

IMPLEMENTING AN EVIDENCE-BASED SURGICAL INFECTION PREVENTION PROTOCOL

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PURPOSE

- ❑ Provide an update in knowledge regarding surgical site infection (SSI) prevention and standardization through an EBP “bundle”
- ❑ Analyze the impact of the bundle intervention towards reduced colorectal surgery infections
- ❑ Assessment of nurses’ belief system and perceptions of EBP
- ❑ Examine the role of EBP change in the mitigation of risk and prevention of SSIs

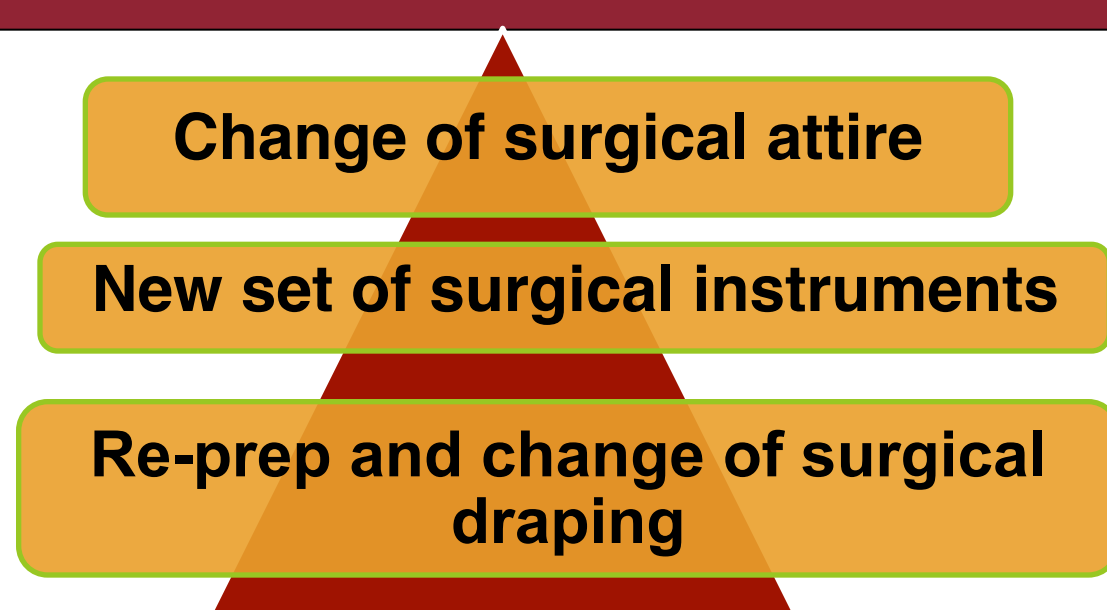
RESEARCH QUESTIONS:

- ❑ Is there a difference in SSI rates pre/post EBP intervention bundle?
- ❑ Is there a difference in nurses’ perceptions and beliefs concerning EBP pre/post educational intervention?

BACKGROUND

- ❑ SSIs which are largely preventable and more costly than any other hospital acquired infection in terms of increased morbidity, mortality, and economic expense (CDC, 2017)
- ❑ Aggressive efforts as outlined in the nationally-based Surgical Care Improvement Project has not resulted in goal achievement with respect to reducing colorectal surgical site infections
- ❑ The failure to achieve reduced rates of surgical site infection in colorectal surgery patients is a pattern that is seen institution wide, as well as in comparison with metrics of the reference population of similar institutions
- ❑ In the context of statistical trends and patient outcomes, the current practice, although consistent with national guidelines, raises questions of the need for focused modifications to the existing protocol that will mediate risk (Abunimer & Fogel, 2018)
- ❑ Gaps in practice allude to knowledge deficits with respect to infection prevention in colorectal surgery, as well as practice concerns with standardization and compliance (Zywot et al., 2017)
- ❑ As EBP has become the gold standard for quality improvement, the OR nurses’ ability to embrace change and understand the role of EBP in translating knowledge to outcomes is in need of inquiry

