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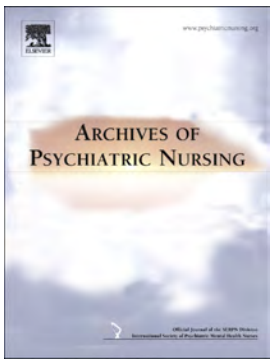


# The Value of Intentional Self-Care Practices: The Effects of Mindfulness on Improving Job Satisfaction, Teamwork, and Workplace Environments

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Title Page

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**Abstract**

**Background:** Burnout rates amongst nurses have detrimental impact on job satisfaction, teamwork, and patient care. This costs millions of dollars in the healthcare system and challenges nurse leaders to address in order to keep up with the healthcare demands. Furthermore, burnout is especially relevant in our current healthcare climate, as frontline nurses have increased workload and multiple psychosocial stressors during the coronavirus disease (COVID-19) pandemic[62]. Literature also suggests that mindful self-care practices need to be reinforced in order to impact burnout long term.[41] Project7 Mindfulness Pledge© is an accessible and voluntary mindfulness tool that nurses can utilize in their individual practice to reduce burnout and does not require significant time commitment.

**Objective:** To evaluate the effectiveness of intentional self-care practices on nurse burnout and workplace environment by measuring job satisfaction and teamwork among nurses.

**Methods:** Comparisons between inpatient units on data from the National Database of Nursing Quality Indicators (NDNQI) with the Practice Environment Scale (PES), specifically on job enjoyment and teamwork, were done utilizing ANOVA.

**Results:** Results show that nurses in an inpatient unit that implemented Project7 has significantly higher job satisfaction as compared to units that did not implement Project7.

**Conclusions:** This suggests that this tool provides an effective and accessible mindfulness framework managers and directors can utilize to improve job satisfaction, teamwork, and thereby reduce burnout to create healthier work environments.

## *Background*

### Burnout and Mindfulness

The current healthcare environment is rapidly changing with increased demands and fewer resources, leading to chronic stress and burnout in the nursing workforce[1,-3]. Burnout, a state of physical, emotional, and mental exhaustion caused by a depletion of a person‟s ability to cope with one‟s environment, is associated with increased turnover, employee absenteeism, poor coworker support, depersonalization, decreased performance, decreased patient satisfaction, and difficulty in recruiting and retaining staff. [4-7] Burnout rates are significantly higher for hospital nurses than for other professionals, and a recent study determined that every fifth nurse reported plans to leave the job within a year. [14] These findings are alarming and have long-term implications for the nursing workforce and health care outcomes.

Literature suggests that nurse burnout has significant impact on employee engagement and retention of competent staff [7, 15-17]. Burnout in the workplace results in increased financial costs due to sickness and turnover rates, with replacement costs for a nurse being twice the cost of a regular salary [15]. Further, burnout can reduce morale and overall impact teamwork within units.[38] Job satisfaction is critically important to maintaining a sufficient supply of nurses in the United States and has a direct impact on the quality care given at the bedside [34]. Solutions to reduce burnout amongst nurses have historically been under-recognized and lack focus in translating research findings to practice [7, 16, 19]. Healthcare environments are now focusing on interventions to improve burnout through mindfulness-based strategies. Mindfulness is defined as “moment to moment awareness of one‟s own experience without judgment” [22]. It is proven to reduce levels of stress, enhance coping ability, and promote well-being among healthcare staff [23].

Furthermore, burnout has been correlated with poor patient outcomes and decreased satisfaction scores[53]. Some studies suggest that burnout has been linked to increased healthcare associated infection rates such as catheter associated urinary tract infections (CAUTI), increased patient falls, as well as decreased patient satisfaction rates[53, 68]. Hospitals in which burnout was reduced by 30% had a total of 6,239 fewer infections, resulting in a $68 million annual cost savings[54]. And in one study, researchers found patients were twice as likely to report higher satisfaction scores in units that did not experience nurse burnout compare with units who experience nursing burnout.[55]

Mindfulness interventions have been widely studied in patient populations as well as other workplace environments but have only recently been given attention to healthcare employees. Furthermore, empirical research is lacking and fails to demonstrate the "why" and "how" mindfulness relates to nurse well-being and how that affects healthcare outcomes. Those studies primarily used the well-validated model of Mindfulness-Based Stress Reduction that equates to eight sessions of mindfulness-based training and supervision [24, 25]. Although effective in the literature, the cost in training and accessibility may be barriers to its use. In fact, workplace wellbeing initiatives are not always available to frontline nursing staff and are often utilized by employees in office-based roles [15].

In more recent years, Organizational Psychology literature focuses on how mindfulness affects job satisfaction and teamwork.[38-41] When mindful individuals attend to the present moment in a receptive, non-judgmental way, they observe stressful events more objectively and refrain from

attaching a meaning or evaluation to it. This helps individuals not to be influenced by biased, negative thought patterns which may lead to an overly dramatic appraisal of the situation. At work, where individuals are confronted with challenging situations every day, mindfulness may thus facilitate adaptive appraisal of stressful events. To the extent that mindfulness affects employees‟ appraisal of challenging work events as less stressful, these elicit more positive and less negative affective reactions, which, in turn, lead to a more positive evaluative judgment of one‟s work situation[38].

