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INDIVIDUAL FACTORS CONTRIBUTING TO LOW BACK PAIN AMONG NURSES AT ST. PETER'S HEALTH CENTRE III BUSIBO IN LWENGO DISTRICT. A CROSS-SECTIONAL STUDY.

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ABSTRACT

Background
Low back pain is a major occupational health problem and also one of the most prevalent musculoskeletal disorders, especially among nurses with significant activity limitation, functional disability, job absenteeism, and huge economic burden.

Methodology
A descriptive cross-sectional study with quantitative methods of data collection was employed which involved 40 respondents selected by convenient sampling method. Data was collected using pre-tested questionnaires.

Results
The majority of the respondents 19(48%) were aged between 26-35 years, majority of the respondents 20(50%) were Catholics, majority of the respondents 24(60%) were married, majority of the respondents 22(55%) had up to certificate level of nursing. Manual lifting of patients 38(95%), more than 5 years of working experience 26(65%), and long work hours 24(60%) contributed to low back pain among nurses.

Conclusion
Factors such as being female, manual lifting of patients, more than 5 years of working experience, and long work hours, contributed to low back pain among nurses.

Recommendation
Group exercises should be encouraged in the prevention and long-term management of low back pain.

Keywords: *Individual factors, Low back pain, Nurses, Lwengo District*
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BACKGROUND

Low back pain (LBP) is localized pain and discomfort below the costal margin and above the inferior gluteal folds with or without leg pain (Ammer et. al, 2022). Low back pain can be classified as acute, sub-acute, and chronic. Acute LBP is considered if the symptom is present for less than 6 weeks, while sub-acute and chronic LBP will be regarded as if the pain lasts from 6 to 12 weeks and more than 12 weeks respectively (Albazil et. al, 2021). Low back pain is a common cause of morbidity in hospital healthcare workers. Nursing personnel among the occupational groups within the health service are more vulnerable to low back pain (Shubrandu et. al, 2017).

Globally, low back pain (LBP) was the most commonly reported musculoskeletal condition (MSC) among nurses with a prevalence rate ranging from 33 to 90.1% attributed to patient handling manually and longstanding hours, stress, anxiety, depression, working shifts, staff shortages, and poor working conditions (Deepa et. al, 2023). Several studies have been conducted by many people, however, a study conducted by (Aisha et. al, 2021), revealed that the prevalence of low back pain among nurses was 85.7% in England, 62% in Italy, 80-90% in Hong Kong, and 63.6% in Africa, attributed to overtime duties, prolonged working hours, working posture, work shifts, obesity and lack of physical activity. In Africa, the prevalence of low back pain among nurses was found to be 44.1% - 82.7% attributed to being female, married, older age, smoking, lacking regular exercises, being overweight, involved in work requiring frequent twisting and bending, prolonged standing at the workplace, inadequate staff and heavy weight lifting (Bitew et. al, 2021).

https://doi.org/10.51168/j67hsc39
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In Sub-Saharan Africa (SSA), low back pain was regarded as an insignificant condition. However, the Global Burden of Disease (GBD, 2015) indicated that low back pain was the leading cause of disability associated with a significant amount of cost (Kagiso et. al, 2021). A cross-sectional study conducted in Nigeria by Olasupo et. al, (2023), on the prevalence of low back pain among nurses and the effects on job performance revealed that standing for a long time in the course of working, lifting patients frequently, bending or twisting frequently in the course of working and working in awkward position was greatly associated with low back pain among the nurses. In Uganda, the prevalence of low back pain among nurses was 39.6% attributed to individual factors like cigarette smoking, alcohol consumption, age, female gender, and work-related factors like working in the outpatient department, bending, lifting, overstanding, being in awkward positions and pushing patients (Aleku et. al, 2021).

The hospital administration has made some attempts to provide and encourage physiotherapy and increased staffing levels to reduce the workload, however, there are still striking cases of low back pain among them. If nothing is done low back pain will continuously prevail among nurses. Thus, the purpose of the study was to determine the individual factors contributing to low back pain among nurses at St.Peter's Health Center III Busibo, in Lwengo District.