SURGICAL SITE INFECTION PREVENTION BUNDLE



PROCESS

Independent variable:

- ❑ Prevention bundle (Interventions tailored to the closing process in colorectal surgery)
- ❑ EBP educational intervention

Dependent variables

- ❑ Surgical Site Infection rates (categories: superficial, deep, and organ space)
 - ❑ Colorectal SSIs per 30 procedure days
 - ❑ EBP Beliefs’ Scale scores

Setting, Sample & Recruitment

- ❑ High-acuity community hospital, convenience sample of colorectal surgical nurses, voluntary participation

Humans Protections

- ❑ Participants provided with informed consent
- ❑ Regis College IRB approval/site permission

OUTCOMES

Research Design

- ❑ Descriptive, quasi-experimental, quantitative study

Demographic data

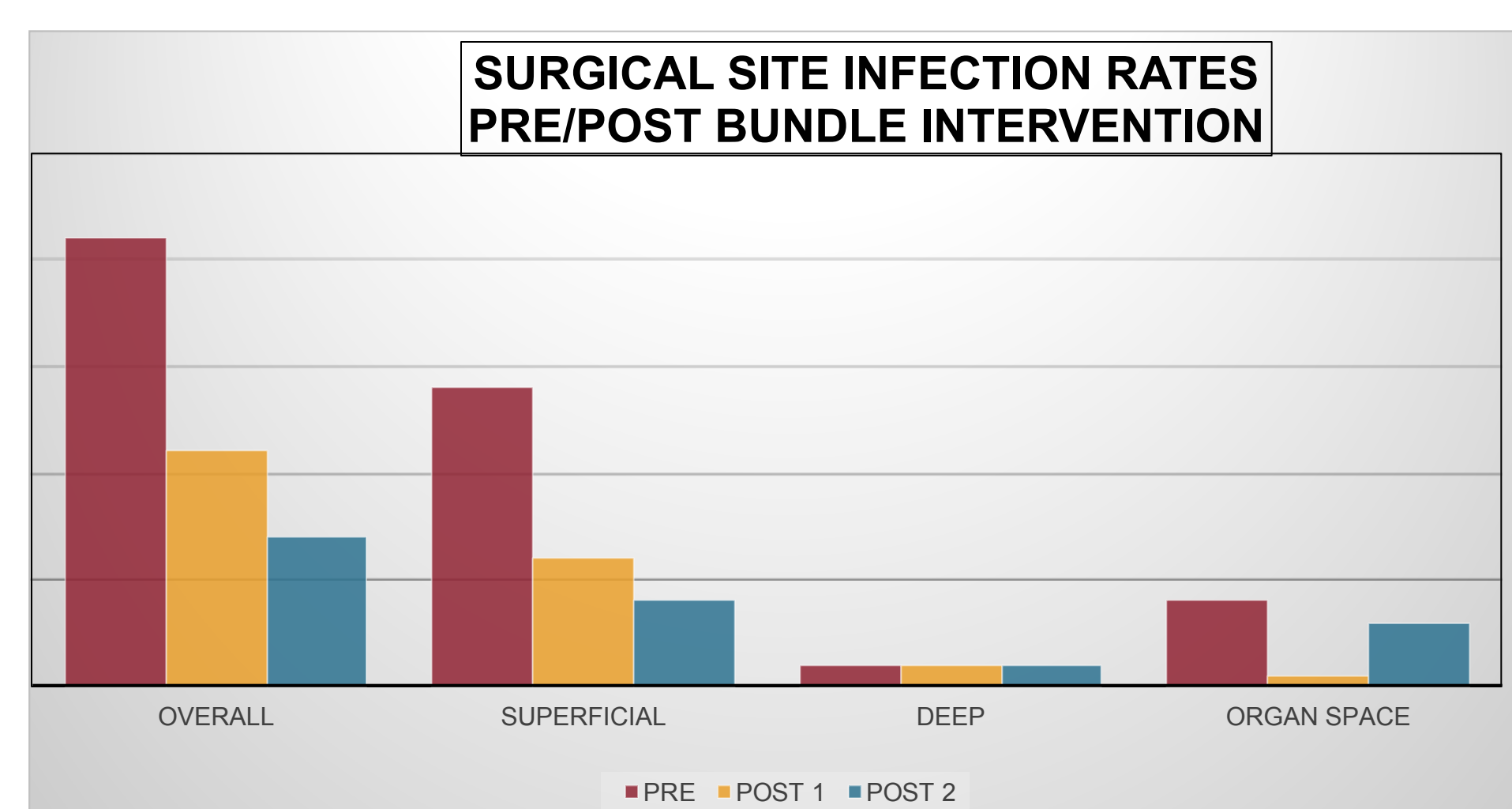
- ❑ Descriptive statistics unremarkable

Difference of Proportions test

- ❑ Infection rates pre bundle intervention vs. post bundle SSI analysis:
 - ❑ Month #1 $p = 0.144$ (failure to reject the null hypothesis)
 - ❑ Month #2 $p = 0.027$ (null hypothesis rejected)
 - ❑ Analysis by category (superficial, deep, organ space): only superficial SSIs showed a statistically significant difference

Evidence-Based Practice Beliefs (EBPB) Scale

- ❑ Pre-test vs. post-test scores analysis:
 - ❑ Cronbach’s alpha = 0.86 (good reliability of scale)
 - ❑ Two-tailed paired sample t -test $p = 0.001$ (null hypothesis rejected)
 - ❑ Shapiro-Wilk test $p = 0.063$ (assumption of normality met)
 - ❑ Levene’s test $p =$ (assumption of homogeneity met)



Methods

- ❑ Psychometric Survey: EBPB Scale (Melnik et al., 2008)
- ❑ American College of Surgeons National Quality Improvement Program (ACS-NSQIP) scores
- ❑ The Performance Dashboard application was utilized to monitor compliance/adherence to bundle implementation

