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Knowledge of Staff Nurses on Management of Deconditioning in Older Adults: A Cross- Sectional Study

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Abstract

Introduction: A significant issue facing today's acute care nurse is the ability to respond to the rising number of older adults admitted to the hospital, while simultaneously preventing complications of hospitalization, specifically deconditioning.

Objective: The aim of this paper was to examine knowledge of staff nurses on management of deconditioning in older adults, in Baguio- Benguet area in the Philippines.

Methods: The study made use of cross- sectional design. Sampling technique used was total enumeration, where 130 out of 135 nurses met the inclusion criteria. A 65 item questionnaire was used in gathering data. Data was subjected to statistical treatment where *T*- test and *F*- test were used accordingly.

Results: Number of years of nursing experience tends to deteriorate the staff nurses' knowledge on deconditioning management. Hospital affiliation is a significant factor that affects the knowledge of staff nurses on deconditioning management. Continuing education improves the knowledge of staff nurses on deconditioning management.

Conclusion: Study suggests that it is important to establish gerontology continuing education programs with a core component on deconditioning treatment and prevention to enhance nurses' knowledge on management of deconditioning so as to improve the care provided to older adults.

Keywords: Continuing Education, Deconditioning Management, Gerontological Nursing, Gerontological Program, Staff Nurses and Older adults.

INTRODUCTION

Prolonged bed rest more than 24 hours has been prescribed by physicians, at least from the time of Hippocrates (450 B.C.), to facilitate healing and rehabilitation of their patients. Prolonged assumption of the horizontal body position reduces musculo-skeletal and orthostatic stress, facilitates cerebral perfusion, and usually lowers total body energy utilization in the sick and injured so that metabolic reserves utilized for maintaining upright posture and muscular activity can be directed to those needed by the immune system for recovery. However, Hippocrates recognized some harmful effects of prolonged rest, especially loss of muscular strength and tooth (bone) demineralization. Deconditioning can occur after a day of complete bed rest (Chadwick & Mann, 2000).

The term deconditioning is used to describe the multiple changes in the body systems that occur as a result of inactivity. Impaired physical mobility, immobility, and disuse syndrome are terms that are sometimes used to describe deconditioning. There are two forms of deconditioning acute and chronic. Acute deconditioning occurs rapidly as a result of a sudden cessation of usual activity. This can occur when a person fractures a hip, is hospitalized, and is inactive for a period of time. Chronic deconditioning is a slower process in which there is a gradual reduction in activity over time. This can develop when a person reduces ambulation due to increased arthritis pain, or when grief causes a person to withdraw and reduce activity. The potential for psychosocial factors that contribute to deconditioning reinforces the importance of performing comprehensive assessments on residents to identify all factors that could impact health status (Charlotte E, 2010).

Immobility is a common pathway by which a host of diseases and problems in the elderly produce further disability. Persons who are chronically ill, aged, or disabled are particularly susceptible to the adverse effects of prolonged bed rest, immobilization, and inactivity. The effects of immobility are rarely confined to

only one body system. It may later cause a wide range of complications. Immobility in the elderly often cannot be prevented, but many of its adverse effects can be. Improvements in mobility are possible for the immobile older adults. Relatively small improvements in mobility can decrease the incidence and severity of complications, improve the well-being of the elderly as well as relieve the burden of caregivers. Virtually every body system is affected by immobility. There is an increase in heart rate, cardiac output, and stroke volume, and a reduction in maximum oxygen uptake which reduces exercise tolerance. Muscles atrophy and joint range of motion declines, leading to the formation of contractures. Inactivity also promotes bone loss and increased fracture risk. Persons who have been bedridden with an illness for a significant time are subject to functional decline. As most long-term care staff know, immobility facilitates the development of pressure ulcers. This not only affects residents who are confined to bed, but those in wheelchairs as well who may not have the strength to shift positions to relieve pressure.

Geriatric Nursing is a relatively new and developing specialty in the Philippines. This is because of the increasing geriatric population with their unique needs. In Cordillera Administrative Region alone the recorded geriatric population is 86,741 out of a total population of 1,365,412 (Total Population by Age Group, Sex and Sex Ratio: Cordillera Administrative Region, 2000). A significant issue facing today's acute care nurse is the ability to respond to the rising number of older adults admitted to the hospital, while simultaneously preventing complications of hospitalization, specifically deconditioning.

