

Impact of Post ICU Care Syndrome (PICS) Education Session on the Knowledge and Awareness of Family/Caregiver of Critically Ill Patient - Intervention Study

Trupesh Chanpura^{1,2*}, Krishna Aparanji^{3*}, Rakshit Shetty³, Shyam Gandam³, Amit Sapra⁴, Sapna Siddarth³, Sudeep Sharma⁶ and Carla M Sevin⁵

¹Chair, Critical Care Department, Springfield Clinic, Springfield, IL, USA

²Medical Director MICU, Memorial Medical Center, Springfield, IL, USA

³MD Critical care, Springfield Clinic, Springfield, IL, USA

⁴Assistant Professor, SIU Department of Family Medicine, USA

⁵Director, The ICU Recovery Center Vanderbilt, USA

⁶Assistant Professor of Management at University of IL, Springfield, IL, USA

***Corresponding Author:** Krishna Aparanji MD, Critical Care Department, Memorial Medical Center/Springfield Clinic, USA.

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Abstract

Objective: The aim is to assess the knowledge gap and the evaluate impact of Post Intensive Care Syndrome (PICS) education sessions on the Patient's family/caregiver.

Methods: We obtained IRB waiver for this project. We identified critically ill patients who are at higher risk of developing PICS. For education session, we included family/caregivers of critically ill patients suffering from acute respiratory failure required mechanical ventilator, acute delirium or septic shock. We completed educational sessions for 35 patient's families/caregivers while the patients were recovering from critical illness in the ICU. We used a website 'myICULearning.com' for education, providing resources and collected pre as well as post-session surveys to analyze the impact. We used paired sample t-test to analyze sample data.

Results: Our analysis showed statistically significant improvement among family/caregiver of critically ill patients regarding awareness about PICS-cognitive impairment, Posttraumatic stress disorder (PTSD), physical weakness; anxiety and depression.

Conclusion: Education sessions help to bridge the knowledge gap among family/caregiver regarding PICS. Future studies will be needed to evaluate the impact of peer support on reducing PICS related outcomes like hospital readmission rates, hospital length of stay (LOS), morbidity, and mortality.

Keywords: Post ICU Care Syndrome (PICS); Delirium, Post-Traumatic Stress Disorder (PTSD); Anxiety; Depression; Critically Ill Patient; Intensive Care Unit; Cognitive Impairment; Physical Debility

Abbreviations

PICS: Post Intensive Care Unit Syndrome; PTSD: Post-Traumatic Stress Disorder; ICU: Intensive Care Unit; MICU: Medical Intensive Care Unit; LOS: Length of Stay

Introduction

Post intensive care syndrome (PICS), a condition defined by new or worsening impairment in cognition, mental health, and physical function after critical illness, has been recognized in the past decade as a significant and life-altering consequence of critical illness [1].

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PICS consist of health-related problems that arise after surviving a critical illness, and it includes a spectrum of conditions like persistent cognitive dysfunction, acquired physical weakness and mental health issues akin to post-traumatic stress disorder [2].

There is a significant lack of awareness and knowledge about PICS among ICU survivors and their families. New strategies are needed to mitigate the risk of neuropsychological and functional impairment that follows a critical illness and to support and prepare the survivors on their road toward recovery [1]. Specific and focused education about key features of PICS, its effect on patients as well as family members, and potential therapeutic interventions may increase recognition of PICS and reduce its effects on survivors of critical illness [2].

A novel strategy that uses peer support groups could more effectively meet the needs of survivors of critical illness and mitigate post-intensive care syndrome [1]. So far, no published research has been done on the impact of educating the patient's family to improve awareness, early recognition and family engagement for facilitating timely intervention for post-intensive care syndrome.

Aims of the Research

Evaluate the impact of education sessions to improve awareness regarding PICS among families/caregivers of critically ill patients.

Materials and Methods

Project was started at Memorial Medical Center after obtaining IRB waiver. We selected critically ill patients who are at high-risk of developing PICS that includes patients with acute respiratory failure requiring mechanical ventilation, acute delirium, and/or septic shock. The patient's family/caregivers were identified during daily ICU multidisciplinary round for the education session from November 2019 to February 2020. The medical ICU conference room was used for our weekly education sessions. We counseled and encouraged family members to attend one PICS education session on voluntarily. They were invited to our weekly 45 minutes education session at 3 PM every Friday. Those sessions had a standardized format to eliminate variation related to presenter. The education sessions were predominantly focused on PICS symptom identification and potential solutions/resources.