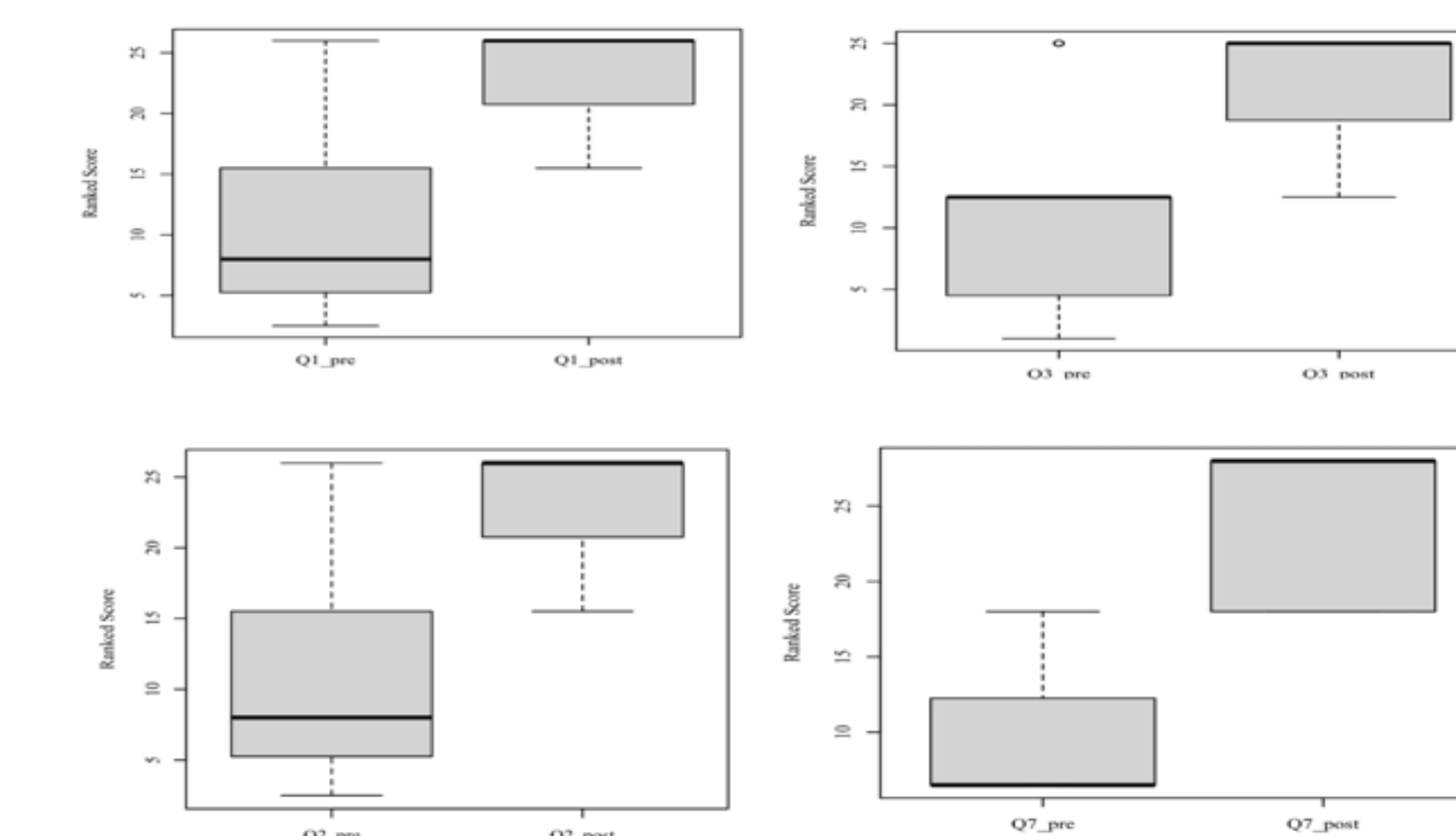
Kurt Lewin’s Change Theory (Deborah, 2018)

- ❑ Identify triggering issue for change (stagnant SSI rates in colorectal surgery)
- ❑ Plan change (educational session combining the use of EBP with instructions on the practice change)
- ❑ Implement change (bundle intervention consisting of new instruments, attire, draping at the time of surgical wound closure)
- ❑ Implement change into the normal way of doing things