A challenge in preventing and improving deconditioning may be related to nurses' knowledge, beliefs, attitudes, and confidence. In a study of a group of RNs, responses reflected substantial gaps in their knowledge and theoretical understanding of deconditioning, and a strong belief in the need for more education on the prevention of it. The study revealed that barriers to deconditioning care included lack of education, low staffing levels, and a lack of valuing prevention efforts. These findings support the need for education to enhance the competencies of nursing staff in addressing deconditioning and staffing patterns that provide for restorative care (Gillis & McDonald, 2008).

In reality, deconditioning as a specialized course is not taught in Philippine nursing schools because Geriatric Nursing is a new and developing specialty in the Philippines. Without the knowledge for deconditioning, nurses cannot develop competence in this skill since they do not have training for it. So the problem if seen simplistically seems to be the health care workers' inability to prevent and treat deconditioning because of lack of competence in this area. Geriatric patients usually go for consultations due to age- related conditions such as arthritis, heart disease, diabetes, among others (Merck, 2006). Some geriatric patients will be admitted for further observation in the hospital. It is a common practice in local hospitals to maintain patients on bed rest as per the doctors' order. Prolonged bed rest could precipitate deconditioning in the older adult.

Based on the reviews above, considering that Geriatric Nursing is a new field, nurses have basic knowledge on preventing complications brought about by prolonged bed rest but this is incorporated in other subjects; the researchers therefore explored the nurses' knowledge in providing care in order to manage deconditioning in hospitalized older adults.

Objective of the study

This study determined the knowledge of staff nurses on management of deconditioning in older adults; the researchers developed a deconditioning management module based on the findings of the study.

Specifically, the study sought to answer the following:

1. What is the extent of knowledge of staff nurses on management of deconditioning in older adults?
2. Is there a significant difference in nurses' knowledge on deconditioning management when grouped according to years of experience, type of hospital and continuing education.

METHODS AND PROCEDURES

The study made use of the quantitative, non- experimental, descriptive, cross- sectional design. The researchers measured the knowledge of nurses on deconditioning management at one point in time. The study was conducted in Baguio- Benguet area and the hospitals that participated in the study were Saint Louis Hospital of the Sacred Heart, Benguet General Hospital and Baguio Medical Center. The total population for this study was 135 representing all the staff nurses in the three hospitals mentioned. The distribution of these staff nurses is as follows: there were 83 staff nurses from Saint Louis Hospital of the Sacred Heart, 32 staff nurses from Benguet General Hospital and 20 staff nurses from Baguio Medical Center. The locale was chosen because it has a good representation of nurses and because of the convenience to the researchers, who lived in Baguio City during the time of the study. Of the 135 staff nurses, only 130 staff nurses participated in the study. The respondents were staff nurses working in the hospitals in Baguio- Benguet who were working in all wards except obstetrics and pediatric wards. Registered Nurses who were working as volunteers at the time of the study were not likewise included.

Table 1 presents the distribution of the respondents when they are grouped according to years of nursing

experience, type of hospital and continuing education. When the respondents are grouped according to years of nursing experience, 13 staff nurses (10%) had zero to six months experience, 20 staff nurses (15.4%) had more than 6 months to one year, 19 staff nurses (14.6%) had more than one year to two years of experience and 78 staff nurses (60%) had more than two years of nursing experience. When the nurses are grouped according to type of hospital, 98 staff nurses (75.4%) were affiliated with the private hospital whereas 32 staff nurses (24.6%) were affiliated with government hospital.

When they were grouped according to continuing education, 79 staff nurses (60.8%) had attended seminars and / or conferences, 5 staff nurses (3.8%) had units in the graduate school, 38 staff nurses (29.2%) had attended seminars and / or conferences and also had units in the graduate school (Both) and 8 staff nurses (6.2%) had neither attended seminars nor had units in the graduate school (None).

The researchers utilized a questionnaire which consisted of two parts: Part I contained demographic data of the respondents; Part IIA contained questions about knowledge on deconditioning and Part IIB contained questions on management of deconditioning.

A 65 item questionnaire with a total score of 65 points was the primary tool used to measure knowledge relevant to the study. The questionnaire was constructed by the researchers based on a careful review of the available literature on deconditioning. It was then subjected for content validation by panel of experts and the results showed a mean of 3.37 which means the instrument is highly valid. The tool was then subjected for reliability testing on 20 volunteer nurses from Benguet General Hospital and it had a score of 0.75 meaning that it is reliable.

