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Addressing Barriers to Patient Mobilization Using an Educational Intervention in a Hospital Setting



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Background and Purpose

- Early patient mobilization in hospital settings is associated with improved functional recovery among patients^{1,2}
- Acute care clinicians may perceive barriers that delay early patient mobilization efforts¹
- This quality improvement project aimed to determine whether active or passive educational interventions reduced perceived barriers to early patient mobilization among hospital clinicians

Methods

- Post-operative orthopedic acute care nursing staff (n=50), including registered nurses and nursing assistants, and therapists (n=19), including physical and occupational therapists, participated in this study
- All participants (n=69) completed the Patient Mobilization Attitudes and Beliefs Survey (PMABS), a questionnaire of 25 scored items assessing knowledge, attitude, or behaviors associated with patient mobilization
 - 100 points possible: **higher scores signify greater perceived barriers** to patient mobilization³ (Figure 1)

| | Strongly Agree | Agree | Neutral | Disagree | Strongly Disagree |
|---|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| My inpatients are too sick to be mobilized. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| I have received training on how to safely mobilize my inpatients. | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Increasing mobilization of my inpatients will be harmful to them (i.e. falls, IV line removal, etc.). | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Figure 1. First three PMABS questions, with the first and third questions belonging to the attitude subscale, and the second question belonging to the knowledge subscale.

- Three months after completing the PMABS, nursing staff received patient mobilization education consisting of three in-service presentations on the Johns Hopkins' Culture of Mobility toolkit (JHCMT), and all clinicians were exposed to mobilization posters hung in the hospital, given flyers summarizing key points of the JHCMT, and encouraged to complete patient mobilization goal flowsheets following each shift for 6 weeks (Figure 2)

| Date and shift (Day, eve, night) | Physical therapy today(Y/N) | Nurse assessment of patient "highest level of mobility" Score | Goal for the shift | Was goal met (Y/N) | Brief explanation of failure to meet goals | Contributing factors that helped to meet the goals |
|----------------------------------|-----------------------------|---|--------------------|--------------------|--|--|
| | | | | | | |

Figure 2. Patient mobility goals flowsheet completed by clinicians for each patient seen during their shift.

- One month after the interventions, clinicians (nursing staff: n=13; therapists: n=2) retook the PMABS
- Descriptive statistics, Mann Whitney U-Tests, and Kruskal Wallis tests with pairwise comparisons were conducted with SPSS v27

Results

- There was no significant difference between global PMABS scores for pre- and post-intervention among all clinicians (p=0.28); complete results detailed in Table (Figure 3)

Table: Mean PMABS Scores for Nursing Staff and Therapists

| Score Category | PMABS Scores (Mean ± SE) | | | | | |
|--------------------|--------------------------|----------------|---------------------------|-------------------|--------------------------|---------------|
| | Pre-Intervention | | | Post-Intervention | | |
| | Overall (n=69) | Nursing (n=50) | Therapy (n=19) | Overall (n=15) | Nursing (n=13) | Therapy (n=2) |
| Global Score | 33.39 ± 1.38 | 36.93 ± 1.53 | 24.08 ± 1.56 [†] | 29.93 ± 2.44 | 31.15 ± 2.66 | 22.00 ± 2.00 |
| Attitude Subscale | 11.04 ± 0.57 | 12.44 ± 0.64 | 7.37 ± 0.68 [†] | 8.67 ± 1.06 | 9.15 ± 1.17 [*] | 5.50 ± 0.50 |
| Knowledge Subscale | 2.30 ± 0.21 | 2.85 ± 0.23 | 0.87 ± 0.29 [†] | 1.87 ± 0.39 | 2.15 ± 0.39 | 0.00 ± 0.00 |
| Behavior Subscale | 20.04 ± 0.82 | 21.64 ± 0.90 | 15.84 ± 1.42 [†] | 19.40 ± 1.42 | 19.85 ± 1.59 | 16.50 ± 2.50 |

^{*} Indicates significant difference (p<0.05) from pre-intervention score

[†] indicates significant difference between groups (nursing staff vs therapists)

- Prior to the educational intervention, nursing staff had significantly poorer PMABS scores than therapists for all categories (Table; p<0.001)
- Global PMABS scores approached significant improvement from pre- to post-intervention for nursing staff (Table; p=0.09) and did not change among therapists (Table; p=0.68) (Figure 3)
- Attitude subscale scores approached significant improvement among all clinicians (p=0.08) and improved among nursing staff alone (p=0.02), but did not improve for therapists alone (Table; p=0.39)
- There were no significant changes in knowledge or behavior subscale scores between pre- and post-intervention for any acute care staff, including nursing staff (p=0.16; p=0.36, respectively) or therapists (p=0.36; p=0.89, respectively) alone or together (p=0.37; p=0.73, respectively)