METHODOLOGY

Study design and rationale

A cross-sectional descriptive study design employing both qualitative and quantitative data collection methods was used. Under quantitative, the findings were presented in numerical forms such as percentages and frequencies using tables, graphs, and pie charts. Under the qualitative approach, description, narration, and explanation of findings were done. The researcher chose the above methods because they allowed the collection of data at one point in time.

Study setting and rationale

The study was conducted at St.Peter's Health Center III Busibo located in Lwengo District Kyazanga sub-county, Katuulo parish, and Busibo village. The health facility contains 360 nurses and provides both curative and preventive health services to the local people of Lwengo District and the catchment areas. Some of the services provided include Antenatal care, postnatal care, immunization, dental care, and general consultations.
The main economic activity of the residents is small business activities; however, others are involved in office jobs and others in subsistence agriculture. The study area was chosen because it provided a sufficient number of respondents who were involved in the study.

Study population

The target population comprised qualified nurses working in St. Peter's Health Centre III, Busibo. It included assistant nurses, enrolled nurses, and registered nurses working in St. Peter's Health Centre III, Busibo because they were always challenged by factors contributing to low back pain among nurses at St. Peter's Health Centre III, Busibo.

Sample Size Determination

A sample size of 40 participants was selected which was the representative sample size of 45 as per Krejcie and Morgan's table of 1970 used for sample size determination.

SJ Nursing and Midwifery Africa
Vol. 1 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/j67hsc39
Original Article

Table 1: Shows the sample determination as per Krejcie and Morgan's table 1970.

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: N is for population size which is 45 and S is the sample size which is 40.

Sampling procedure

This was achieved through convenient sampling from all the qualified nurses working at St.Peter's Health Centre III Busibo mainly those working in the antenatal clinic, dental clinic, postnatal ward, maternity ward, and outpatient department.

Inclusion Criteria

The study specifically included qualified nurses in the outpatient department, antenatal clinic, dental ward, maternity ward, and postnatal ward who were on duty during the days of data collection and had given informed consent.

Exclusion criteria

The excluded were those nurses who were sick and could not participate in the study.

Definition of Variables

The study comprised of variables, that is to say, the independent and dependent variables. The independent variables were individual factors, whereas the dependent variable was low back pain.

Research Instruments

A pre-test questionnaire with close-ended questions was designed and administered to the selected respondents who had to consent to participate in the study.
To collect data with the questionnaire, the researcher conducted face-to-face interviews with the selected respondents who filled in the responses themselves because all health workers were literate enough to fill out the questionnaire by themselves. The researcher also opted for this method because it was easy to fill and allowed getting information in a very short period.

Data Collection procedures

The researcher was escorted and introduced to the respondents by the in-charge of the outpatient department. The researcher introduced herself to the nurses and gave a brief explanation about the study. The respondents who agreed signed the consent form and the researcher interviewed respondents using questionnaires. This improved efficiency and confidentiality during data collection. The researcher planned to sample 4 respondents per day for a total of 40 respondents for two weeks.

Data Management

The researcher checked for completeness, errors, and omissions in the data collected with the questionnaire before entry and analysis. The mistakes that were found were corrected before leaving the study area. Data was coded

manually and it was entered correctly in the computer. Data was managed well to ensure that confidentiality and security were guaranteed; complete tools were organized and kept in a safe locker accessible to the researcher only.

Data Analysis and Presentation

The collected data was summarized and tabulated using Microsoft Excel showing frequency tables, graphs, and pie charts of each response to make interpretation and analysis of data easier. The most frequent response was used as a measure of truth about an event and this helped to conclude chapter five of the report.

Ethical Considerations

A letter of introduction was obtained from Kampala University School of Nursing and Health Sciences, introducing the researcher and seeking permission to carry out the study from the administration of St.Peter's Health Centre III Busibo.