For the items on the questionnaire, if the respondents appropriately answered Yes to the respective questions, a score of 1 was given to them. But if they answered No or I don't know, no point or credit was given to them. Most of the questions in Part IIA were to be answered Yes except for numbers (2), (4), (6), (9), (11), (12), (16) and (18), in which if the respondents answered No, a score of 1 was given to them.

For Part IIB, under Thrombogenic Complications, letters (a) and (c) were to be answered Yes, whereas letters (b), (d) and (e) were to be answered No. Under Muscle Contracture, all the choices except letter (a) were to be answered Yes. For Pressure Ulcer, letters (a), (c), (d), (e) and (g) were to be answered Yes whereas, letters (b) and (f) were to be answered No. For Constipation, letters (a), (b) and (c) were to be answered Yes except letters (d) and (e) which were to be answered No. Under Muscle Weakness, letters (a) and (b) were to be answered Yes, whereas letters (c) and (d) were to be answered No. For Pulmonary Dysfunction all the choices were to be answered Yes. Under the Genitourinary System, letters (a), (c), (e) and (f) were to be answered Yes whereas letters (b), (d) and (g) were to be answered No. For Body Image Disturbance, all the choices were to be answered Yes except letter (c) which was to be answered No. Lastly, for Self-care Deficit, letters (c) and (d) were to be answered Yes, whereas letters (a), (b) and (e) were to be answered No.

All of the responses were tallied and interpreted, please refer to Table 2 on page 11. It is to be noted however, that the questionnaire used to measure the knowledge of staff nurses on deconditioning management among geriatrics, limited the answers to "yes, No and I don't know" which might have led to guessing game.

Permission to do the research was solicited from Chief Nurses of respective hospitals. After obtaining permission, the researchers distributed questionnaires to nurses in the following shifts: 7- 3, 3- 11 and 11- 7. Ethical considerations were observed including privacy and anonymity. The researchers personally asked consent from the staff nurses to participate in the study and after the staff nurses had answered the questionnaire, the researchers then collected and checked the completeness of the answers to the questionnaire. Overall, 135 questionnaires were floated but only 130 were retrieved. 5 nurses returned the questionnaire and refused to answer it.

The following scales were used in the interpretation of data gathered, based on the following:

$$\text{Range} = \frac{\text{Highest possible score} - \text{Lowest possible score}}{\text{Number of categories}} = \frac{65-0}{4} = 16.25$$

Data was collected, tabulated and processed using statistical tools which included frequency, percentage, weighted mean and standard deviation. Relationship between variables was analyzed using *t- test and f- test*. To check the significance when grouped according to type of hospital, *t- test* was used and when grouped according to years of nursing experience and continuing education, *f- test* was used. The significance of the obtained values was set at the probability level of 0.05 percent. If there existed a significant difference in groups, Scheffes' test was employed to point out where the difference lies for the groups which had more than two variables. Scheffes' test was employed for the years of nursing experience and continuing education.

PRESENTATION, ANALYSIS AND INTERPRETATION OF RESULTS

This section presents the analysis and interpretation of relevant data gathered to answer the specific questions. The study focused on the knowledge of staff nurses on management of deconditioning in older adults. The findings are hereby presented.

Table 3 presents the computed weighted mean of the extent of knowledge of staff nurses on management of deconditioning in older adults. The table shows that the staff nurses had good knowledge on Part II A with a mean score of 11.60. On individual scoring of items, it was surprising to see that 82.3% of staff nurses believe that disuse syndrome can occur after 14 days of bed rest. This could cause harm to the patients because disuse syndrome can occur after 24 hours of bed rest. Only 56.9% of staff nurses answered correctly that functional decline is the leading complication of hospitalization for elderly, while 43.1% of staff nurses got it wrong. As the patient shows improvement in mobility with exercise, gradual exercise needs to be encouraged, but it is surprising to see that only 60% of the nurses answered it correctly.