PICS education session was including Physician, Registered Nurse, Social Worker, and patient's family/caregiver. The critical care provider starts with a brief introduction about PICS and asks family to complete pre-session survey. The content from the website 'MyICULearning.com' was used for educational purposes and providing resources to families. At the end of the session, families were allowed to ask questions and fill out a post-session survey.

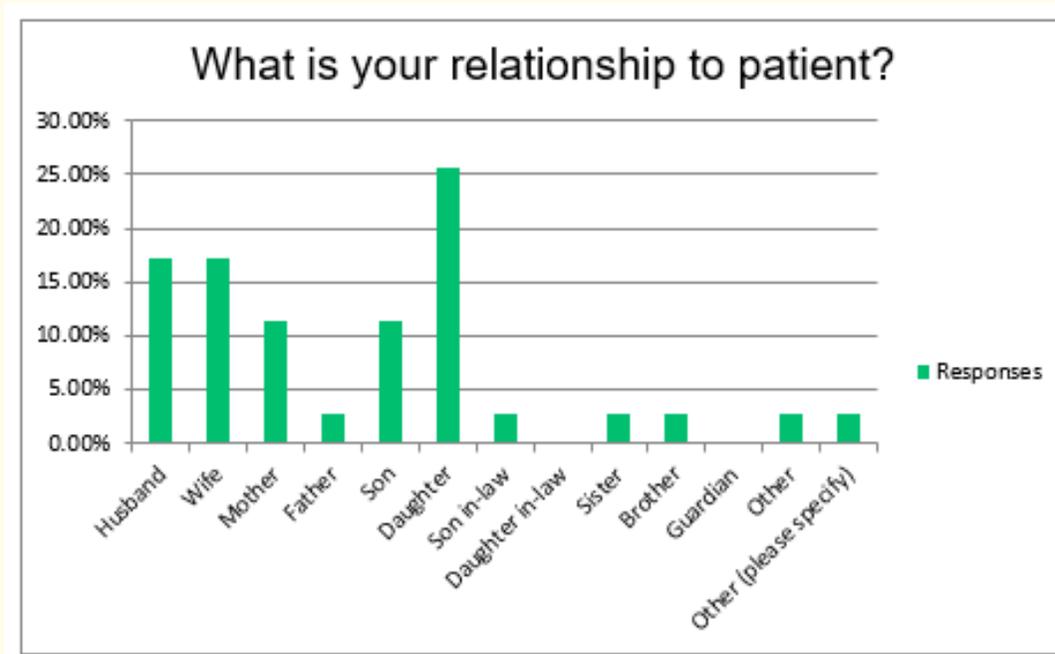
Session time was divided as follow:

- Introduction: 3 - 5 minutes
- Pre-session survey: 5 minutes
- Physician-led education by using 'MyICULearning.com': 15 - 20 minutes
- Discussion/Q & A: 5 minutes
- Post-session Survey: 5 minutes
- Final remark/Adjourn: 3 - 5 minutes.

We completed our project earlier than intended due to COVID 19 pandemic and our analysis is based on 35 families-pre and post-survey (Figure 1-see Appendix). We used paired sample T-test to evaluate impact of education session by comparing mean from pre and post session survey.

Results

Demographic distribution amongst family about relation to the patient includes as follow (N = 35).



Figure

We ran paired-sample t-test to compare the responses from pre and post education sessions. The following tables illustrate the findings of the analyses across different categories.

Question	Mean Pre-Survey	Mean Post-Survey	Mean Difference	95% Confidence Interval	t value	p value
#2	3.17	4.54	-1.37	(-1.78, -0.96)	-6.82	< 0.001
#3	3.40	5.54	-1.14	(-1.58, -0.71)	-5.35	< 0.001
#4	2.37	4.23	-1.85	(-2.27, -1.45)	-9.22	< 0.001

Table 1: The findings for cognitive impairment.

Question	Mean Pre-Survey	Mean Post-Survey	Mean Difference	95% Confidence Interval	t value	p value
#5	2.54	4.54	-2.00	(-2.49, -1.51)	-8.25	< 0.001
#6	3.26	4.48	-1.23	(-1.64, -0.82)	-6.11	< 0.001
#7	2.63	4.17	-1.54	(-1.90, -1.19)	-8.79	< 0.001

Table 2: The findings for PTSD.