After permission was granted, the researcher was introduced to the in charge of the outpatient department who then introduced the researcher to the respondents. Participants were assured of maximum confidentiality of all information given and numbers instead of names were used to identify the respondents.

The study only commenced after the objectives of the study had been well explained to participants and they understood and voluntarily consented to participate in the study.

RESULTS

Demographic data

Table 2: Demographic data. (n=40)

Variable	Category	Frequency (f)	Percentage (%)
Sex	Male	10	25.0
	Female	30	75.0
	Total	40	100
Age (years)	20 – 25	08	20.0
	26 – 35	19	48.0
	36 – 45	10	25.0
	45 and above	03	07.0
	Total	40	100
Religion	Catholic	20	50.0
	Moslem	02	05.0
	Anglican	10	25.0
	Others	08	20.0
	Total	40	100
Marital status	Married	24	60.0
	Single	04	10.0
	Widowed	07	18.0
	Divorced	05	12.0
	Total	40	100
Education level	Certificate in Nursing	22	55.0
	Diploma in Nursing	10	25.0
	Bachelors in Nursing	02	05.0
	Others	06	15.0
	Total	40	100
Nature of employment	Full-time employee	26	65.0
	Volunteer	02	05.0
	Student nurse	08	20.0
	Others	04	10.0
	Total	40	100

Source: *Primary data, (2024).*

Table 2 shows: that the majority 30(75%) of the respondents were female, while the minority 10(25%) of the respondents were male, the majority of the respondents 19(48%) were aged between 26-35 years, whereas the minority of the

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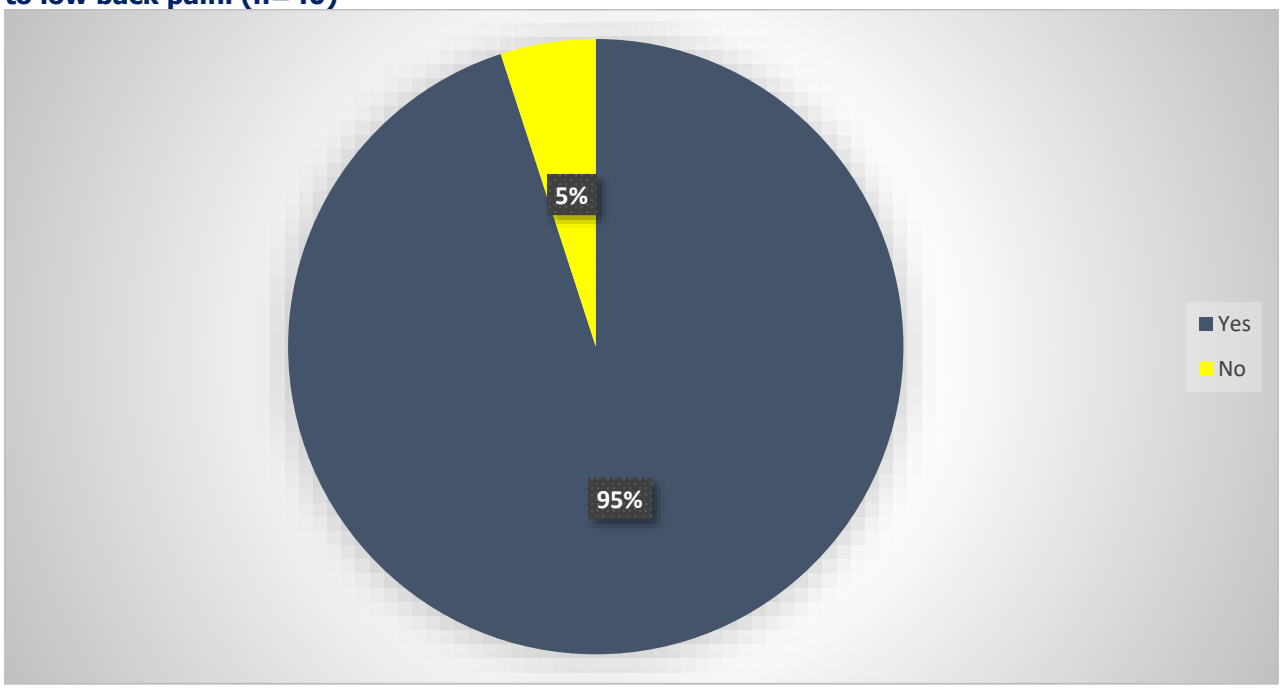
respondents 3(7%) were aged 45 years and above, majority of the respondents 20(50%) were Catholics, while the minority of the respondents 2(5%) were Moslems, majority of the respondents 24(60%) were married, whereas the minority 4(10%) of the respondents were single, majority of the respondents 22(55%) had up to certificate level of nursing, whereas the minority of the respondents 2(5%) had up to bachelors in nursing, majority of the respondents 26(65%) were full-time employees, whereas the minority 2(5%) were volunteers.