Part IIB, also shows that staff nurses had good knowledge with a mean score of 31.89. The overall knowledge had a mean score of 43.48 which is interpreted as good knowledge. For pressure ulcer prevention, pressure needs to be minimized over bony prominences, but only 57.7% of staff nurses got it right. Another surprising item is the performing of credes' method over the bladder for elderly. Only 21.5% of nurses got it correct, Credes' procedure is contraindicated among the elderly as it could cause lower motor neuron damage (Merck Manual of Geriatrics).

Based on Levine's theory, these findings have several implications to nursing. First of all, the score of "good knowledge" by the staff nurses implies that the staff nurses have basic knowledge on deconditioning management but now the implementation of care is weak. Secondly, the individual items which were scored low by the nurses was surprising in that, they could be applying some procedures to the elderly and in that case, they could be causing more harm than good and this could compromise the structural integrity of the elderly. Thirdly, compromised structural integrity could in turn affect the personal and social integrity, thus affecting the self – identity of the elderly. So nurses need to conserve the structural integrity of the elderly since it will affect the other conservation domains.

Nursing roles are continually evolving and developing and the impact of shorter hospital stays, an ageing population and new technologies is reflected in the extra demands made on the staff nurses. However the basic nursing skill of assessment continues to underpin best practice in nursing care. Detection of the deterioration of an acutely ill patient is considered to be within the realms of 'basic nursing assessment' (Ahern and Philpot 2002). The literature suggests that barriers to implementing this nursing practice include a lack of confidence among nurses, limited education and lack of emphasis regarding assessment at both undergraduate and postgraduate levels. Findings about nurses' knowledge about deconditioning vary. This study revealed that nurses had good knowledge on deconditioning management, but this is not enough. Staff nurses need to have excellent knowledge on deconditioning management. Nurses first learn about effects of immobility in their educational programs but this is not enough. Ahern and Philpot conclude that knowledge is appropriate, but implementation of care is weak.

Eliopoulos (2005) argued that gerontological education programs should contain a core component on the management of deconditioning. The core component should focus on assessment of risk for deconditioning and management interventions. This can be applied in this study since results showed substantial gaps in the knowledge of deconditioning management among staff nurses, reason being, deconditioning management is taught in undergraduate level but it is incorporated in other subjects and not taught as a specialized course.

Table 4 below shows the extent of nurses' knowledge on deconditioning management when grouped according to years of experience. There exists a significant difference on the overall knowledge with a p value of <0.001 with the nurses who have been in practice for 0 to 6 months being more knowledgeable than nurses who have been in practice for more than 6 months to 1 year, more than 1 year to 2 years and more than 2 years. The mean score for 0 to 6 months shows that this group of staff nurses had good knowledge, more than 6 months to 1 year had fair knowledge, more than 1 year to 2 years had fair knowledge, as it also applies to staff nurses with more than 2 years of experience.

One way to reverse the trend and improve the knowledge of nurses even as they advance in the years of experience according to Mary Jean, (2008), is that the new nurse orientation be created by hospitals. She observed that both new nurse graduates as well as newly hired experienced nurses had a deeper basis of knowledge and experience which can only translate into better patient care. The biggest change in the orientation methodology is moving it from an academic, classroom-based approach to one that utilizes the power of just-in-time training. By learning the competencies or skills needed for working with certain patients immediately prior to that encounter, orientees undergo a vivid and easily retained learning experience. It cements newly acquired knowledge through its immediate application in the real world. This study reveals that those staff nurses with 0-6 months experience were more knowledgeable than those with more than 6 months - 1 year, more than 1- 2 years and more than 2 years. While Jean argues that experience translates to better patient care, it is not true to this study.

According to Benner (1984), personal knowledge can be developed by the nurses through reflecting on practice experiences. Personal expertise is therefore developed through a range of experiences and can be based on a number of sources of knowledge. It is evident in this study that as nurses advance in their years of practice,

then their knowledge decreases. This is contrary to the perceived thought that with advance in years of practice, the more experience is earned and hence more knowledge. Thus, the reason for the advancing in years of practice with decrease in knowledge is alarming. This could be explained as; nurses with less years of practice are still fresh from school and therefore the grasp of knowledge is still high than nurses who have been practicing for more than 2 years which this study reveals that their knowledge would be decreasing as their years of experience advance.

