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### Impact of educational campaign on the timely initiation of mechanical venous thromboembolism prophylaxis

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## BACKGROUND

- Venous thromboembolism (VTE) is a major health problem that affects an estimated 900,000 patients in the United States with 300,000 deaths annually.
- The Centers for Medicare and Medicaid Services no longer reimburses for this cumulative cost of VTE since it is a preventable event.
- Given the effectiveness of mechanical prophylaxis in several randomized controlled trials, nurses are pivotal in the immediate application and maintenance of SCD therapy.

## PURPOSE

To improve our institution's VTE prophylaxis practice and gap, investigators conducted this study to determine the impact of educational intervention on mechanical VTE prophylaxis and explore the barriers on its effective implementation.

## METHODS

- In this pre/post quasi-experimental study, a retrospective chart review of patients admitted for an acute medical condition from August 1st to December 31st 2017 (pre-educational campaign) and from July 1st to November 30th 2018 (post-educational campaign) was generated from MIDAS. A total of 924 charts meeting the eligibility criteria were included.
- A survey that included the nurses' demographics and their barriers to the timely initiation of mechanical VTE prophylaxis was concurrently conducted prior to the educational intervention (June 17-30, 2018) for day and night shift nurses.

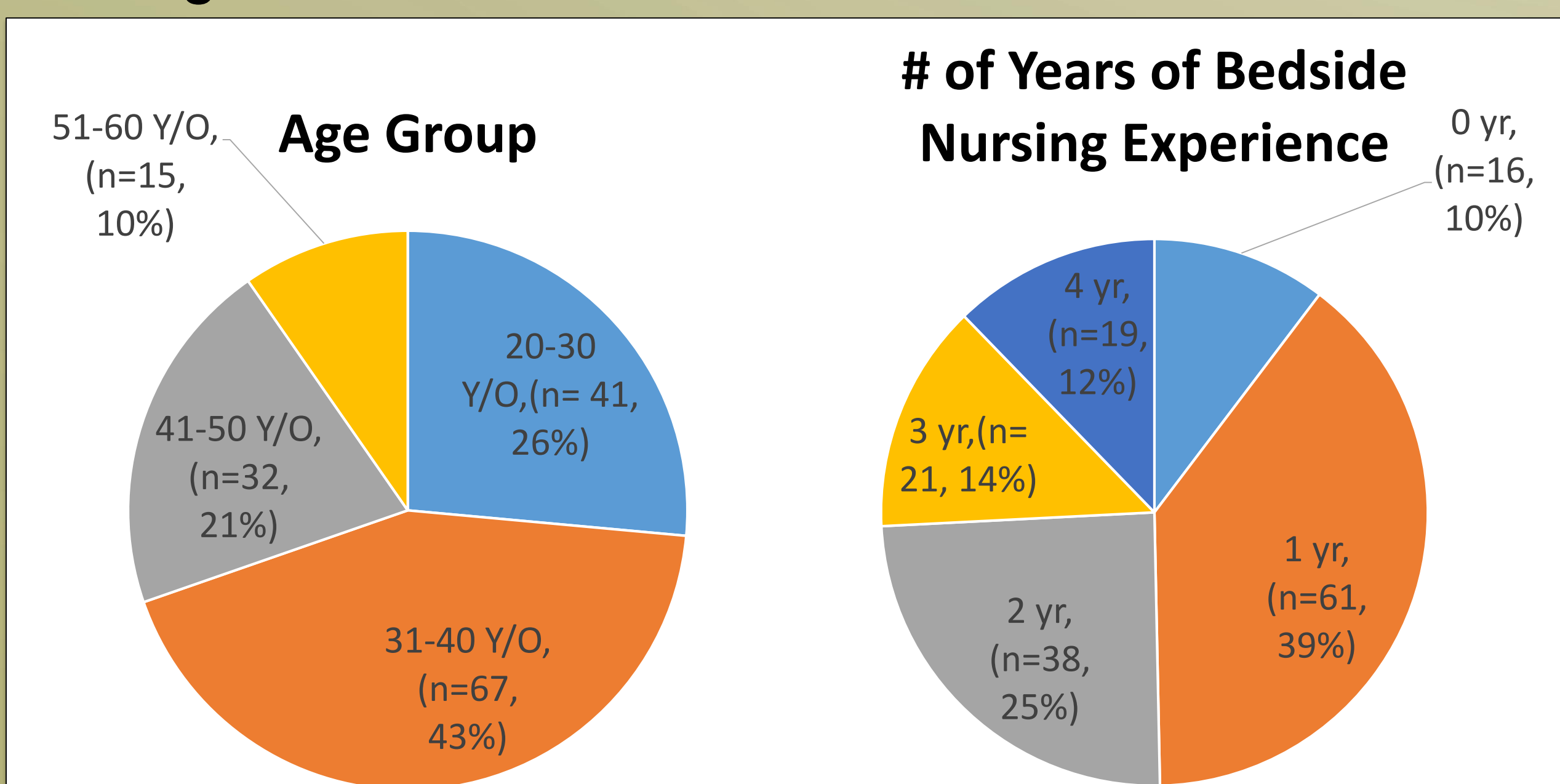


Figure 1. Demographic characteristics of subjects

## Barriers

n=135 nurses who were allowed to select more than one barrier

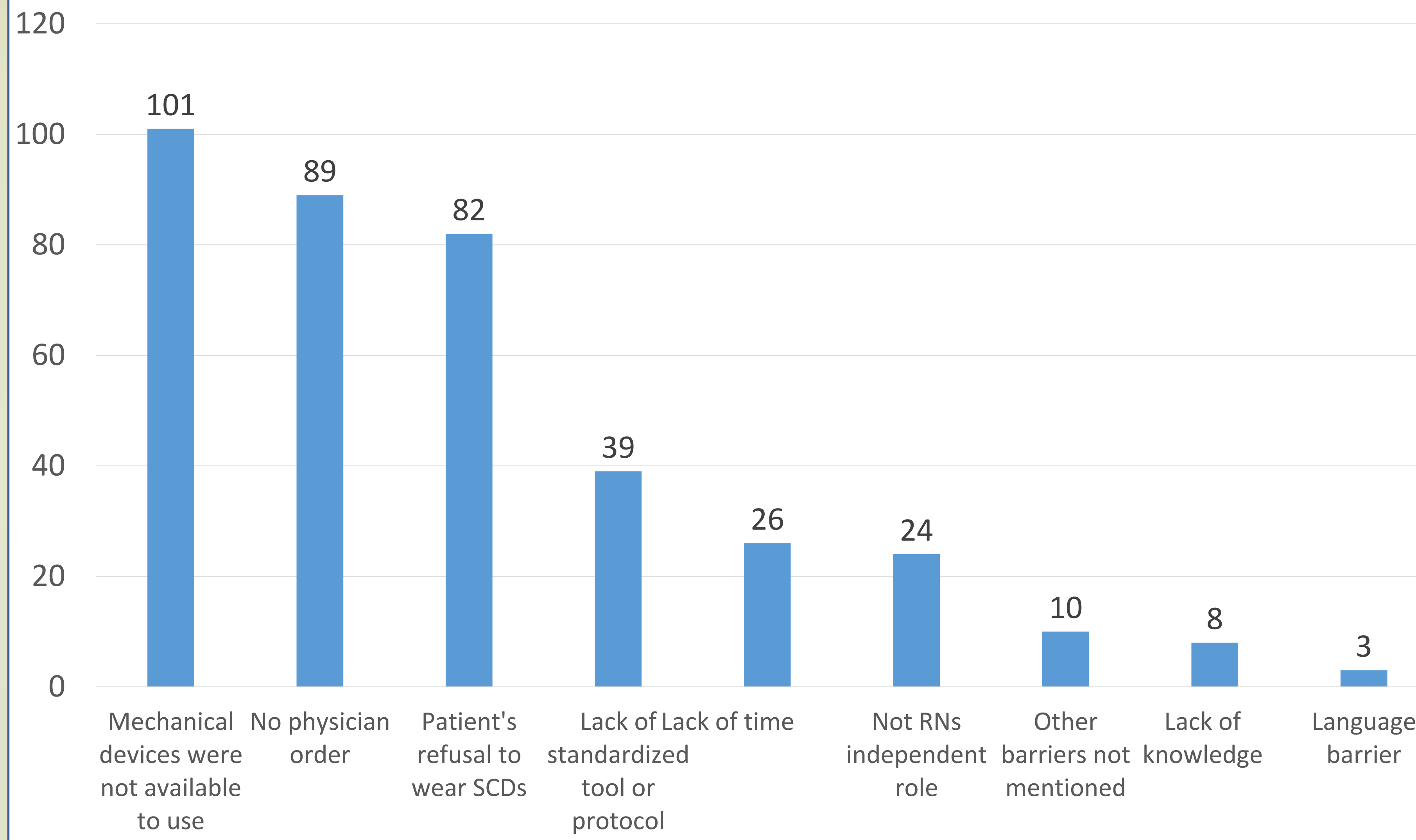


Figure 2. Barriers to adherence

Nursing Station	PRE		POST		Mann-Whitney U (*Sig)
	Frequency	Median (25th percentile, 75th percentile)	Frequency	Median (25th percentile, 75th percentile)	
3 North	155	2 (2-2)	125	2 (2-2)	z = 3.686, p = 0.000*
3 South	110	2 (2-2)	73	2 (2-2)	z = 3.205, p = 0.001*
4 South	143	2 (2-2)	143	2 (2-2)	z = 2.856, p = 0.004*
ICU	16	2 (2-2)	15	1 (1-2)	z = 2.088, p = 0.078
Observation	79	2 (2-2)	65	2 (1-2)	z = 4.365, p = 0.000*

Table 1. Descriptive statistics for number of calls pre & post intervention

Nursing Station	PRE		POST		Mann-Whitney U (*Sig)
	Frequency	Median (25th percentile, 75th percentile)	Frequency	Median (25th percentile, 75th percentile)	
3 North	155	927 (609-1553)	125	752 (481-987.5)	z = 3.728, p = 0.000*
3 South	110	956.5 (661.5-1427.75)	73	710 (405-1115)	z = 3.488, p = 0.000*
4 South	143	915 (526-1530)	143	786 (484-1112)	z = 2.558, p = 0.011*
ICU	16	719.5 (409.25-1581.5)	15	329 (144-797.5)	z = 1.621, p = 0.110
Observation	79	963 (723-1534)	65	641 (353.5-1066.5)	z = 4.127, p = 0.000*

Table 2. Descriptive statistics for time to VTE pre & post intervention

## RESULTS

- A total of 155 nurses were contacted to participate in a survey to assess barriers to initiation of VTE prophylaxis. Researchers received greater than 90% response rate (n=155) (Figure 1).
- The barriers to adherence with the highest responses were mechanical devices were not available to use (n=101, 65%), no physician order (n=89, 57%), patients refuse to wear SCDs (n=82, 53%), and lack of standardized protocol (n=39, 25%) (Figure 2).
- A total of 32 patients (3.5%) did not have a VTE ordered by the attending physician but still had an SCD placed before discharge by a nurse who initiated the process, post educational intervention.
- The findings in this descriptive statistics for the number of calls by intervention group and the results of the Mann-Whitney U independent samples test showed a statistically significant effect of the educational intervention in improving our practice and in preventing VTE incidence (Tables 1 & 2).

## IMPLICATIONS FOR PRACTICE

- Identifying the nurses' barriers on adherence to the timely initiation of mechanical VTE prophylaxis along with the educational campaign, is effective in transforming our practice and preventing our VTE incidence.
- Educational intervention on VTE prophylaxis should be conducted monthly and included in huddles.

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