurses in a tertiary Hospital of Pokhara

IDENTIFICATION DETAILS

Participants code no.:	Date:

Direction: Read out the questions one by one and tick (√) for the correct option. You can choose more than one options in multiple response questions.

Part I: SOCIO-DEMOGRAPHIC INFORMATION

S. N	Questions	Answers	CODE
D1	Age (in completed years)	…….	……..1
D2	Sex	a. Female b. Male	……..1 ……..2
D3	Marital status	a. Married b. Unmarried	……..1 ……..2
D4	Do you have children? (If no then go to number 6)	a. Yes b. No	……..1 ……..2
D5	If yes, how many children?	a. 1 b. 2 c. 3 d. More than 4	……..1 ……..2 ……..3 ……..4
D6	Educational level	a. (ANM) b. (PCL) c (BNS)/ (B.Sc. Nursing) d. (M.Sc. Nursing)/ (MN)	……..1 ……..2 ……..3 ……..4
D7	Current working department	…….	
D8	Years of Work Experience	a. <1 year b. 1yrs- 5yrs c. 6yrs- 10yrs d. 10 yrs. and above	……..1 ……..2 ……..3 ……..4
D9	Working hours/week	a. Less than or equal to 48 hours b. More than to 48 hours	……..1 ……..2
D10	Designation	a. ANM b. Staff nurse c. In-charge d. Nursing officer	……..1 ……..2 ……..3 ……..4
D11	Have you had received any training regarding body mechanics?	a.Yes b.No	……..1 ……..2
D12	Do you have any known musculoskeletal problems?	a. Yes b. No	……..1 ……..2

D13	If yes specify	……..	

Part-II Knowledge related question

Direction: Read out the questions one by one and tick (√) for correct option. You can choose more than one option in multiple response questions**.**

S. N	Questions	Answer	Code
General information			
K1	What do you mean by body mechanics?	a. Efficient, coordinated and safe use of body to carry out daily activities including during rest. b. Efficient, coordinated and safe use of body to carry out nursing procedure only c. Efficient, coordinated and safe use of body to carry out difficult task only d. Efficient, coordinated and safe use of body to build muscles and abs.	…….1 …….2 …….3 …….4
K2	What are the purposes of using proper body mechanics in nursing practice? (multiple choice)	a. To maintain good body function b. To avoid physical strain. c. To minimize the risk of injury to both the nurse and the patient. d. To provide comfort to patient.	…….1 …….2 …….3 …….4
K3	Which of the following is a component of proper body mechanics? (multiple choice)	a. Posture b. Body Alignment c. Balance d. Coordination	…….1 …….2 …….3 …….4
Principle of body mechanics **1. Sitting and Standing**			
K4	What is the normal sitting position in workplace?	a. Keep back straight and feet flat on the floor b. Lean to one side of the chair with slouched posture c. Hunch the shoulder d. Sit with crossed legs.	……1 ……2 ……3 ……4
K5	What will you do when you notice you have been seated for long period of time?	a. Get up, move around and stretch b. Lean back in the chair to rest the back c. Continue sitting and ignore discomfort d. Lean on wall or co-workers back	…….1 …….2 …….3 …….4
K6	What is the normal standing position in work place?	a. Stand in correct alignment posture and distribute weight equally on both leg b. Stand with Distribution of weight unequally on both leg c. Stand with curved back d. Lean on nearby object or for support,	…….1 …….2 …….3 …….4
K7	Which position provides greatest	a. Standing with both legs touched together, b. Standing with feet spread apart, c. Standing on one foot,	…….1 …….2 …….3

	stability while standing?	d. Standing with feet spread very far,	4
K8	What will you do when you notice you have been standing for long period of time during patient care?	a. Lean on nearby object or for support, b. Distributing weight evenly on both feet and take frequents break to stretch, c. Ignore the discomfort and continue standing, d. Curve the back and knee,	.....1 .....2 .....3 4
2. Lifting			
K9	Where should you hold the object when lifting?	a. Hold the object very far away from the body with both hand b. Hold the object to one side of the body with both hand, c. Hold the object closely on the front side of the body with both hands, d. Keep the object above your head,	.....1 .....2 .....3 4
K10	What is the benefit of using mechanical lifts in hospitals setting?	a. To reduce the work of nursing staff b. To decreases the risk of injuries and improves efficiency c. To increases hospital revenue d. To improves hospital aesthetics	.....1 .....2 .....3 4
K11	What will you do if the patient is too heavy to move?	a. Ask help from co-worker/ visitor to move the patient b. Pull the patient by their arm c. Attempt to move it alone using maximum strength d. Ask the patient to move despite of his/her injury	.....1 .....2 .....3 4
K12	How will you position yourself to lift a heavy object from the floor while maintaining proper body mechanics?	a. Bend the waist and back to reach down the floor to lift an object, b. Squat by bending the knees, keeping the back straight, and lift with leg muscles, c. Twist the body while lifting to get a better grip on the object, d. Use quick, jerking motions to lift the object rapidly,	.....1 .....2 .....3 4
K13	How will you push a heavy object such as a stretcher?	a. Push the stretcher by using only upper body strength, b. Push the stretcher by using back muscle, c. Push the stretcher by using whole body weight force, d. Push the stretchers using leg and arm muscle only,	.....1 .....2 .....3 4
3. Transferring			
K14	When transferring the conscious patient how will you let the patient know you are ready to move?	a. Node your head by looking at patient, b. Transfer without saying anything, c. Count to 1,2,3 and lift, d. Order the patient by saying move,	.....1 .....2 .....3 4
K15	When transferring patient from a bed to wheelchair, how will you assist the patient?	a. Twist the patient, b. Pivot with feet, c. Grasp the patients both hand and pull them forcefully, d. Swing the patient,	.....1 .....2 .....3 4
K16	What is the most appropriate technique for transferring the	a. Pull the patient with sudden jerky movements b. Place the stretcher far from the bed to maintain space for transfer and transfer,	.....1 2