Individual factors contributing to low back pain among nurses

Figure 1: Showing respondents' opinions on whether manual lifting of patients contributes to low back pain. (n=40)



Source: *Primary data, (2024).*

In Figure 1: It was exposed that the majority of the respondents 38(95%), perceived that manual lifting of patients contributes to low back pain, while the minority of the respondents 2(5%) perceived that manual lifting of patients doesn't contribute to low back pain.

SJ Nursing and Midwifery Africa
Vol. 1 No. 12 (2024): December 2024 Issue
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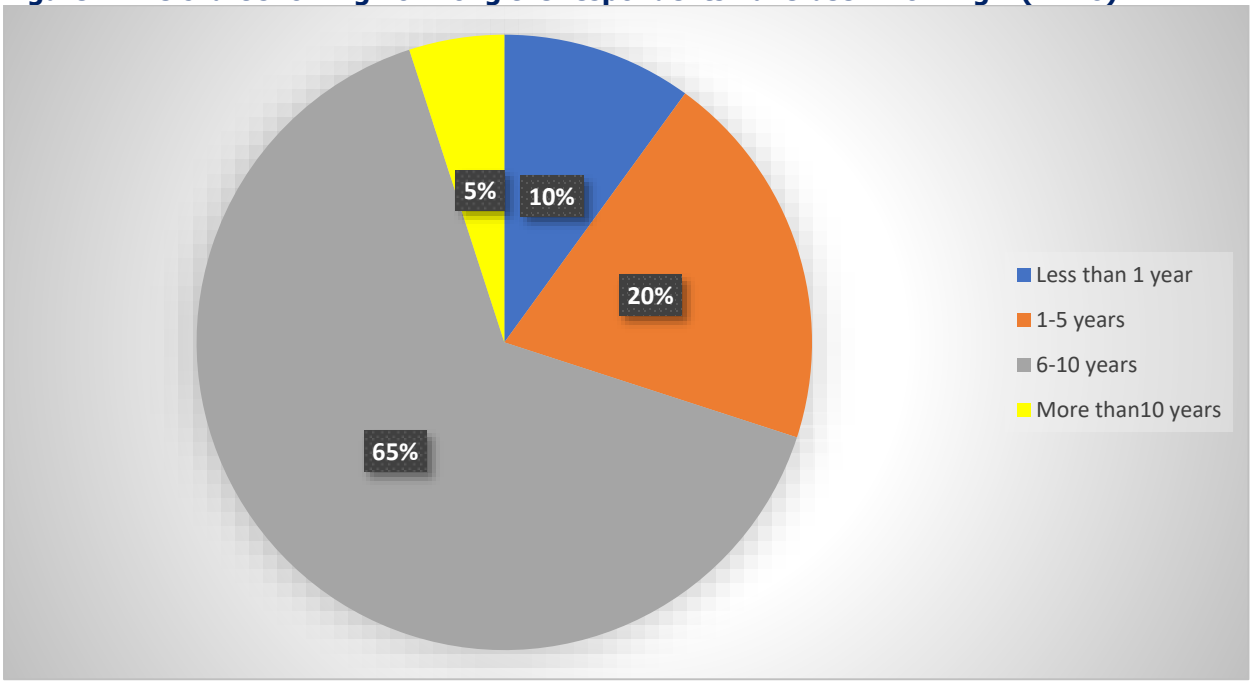
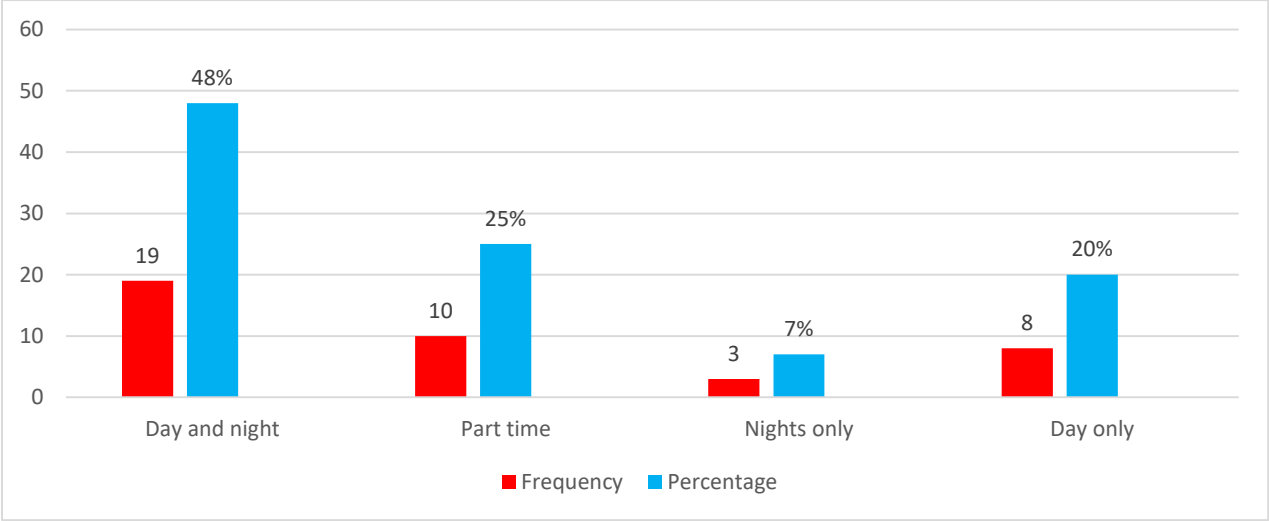
Figure 2: Pie chart showing how long the respondents have been working (n=40)



Source: *Primary data, (2024).*

From Figure 2, it was found that the majority of the respondents 26(65%) had worked between 6-10 years, while the minority of the respondents 2(5%) had worked for more than 10 years.

Figure 3: Showing the shifts that the respondent worked. (n=40)