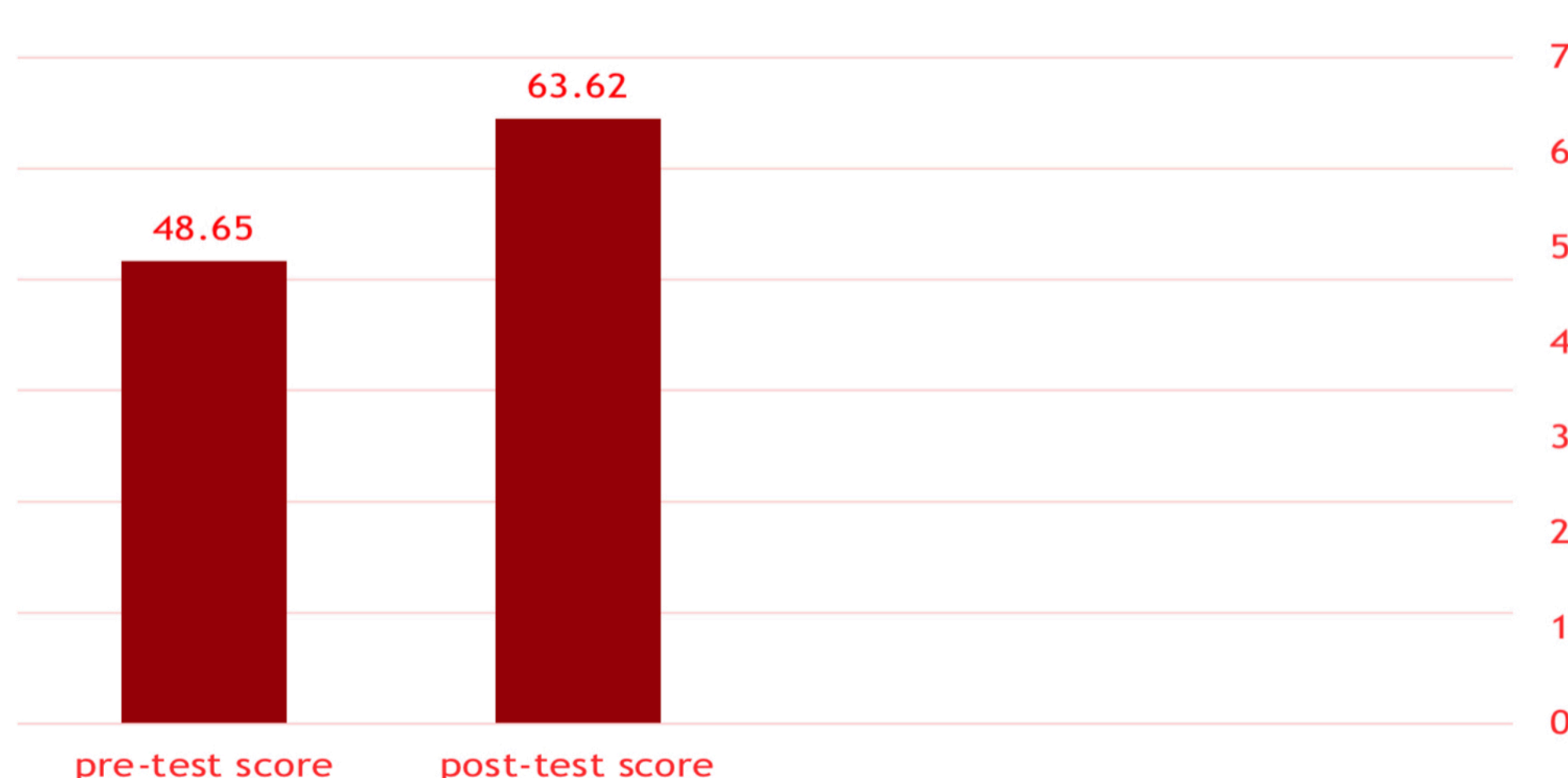
Iowa model for Evidence Based Practice Change

Two-tailed Wilcoxon signed rank test

- ❑ Individual item analysis revealed statistically significant improvement in perceptions and attitudes towards EBP
 - ❑ Item #1 Clarity regarding EBP steps
 - ❑ Item #2 Ability to overcome EBP barriers
 - ❑ Item #3 Certainty that EBP improves clinical care
 - ❑ Item #7 Difficulty in implementing EBP



EBP Beliefs Scale Mean Values



DISCUSSION

- ❑ The aim of this project was to ascertain if SSI rates could be improved through a bundle intervention with the additive feature of how nurses’ perceptions and beliefs regarding EBP play into the overall clinical picture
- ❑ The mixed report for infection rates for the surveillance months may indicate obscure issues with the implementation related to work-flow or learning curve- which could explain the presence of only statistically significant findings after the first month
- ❑ The findings are consistent with the theoretical application of Lewin’s change theory and the steps involved in successful change management and improved outcomes
- ❑ Findings of both improved SSI rates and improved EBPB scores in the second month of surveillance suggest an inherent benefit in improved perceptions and beliefs regarding EBP and clinical practice

IMPLICATIONS/CONCLUSION

- ❑ Nursing Education: Assessment of nurse’s EBP beliefs key in EPB change initiatives
- ❑ Nursing Practice: Nurse’s heightened awareness of EBP can enhance consciousness of executing EBP
- ❑ Nursing Research: Additional research needed on the role of nurses’ EBP perceptions in clinical care
- ❑ Nursing Leadership: Promote nurse’s knowledge and use of EBP in perioperative setting

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REFERENCES



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