Brennan and Ferell (1995) suggest that the half- life of professional knowledge is between two to five years. While there are some basic concepts that do not change, it is true that techniques and procedures are changing and improving very rapidly now. If a nurse were to spend many years practicing without updating clinical and educational skills, it would be difficult to try keep up with these changes. The results revealed that the staff nurses with more than 2 years of nursing experience had slightly less knowledge than those with 0-6months experience. It would then be safe to assume that this group of staff nurses have forgotten some skills.

It can be noted that there exists a significant difference in both Part II A and B including the overall knowledge between nurses from private and government hospitals towards deconditioning management. In Part IIA and B, nurses from private hospitals were more knowledgeable on deconditioning than nurses from government hospital although both fell under the "good knowledge" category.

Wanda Marie (2009) argues that, nurses in public hospitals are understaffed; therefore the knowledge passed down through generations of nurses from the basis of traditional understanding is altered. Traditional practices can be conveyed through observed practice, role modelling, written documents, books, journal articles, and often from 'experienced' practitioners. These practices can be imposed: 'This is the way it should be done because this is the way it has always been done' but since nurses from public hospitals are few and overworked, then time for that is not effective. Such an approach can lead to the development of a nursing culture that accepts practices as being right, without questioning their foundation and evidence base.

Saint Louis University Hospital of the Sacred Heart has a bed capacity of 240, with 83 staff nurses working in the hospital. Baguio Medical Center on the other hand has a bed capacity of 50, with 20 staff nurses and Benguet General Hospital has a bed capacity of 200 with only 32 staff nurses working there, making the nurse to patient ratio be 1:6 as compared to the other two aforementioned private hospitals whose nurse to patient ratio is 1:3. The results reveal that there was a significant difference on the knowledge of deconditioning management when the nurses were grouped according to type of hospital. Private hospital nurses were more knowledgeable than the government hospital nurses with means of 45.03 and 38.75 respectively.

Table 6 shows the extent of knowledge of nurses on deconditioning management when grouped according to continuing education. It can be gleaned that there is a significant difference in the level of nurses' knowledge when grouped according to continuing education. The overall knowledge showed a significant difference with a p value of 0.015.

Nurses who had attended seminars and / or conferences and had earned units in the graduate school (both) were more knowledgeable than nurses who had neither earned units in the graduate school nor had attended seminars and / or conferences (None), although the overall score places the nurses as having good knowledge with regards to deconditioning management. Scheffe's analysis shows no significant difference in the pairwise comparisons. However, the table reveals that the F value of 6.95, corresponding to the pairwise comparison between those who had attended seminars and had units in the graduate school (both) versus those with None, is closest to the critical value of 8.04. Thus it would be safe to assume that difference lies between these two groups of respondents.

According to the United States Bureau of Statistics (2008), the challenge to keep on top of the latest new information and practices constantly being developed in the medical field, continuing education is a vital part of any nursing career. Continuing education in nursing is not only required in nursing jobs, but is also beneficial to the practice of nursing. For example, a graduate degree or certificate in a specific area of continuing nursing education will provide nurses with updated knowledge and technology advances in their chosen field of study. Analysis of this study revealed that staff nurses who had attended seminars / conferences and had units in the graduate school (both) had higher mean than those who had attended seminars / conferences only. Nursing seminars offer an easy way to stay on top of nursing career training. Continuing education seminars keep nurses up to date with the latest technology, treatment, and medical advances that affect the nursing career and the care nurses give to patients. A nursing seminar gives nurses the chance to quickly and easily continue training and education. Another alternative is to attend conferences. Conferences often have multiple seminars open to participants on different topics related to the conference focus.

According to Indiana State Nurses Association, Today's contemporary world is in an unrelenting, constant process of change. To respond effectively to the demands of change, the nursing profession believes that learning needs to be a continuous process throughout the lifespan. Learning is individual and diversified for each person. Individual nurses are responsible for their own learning and should participate in the identification of their own learning needs to meet these identified needs.

Nurses, as professional health practitioners are legally and ethically required to maintain and enhance knowledge and skill (Hegney, 1998). However, for many nurses who have been practicing for a long period of time without attending seminar or with no continuation of education will have limited knowledge (Reid 1994). It is essential for staff nurses to maintain and enhance their knowledge and skill through attending seminars and continuing their education. This study revealed that staff nurses who had not attended seminars nor had units in graduate school (None) had good knowledge on deconditioning management. It is surprising that this group of nurses had a higher mean than those nurses who had units in the graduate school and had not attended seminars. Woodrow (2002) argues that textbooks may not be up-to-date because of the potential delay between writing and publishing. In addition, content ages as nurses use books over time. It is a common practice in schools to utilize books for lectures and this could translate well to this finding.