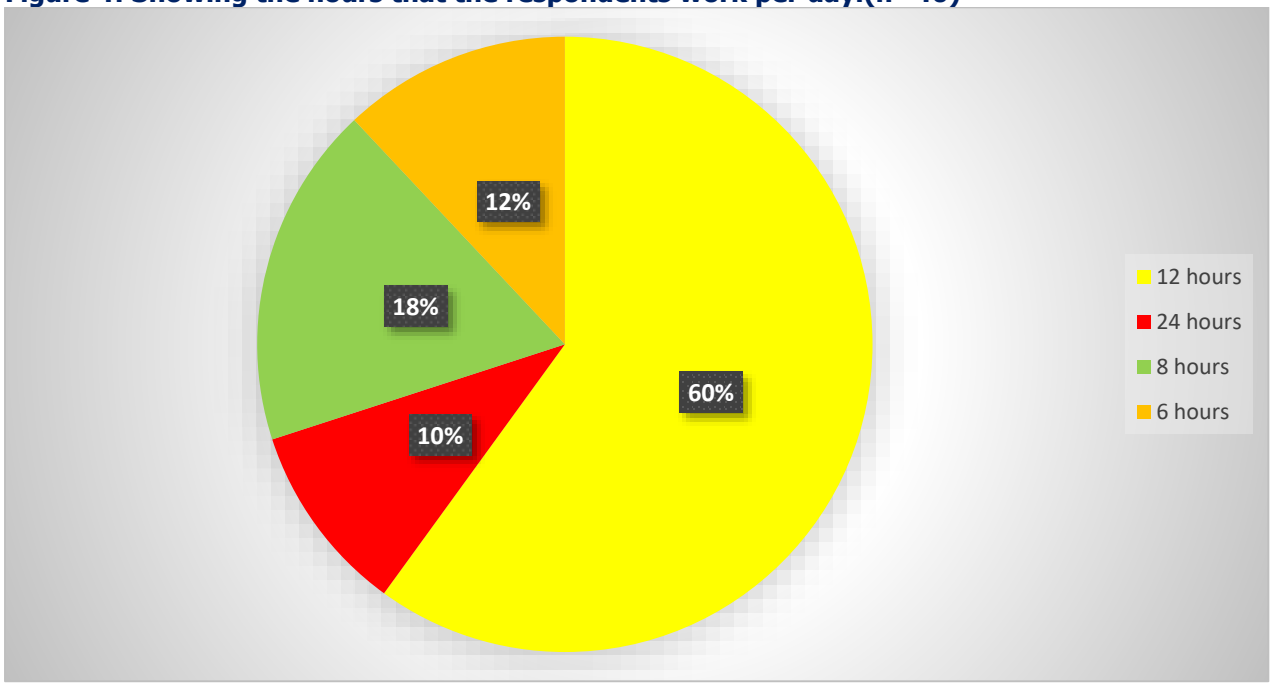


Source: *Primary data, (2024).*

It was revealed in figure3 that the majority of the respondents 19(48%) worked day and night shifts, whereas the minority of the respondents 3(7%) worked night shifts only.

SJ Nursing and Midwifery Africa
Vol. 1 No. 12 (2024): December 2024 Issue
https://doi.org/10.51168/j67hsc39
Original Article

Figure 4: Showing the hours that the respondents work per day.(n=40)



Source: *Primary data, (2024).*

It was discovered in Figure 4 that the majority of the respondents 24(60%) worked 12 hours per day, whereas the minority of the respondents 4(10%) worked 24 hours per day.

Table 3: Showing respondents' opinion on what doesn't predispose to low back pain (n=40)

Opinion	Frequency (f)	Percentage (%)
Bending and twisting	04	10.0
Regular physical exercise	30	75.0
Poor body posture	04	10.0
Prolonged standing	02	05.0
Total	40	100

Source: *Primary data, (2024).*

From Table 3, it was found that the majority of the respondents 30(75%) reported that regular physical exercise doesn't predispose to low back pain, while the minority of the respondents 2(5%) reported that prolonged standing doesn't predispose to low back pain.

DISCUSSION

Demographic data of the respondents

The majority of the respondents 30(75%) were female, whereas the minority of the respondents 10(25%) were male. This could be because the nursing profession is dominated by female nurses and they have different responsibilities and obligations that can predispose them to lower back pain than their male counterparts. This was in line with a study conducted by Bitew et. al, (2021), which stated that being female was a factor that predisposed to low back pain.

The majority of the respondents 19(48%) were in age 26-35 years and the minority of the respondents 3(7%) were aged 45 years and above. This implied that an increase in age was associated with low back pain due to different demanding

https://doi.org/10.51168/j67hsc39
Original Article

responsibilities. This was in agreement with a study conducted by Ayane et. al, (2023), in South East Ethiopia that revealed that nurses beyond 40 years had 2.388 twice as high a chance of getting low back pain than younger nurses while nurses aged between 31-40 years had 2.064 twice high chance of getting low back pain than younger nurses.