	patient between a bed and stretcher?	c. Lift the patient and put them in stretcher alone without any assistance, d. Transfer the patient slowly and securely with the help of assistance,	.....3 4
K17	What will you do for adjusting a patient's position while they are in bed?	a. Pull the patient across the bed by their arm, b. Use a bed-sheet/draw sheet to slide the patient carefully, c. Lift the patient alone and reposition them, d. Push the patient from the back and reposition them,	.....1 .....2 .....3 4
4 Log rolling			
K18	In what type of injury log rolling is used?	a. Spinal injury b. Hand injury c. Chest injury d. Leg injury	.....1 .....2 .....3 4
K19	Which of the following factor is recommended while logrolling patients?	a. Using sudden and jerky movements to achieve the roll. b. Turn slowly and maintain proper alignment of the patient's spine with the help of assistance, c. Encourage the patient to get up and move on their own by utilizing their own strength, d. Push the patient from one side to achieve the roll,	.....1 .....2 .....3 4
5 Reaching			
K20	How will you reach the object that is highly placed?	a. Stretch our arms as far as possible to reach the object, b. Ask the patient to get up and reach the object, c. Ask help from friends or use assistive devices to reach the object, d. Stand on our tiptoes to reach the object,	.....1 .....2 .....3 4
K21	What will you do if you have to reach an object which is on the table across the patient's bed?	a. Stretch the arm across the bed to reach the object, b. Go near the table and pick the object, c. Ask the patient to reach the object and give, d. Climb on the bed and reach the object,	.....1 .....2 .....3 4
Effect of improper body mechanics			
K22	What is the immediate effect of improper body mechanics among nurses? (select multiple)	a. Muscle strain and injury b. Reduced patient safety c. Decreased efficiency in task performance d. Increased risk of patient falls	.....1 .....2 .....3 4
K23	What is the long-term effect of improper body mechanics among nurses (select multiple)	a. Low backpain, b. Spinal injury, c. DVT, d. Fatigue syndrome,	.....1 .....2 .....3 4
Measures to prevent complications of improper body mechanics			
K24	What are the preventive measures you need to follow to prevent the complications of	a. Following principle of body mechanics in every task including during rest and sleep, b. Using appropriate assistive devices while performing difficult task,	.....1 .....2 .....3 4

	improper body mechanics? (select multiple)	c. Taking frequent rest and breaks between task, d. Attending workshops and training regarding proper body mechanics,	

Part 3:

Instruction: Firstly, read the response carefully and decide how well each statement describes your body mechanics in hospital. If the statement describes your response very well, then tick "Always", indicating that you always practice body mechanics technique. If the statement does not describe your response at all, then tick "never", indicating that you never practice body mechanics technique. If the statement describes your response to some degree, then select "sometimes", indicating that you sometime practice body mechanics technique.

S. N	Questions	Always (2)	Sometimes(1)	Never (0)
P1	While sitting, I keep my back straight and place feet flat on the floor.			
P2	I keep feet's apart and keep one foot a little bit in front of the other for wide base support.			
P3	I take regular breaks to stretch and rest when standing for long period.			
P4	Instead of lifting, I roll, push, and pull the heavy objects on smooth surface.			
P5	I use my body weight to push/pull the object.			
P6	I use bed-sheet/draw sheet to move/lift the patient.			
P7	While holding objects, I hold the object close to body.			
P8	When lifting an object from floor, I bend hips and knees and keep back straight.			
P9	While transferring the patient from bed to a wheelchair, I pivot towards wheelchair, keeping my back straight.			
P10	While transferring the patient from stretcher to bed, I make sure the stretcher is parallel and near to the bed.			
P11	I always ask for help from co-worker while performing difficult tasks.			
P12	I use assistive devices (gait belt, slider boards, and mechanical lifts) as required to perform difficult task.			
P13	I don't stretch/extend my arms to reach objects that are high instead I use a stool or a ladder to reach.			
P14	I wear comfortable shoes in workplace to protect my feet from injury			