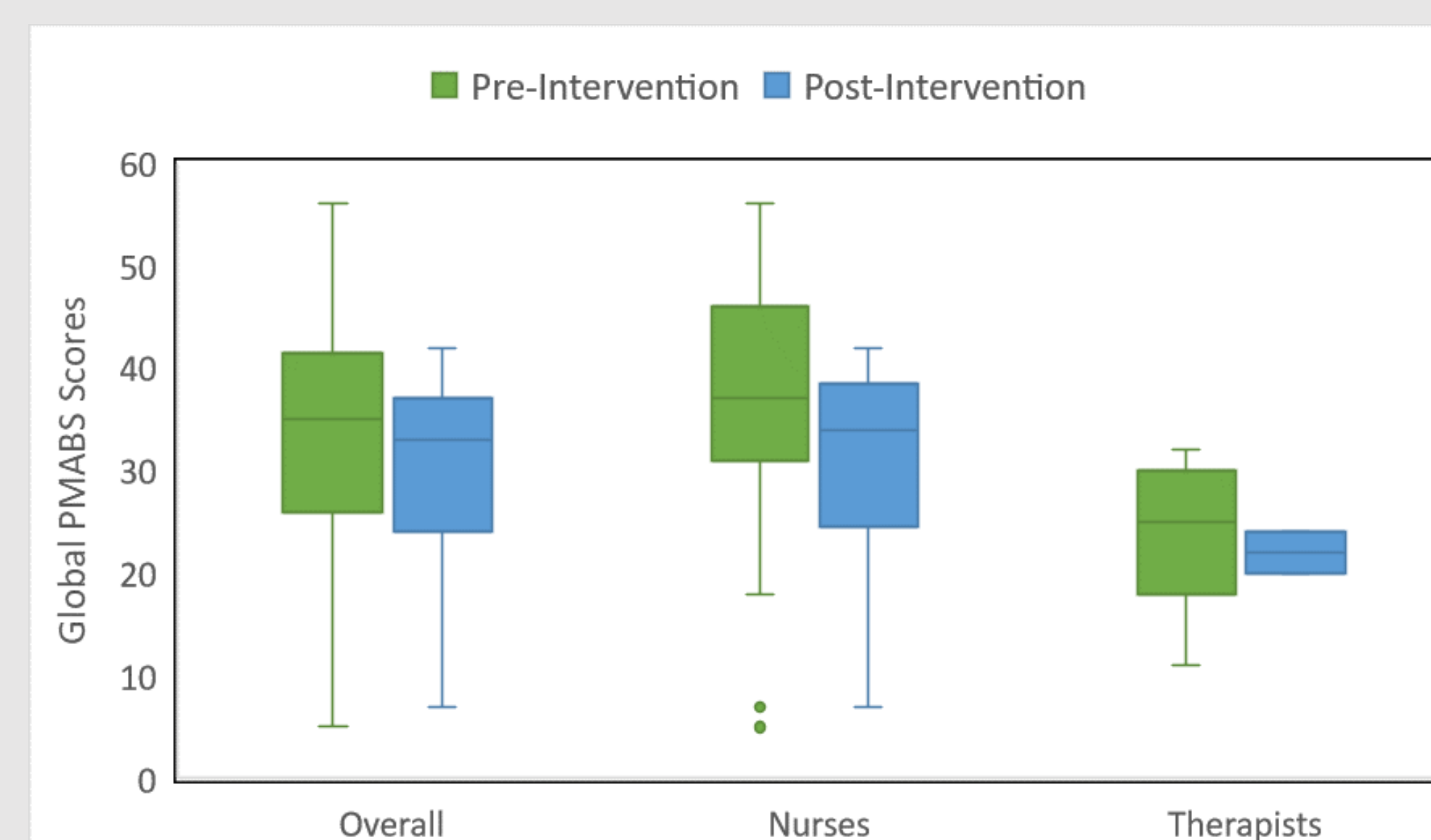


Figure 3. Average global PMABS scores for overall sample, nursing staff, and therapists pre- (green) and post- (blue) educational interventions. Central line indicates median values, box indicates interquartile ranges; range lines and outlier dots included.

Discussion

- Findings indicate that perceived barriers to early patient mobilization exist and are prevalent among acute care clinicians, but are greater among nursing staff than therapists
- A combination of in-service education trainings, posters, and flyer education trended toward a significant reduction of perceived barriers for nursing staff, while poster and flyer education alone did not reduce perceived barriers for therapists
- Active educational interventions significantly reduced attitude-based barriers for nursing staff, but did not alter knowledge or behaviors surrounding early patient mobilization
- Findings are consistent with acute care quality improvement projects, which have seen reductions in PMABS global, attitude, and knowledge scores, but not in behavior scores, with educational intervention^{4,5}
- This study demonstrates the effectiveness of educational interventions to reduce barriers to patient mobility in nurses, who play a large role in early patient mobilization efforts;⁶ thus, inappropriate consult to physical therapy for mobilization may be reduced with patient mobilization education⁷
- Collaboration of physical therapists, as mobilization experts, with other acute care providers through educational intervention may reduce mobility barriers among all acute care clinicians^{5,7}
- Study limitations include high turnover of acute care staff, complications with study implementation due to COVID-19, and lack of within-subject comparisons associated with limited study design; these conditions, although unideal, reflect typical hospital dynamics
- Further studies are needed to assess optimal educational interventions to minimize barriers associated with early patient mobilization among all acute care staff involved in direct patient care; additionally, future research is needed to identify their direct effects on long-term patient outcomes

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