Question	Mean Pre-Survey	Mean Post-Survey	Mean Difference	95% Confidence Interval	t value	p value
#8	4.09	4.69	-0.60	(-0.92, -0.28)	-3.75	< 0.01
#9	3.97	4.66	-0.69	(-1.08, -0.29)	-3.51	< 0.01
#10	2.86	4.29	-1.43	(-1.85, -1.01)	-6.93	< 0.001

Table 3: The findings for physical weakness/debility.

Question	Mean Pre-Survey	Mean Post-Survey	Mean Difference	95% Confidence Interval	t value	p value
#11	3.63	4.66	-1.03	(-1.46, -0.60)	-4.88	< 0.001
#12	3.74	4.69	-0.94	(-1.29, -0.60)	-5.59	< 0.001
#13	3.11	4.37	-1.26	(-1.65, -0.86)	-6.49	< 0.001

Table 4: The findings for anxiety and depression.

Overall, the results suggest that there are significant mean differences in terms of PICS awareness between pre and post education sessions. Patient’s family members were more aware about PICS after the education session than before the education session. Most significant impact was noted in cognitive impairment and PTSD categories in our sample population.

Discussion

Post Intensive Care Syndrome is now being recognized as a public health burden due to the associated neuropsychological and functional disability, however its exact prevalence remains unknown [3]. Society of Critical Care Medicine (SCCM) has created a collaborative task force to support the survivors affected by PICS. PICS can affect the patients in many ways, but most commonly causes ICU-acquired physical weakness, cognitive dysfunction, and mental health issues (like anxiety, depression, PTSD, etc.). There are management options available for physical deconditioning like- Physical Therapy/Occupational Therapy, for cognitive impairment like- speech evaluation, memory training; and for mental health issues - behavior therapy, group sessions, and pharmacological management. Earlier detection of PICS symptoms and a timely referral for therapeutic intervention may reduce the burden on healthcare related to PICS. It would also have a positive impact on the quality of life, hospital readmission, morbidity, and mortality.

We realized that family/caregiver empowerment could bridge some of the gap in PICS related patient care. We found using education session can improve PICS awareness among family/caregiver. Our survey result showed a statistically significant improvement in PICS related awareness. SCCM THRIVE collaborative has been instrumental in educating patients and arranging follows up with outpatient PICS clinic after discharge from the hospital. At our institution, we initiated outpatient PICS clinic in the past but due to limitations like the knowledge gap in ICU survivor patients and families, hospital resources, and a high no show rate precluded us from continuing with PICS clinic. From our experience we learnt that it’s important to strengthen the process at its core by providing knowledge and resources to the patient’s family that empower them to recognize and seek medical help for patients suffering from post-intensive care syndrome. Our approach is unique, by involving and empowering the patient’s family/caregiver to reduce health care burden related to post intensive care syndrome. Our goal is to make the family/caregiver watch for symptoms of PICS and timely seeking medical attention by using resources available in the local community.

The strength of our study is shedding light on a unique perspective of family empowerment via education as a peer support group for PICS related research. Limitations include a single-center study with a small number of cases.

Conclusion

There was a statistically significant impact of PICS related educational sessions to improve awareness among the patient’s family. There should be a further multicenter trial to evaluate the impact of family education sessions related to PICS among ICU survivor’s outcome like quality of life after discharge, hospital readmission rate and 30-day mortality.

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Conflict of Interest

None.

Appendix

Post-Intensive Care Syndrome

* 1. What is your relationship to patient?

Husband Son Sister

Wife Daughter Brother

Mother Son in-law Guardian

Father Daughter in-law Other

Other (please specify)

* 2. Are you aware, that Cognitive impairment issues may manifest in Post-ICU period

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 3. Rate your awareness regarding, how Cognitive impairment can affect day to day life.

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 4. Rate your awareness regarding potential solutions to cognitive issues

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 5. Are you aware that, you may see symptoms of PTSD in post-ICU period?

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 6. Rate your awareness regarding How PTSD can affect day to day life

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 7. Rate your awareness regarding potential solutions to PTSD problems

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 8. Are you aware, you may see Physical weakness

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 9. Awareness regarding How Physical weakness affects day to day life

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 10. Potential solutions to physical weakness

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 11. Are you aware you may see symptoms of Anxiety and Depression

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 12. Awareness regarding how Anxiety and Depression may affect daily life

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 13. Awareness regarding Potential solutions for Anxiety and/or Depression

Not at all aware Not so aware Somewhat aware Very aware Extremely aware

* 14. Family Engagement Awareness Questionnaire: Do you have understanding of the following. (Check all that apply)

Frequent Reorientations

Changes in Medications

Equipment

Follow-up Appointments

Figure 1: PICS survey questionnaire - Pre and post session.

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