Attending seminars and short courses would mean that the nurses are active / interested in their profession and may also signify an active pursuit of knowledge by the professionals. Geriatric nursing is a developing profession, so there is a need for nurses to always keep themselves updated through continuing education so they can be competent in this area of practice.

CONCLUSIONS AND RECOMMENDATIONS

This study provides information on the knowledge of staff nurses on management of deconditioning. Participants' scores on the deconditioning management reflected substantial gaps in their knowledge and theoretical understanding of deconditioning. These results, although somewhat disappointing, are not surprising and support the findings of other scholars who have reported a general lack of preparation of health professionals to meet the needs of older adults in hospitals.

Based on analysis of data gathered, the following were the findings of the study:

a. Staff nurses had good knowledge on management of deconditioning in older adults.
b. There was a significant difference in the extent of knowledge of staff nurses on management of deconditioning when staff nurses were grouped according to years of nursing experience.
c. There was a significant difference on the extent of knowledge of staff nurses on management of deconditioning when staff nurses were grouped according to type of hospital.
d. There was a significant difference in the extent of knowledge of staff nurses on management of deconditioning when staff nurses were grouped according to continuing education.

Recommendations

This study has achieved its aim to establish a baseline understanding of the extent of knowledge of staff nurses on deconditioning management. In assembling and analyzing the data, a number of areas for further work have been highlighted in this study. These findings suggest that effective continuing education programs are critically needed to bring knowledge of best practices in gerontological nursing to practicing nurses. Gerontological continuing education programs should contain a core component on the management of deconditioning. The component should focus on the assessment of risk for deconditioning and management interventions.

Based on the findings of the study, the researchers therefore recommend the following:

a. Since continuing education programs are critically needed to bring knowledge of best practices in gerontological nursing to nurses, staff nurse should therefore be encouraged to go for masters degree and also to attend seminars inorder to update themselves.
b. Incorporation of a core component on management of deconditioning in the curriculum of student nurses. The component should focus on the assessment of risk for deconditioning and management interventions. For example, nurses need to know the physiological and psychological benefits of ambulation for older adults, activities to prevent sensory deprivation, and standards for promoting functional ability and self-care. This information would enhance nurses' knowledge of ways to assess and manage deconditioning with older adults.
c. Hospitals should develop a gerontological program to enhance knowledge of staff nurses on gerontological nursing.
d. Other health care professionals should be made aware of the effects of prolonged inactivity among the elderly. This is because of the trend of enhanced collaboration among healthcare professionals in improvement of quality of life. Therefore, application of this knowledge by health care professionals will enable quality outcomes for hospitalized older adults.
e. A similar type of study should be done in the future encompassing a broader participation of respondents, comparison of staff nurses and other health care professionals, with consideration to all types of interventions and varied variables.

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TABLES

Table 1: Profile of the respondents (n = 130)

Variable	Frequency	Percentage
YEARS OF NURSING EXPERIENCE:		
Zero to six months	13	10
More than six months to one year	20	15.4
More than one year to two years	19	14.6
More than two years	78	60
Total	**130**	**100**
TYPE OF HOSPITAL:		
Private	98	75.4
Government	32	24.6
Total	**130**	**100**
CONTINUING EDUCATION:		
Attended seminars and/or Conferences	79	60.8
With units in the graduate School	5	3.8
Both	38	29.2
None	8	6.2
Total	**130**	**100**

Table2: Range of scores and interpretation according to extent of knowledge on management of deconditioning in older adults.