The results showed that the majority of the respondents 20(50%) were Catholics whereas the minority of the respondents 2(5%) were Moslems. This could be because the area was dominated by Catholics.

Regarding marital status, it was exposed that the majority of the respondents 24(60%) were married while the minority of the respondents 4(10%) were single. This implied that married respondents could be caught up with different responsibilities and they were more likely to encounter low back pain than their single counterparts. The study finding agreed with a study conducted by Ayane et. al, (2023), which stated that the risk of low back pain was ten times higher in divorced nurses than single nurses and it was almost two times higher in married nurses than in single nurses.

In this study, the majority of the respondents 22(55%) had up-to certificates in nursing while the minority of the respondents 2(5%) had up-to bachelors in nursing. This implied that higher academic qualification was associated with less work compared to those with low academic qualifications who were predisposed to heavy workload hence having lower back pain.

According to this study, it was discovered that the majority of the respondents 26(65%) were full-time employees whereas the minority 2(5%) of the respondents were volunteers. This implied that the respondents were subjected to long working hours coupled with increased patient load predisposing them to low back pain. The study finding was supported by a study conducted by Alshahrani et. al, (2020), in Saudi Arabia that revealed that working full-time was associated with low back pain among nursing staff.

Individual factors contributing to low back pain among nurses at St. Peter's Health Center III

The majority of the respondents 38(95%) perceived that manual lifting of patients contributes to low back pain whereas the minority of the respondents 2(5%) perceived that manual lifting of patients doesn't contribute to low back pain. This could be because manual lifting of patients puts pressure and heavy weight on the nurse's body predisposing them to low back pain. This was in agreement with a study conducted in Ethiopia by Gelana et. al, (2020), which found that manual lifting of weight > 10kg was significantly associated with low back pain among nurses.

The majority of the respondents 26(65%) had worked between 6-10 years and the minority of the respondents 2(5%) had worked for more than 10 years. This could be because long working experience was associated with working without sufficient breaks which predisposed the nurses to lower back pain. The study finding was similar to a study conducted by Gelana et. al, (2020), in Ethiopia that stated that more than 5years of work experience was significantly associated with low back pain.

The study findings revealed that the majority of the respondents 24(60%) worked 12 hours per day whereas the minority of the respondents 4(10%) worked 24 hours per day. This implied that long working hours were associated with excessive strain and fatigue on the body hence experiencing low back pain. This was in line with a study conducted by Sameh et. al, (2015), which found that enrollment in 12-hour shifts was associated with low back pain.

The majority of the respondents 30(75%) reported that regular physical exercise doesn't predispose to low back pain and the minority of the respondents 2(5%) reported that prolonged standing does not predispose to low back pain. This could be because regular physical exercise helps to keep the body fit. This was in line with a study done by Bitew et. al, (2021), in Ethiopia that stated that lack of regular exercise contributed to low back pain among nurses.

CONCLUSIONS

It was concluded that factors such as being female, manual lifting of patients, more than 5 years of working experience, and long work hours, contributed to low back pain among nurses.

RECOMMENDATIONS

- The hospital should minimize the time for which the nurses spend per week by increasing the number of nurses.
- Increasing access to nursing aid materials reduces the burden on nurses while transporting medical equipment and patients.
- Special adaptation of the occupational and recreational environment at the hospital should be considered for nurses to curtail the development of low back pain.
- Group exercises should be encouraged in the prevention and long-term management of low back pain.

IMPLICATIONS TO NURSING PRACTICE

The present research will be useful to achieve awareness among the nurses working in health facilities about a much-ignored problem which is low back pain and how it affects their quality of life.

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LIST OF ABBREVIATIONS/ACRONYMS

GBD:	Global Burden of Disease.
LBP:	Low Back Pain.
MSC:	Muscular Skeletal Conditions.
SSA:	Sub-Saharan Africa.

CONFLICT OF INTEREST

No conflict of interest declared

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AUTHOR BIOGRAPHY

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