Legend			
Part II A	**Part II B**	**Both**	**Interpretation**
0 - 4.50	0 - 11.75	0 - 16.25	Poor Knowledge
4.60 - 9.10	11.76 - 23.51	16.26 - 32.50	Fair Knowledge
9.20 - 13.70	23.52 - 35.27	32.51 - 48.75	Good Knowledge
13.80 - 18.0	35.28 - 47.00	48.75 - 65.00	Excellent Knowledge

Table 3: Extent of Knowledge of staff nurses on Management of Deconditioning in Older adults Part IIA and B

Subpart	Number of items/Perfect score	Mean Score	Interpretation
Part II A: Deconditioning	18	11.6	Good Knowledge
Part II B: Effects of immobility and interventions	47	31.89	Good Knowledge
OVER-ALL KNOWLEDGE	**65**	**43.48**	Good Knowledge

LEGEND

Part II A	Part II B	Overall	Interpretation
0 - 4.50	0 - 11.75	0 - 16.25	Poor knowledge (P.K)
4.60 - 9.10	11.76 - 23.51	16.26 - 32.50	Fair Knowledge (F.K)
9.20 - 13.70	23.52 - 35.27	32.51 - 48.75	Good Knowledge (G.K)
13.80 - 18.0	35.28 - 47.00	48.75 - 65.00	Excellent Knowledge(E.K)

Table 4: Nurses Knowledge on Deconditioning Management when grouped according to years of experience

Subpart	No. of items/ Perfect Score	0-6 mos	I	More than 6 mos –1 year	I	More than 1-2 years	I	More than 2 years	I
Part A: Deconditioning	18	11.54	Good Knowledge	11.8	Good Knowledge	12.37	Good Knowledge	11.37	Good Knowledge
Part B: Effects of immobility and interventions	47	31	Good Knowledge	19.15	Fair Knowledge	17.58	Fair Knowledge	17.5	Fair Knowledge
OVER-ALL KNOWLEDGE	65	**42.54**	Good Knowledge	**30.95**	**Fair Knowledge**	**29.95**	**Fair Knowledge**	**28.87**	**Fair Knowledge**
***P* value less than 0.001, significant**									

LEGEND

Part II A	Part II B	Overall	Interpretation
0 - 4.50	0 - 11.75	0 - 16.25	Poor knowledge (P.K)
4.60 - 9.10	11.76 - 23.51	16.26 - 32.50	Fair Knowledge (F.K)
9.20 - 13.70	23.52 - 35.27	32.51 - 48.75	Good Knowledge (G.K)
13.80 - 18.0	35.28 - 47.00	48.75 - 65.00	Excellent Knowledge(E.K)

Table 5: Nurses Knowledge on Deconditioning Management when grouped according to type of hospital

Subpart	No. of items/ Perfect Score	Private	I	Government	I
Part A: Deconditioning	18	12.33	Good Knowledge	9.38	Good Knowledge
Part B: Effects of immobility and interventions	47	32.7	Good Knowledge	29.37	Good Knowledge
OVER-ALL KNOWLEDGE	65	**45.03**	**Good Knowledge**	**38.75**	**Good Knowledge**
***p* value less than 0.001, significant**					

LEGEND

Part II A	Part II B	Overall	Interpretation
0 - 4.50	0 - 11.75	0 - 16.25	Poor knowledge (P.K)
4.60 - 9.10	11.76 - 23.51	16.26 - 32.50	Fair Knowledge (F.K)
9.20 - 13.70	23.52 - 35.27	32.51 - 48.75	Good Knowledge (G.K)
13.80 - 18.0	35.28 - 47.00	48.75 - 65.00	Excellent Knowledge(E.K)

Table 6: Nurses Knowledge on Deconditioning Management when grouped according to continuing education

Subpart	No. of items/ Perfect Score	Attended seminars/ conferences	I	With units in the graduate school	I	Both	I	None	I
Part A: Deconditioning	18	11.51	Good Knowledge	11.4	Good Knowledge	12.21	Good Knowledge	9.75	Good Knowledge
Part B: Effects of immobility and interventions	47	32.15	Good Knowledge	26.2	Good Knowledge	32.82	Good Knowledge	28.38	Good Knowledge
OVER-ALL KNOWLEDGE	**65**	**43.66**	**Good Knowledge**	**37.6**	**Good Knowledge**	**45.03**	**Good Knowledge**	**38.13**	**Good Knowledge**
***p* value is 0.015, significant**									

LEGEND

Part II A	Part II B	Overall	Interpretation
0 - 4.50	0 - 11.75	0 - 16.25	Poor knowledge (P.K)
4.60 - 9.10	11.76 - 23.51	16.26 - 32.50	Fair Knowledge (F.K)
9.20 - 13.70	23.52 - 35.27	32.51 - 48.75	Good Knowledge (G.K)
13.80 - 18.0	35.28 - 47.00	48.75 - 65.00	Excellent Knowledge(E.K)