Our research seeks to contribute to emerging literature on mindfulness in the workplace and targeting burnout amongst nurses. We sought strategies to make mindfulness interventions easily accessible by utilizing a mindfulness-based conceptual framework named Project7 Mindfulness Pledge© (Project7). Like Jean Watson‟s Theory of Caring Science, Project7‟ provides a path for nurses and other health care professions to expand their caring literacy by improving connections with self and others, building resiliency, and contributing to creating a healthy, satisfying work environment. It provides a framework on how nurses and other healthcare professionals can more deeply reflect, listen, and connect with self and others. Through presence, authenticity, and intentionality, nurses are poised to provide the highest form of care for themselves and others.

**Project7 Mindfulness Pledge©**

Project7 is a mindfulness intervention that includes a voluntary mindfulness pledge aimed at improving job satisfaction and teamwork. Created by a Registered Nurse, Robert Varney, this

mindfulness tool seeks to develop internal self-awareness, emotional intelligence, and strives to maintain connection and appreciation of others by enhancing relationships within the team.

Project7 contains seven agreements (see below). Rather than mandating participation, individuals are invited to commit to the pledge, staying true to the theoretical propositions of mindfulness.

1. I pledge to be here
2. I pledge to be prepared
3. I pledge to be humble
4. I pledge to look at what I have
5. I pledge to look at how I can help
6. I pledge to aim for excellence
7. I pledge to have strength and courage

Each month an agreement is selected and becomes the lens to foster self-awareness and appreciation throughout that month with the team. Inspirational quotes related to the pledge, a sign in sheet, and visual board to celebrate accomplishments encourages participation and foster self-awareness on the unit. The structure of the pledges and visuals on the unit serve as reminders to carry out the internal mindfulness and self-awareness in each of its participants. No formal training is required, and the intervention is meant to cultivate an internal mindfulness and resilience, which can then inspire others to have a ripple effect within the team.

**Research Questions**

This retrospective study evaluated the effect of Project7 on job enjoyment, teamwork, and fall rates (total and injury). Job enjoyment and teamwork were evaluated using the relevant unit-level

results extrapolated from the National Database of Nursing Quality Indicators (NDNQI) 2017 Nurse (RN) Survey with Practice Environment Scale (PES). Falls were defined per NDNQI definition and calculated as total number of falls per 1000 patient days and as total injury falls per 1000 patient days. Our research question was: Did the implementation of Project7 in an inpatient acute care unit affect job enjoyment, teamwork, and fall rates? We hypothesized that staff RNs on the inpatient acute care unit that implemented Project7 had better job enjoyment and teamwork compared to other inpatient acute care units that did not implement Project7 within the same hospital. We further hypothesize that fall rates would decrease over time within this unit.

## *Methods*

### Project7 Implementation

The Project7 Unit is a 25-bed observation acute care unit. Typical for observation, this unit sees a wide variety of medical, cardiac, trauma, and minor surgical patients. Implementation of the Project7 on this unit initially began with staff engagement and team building exercises. Education occurred through informal conversations, staff meetings, and huddles.

The process of developing and implementing Project7 Mindfulness pledge began on March 2012. The author of the pledge initially met with high-performing staff to request support and to assist in promoting mindfulness ideas such as team building, safety, excellence and compassion. These were informal meetings during regular work shifts in between patient care activities. Next, there was a focus on team building activities. One such activity entailed a three-month baby board where staff posted baby pictures of themselves and other staff were invited to guess which picture belong to which staff member. Further, the board for compliments and „kudos“ was redesigned to make these statements of affirmation more public. A mindfulness bulletin board

was developed and displayed in a highly-trafficked corridor on the unit. The components of the bulletin board included a laminated copy of the 7-point pledge, a one-page letter highlighting a single pledge for the month, a sheet for staff to sign, and inspirational quotes. The letter describes the meaning behind practicing the pledge. The seven agreements are cycled month-after-month, enabling the pledge to remain alive and active. The agreements remain the same, but the descriptive content is updated monthly. Charge nurses utilize huddles and staff meetings to align the mindfulness pledge to patient care and priorities on the unit. During 2012 and 2013, the author presented Project7 in staff huddles and meetings emphasizing intent of the project. Lastly, continual teaching and coaching by the author are conducted on the unit enabling education for new staff and reinforcement for current staff. We identified the following periods: pre-intervention was between January, 2009 to February 2012; development period March 2012 to August 2013; and post-intervention period as September 2013 to December 2016.

**IRB Approval**

For this retrospective evaluation of Project7, all necessary permissions and approvals to conduct research activities were obtained from the hospital‟s intemal office of research and the Colorado Multiple Institutional Review Board.

**Study Outcomes**

This study utilized outcomes obtained from the NDNQI RN Survey with PES. This survey is designed to capture RN attitudes towards their work environment. The RN Survey with PES collects data biennially from direct care nurses and organized by units. [28] These units are compared to and benchmarked against like-units within the participating national membership of NDNQI hospitals [28]. Applicable to this research question are the following: nursing work index,

nurse-nurse interaction, job-enjoyment, work context items, and nurse characteristic items [28]. Our study focuses on the following: job enjoyment subscale and teamwork question from the nurse-nurse interaction subscale.

The Job Enjoyment subscale includes the following questions: 1) As RNs, we were fairly well satisfied with our jobs on our unit; 2) RNs on our unit would not consider taking another job; 3) I have to force myself to come to work much of the time; 4) RNs on our unit are enthusiastic about our work almost every day; 5) RNs on our unit like our jobs better than the average RN does; 6) I feel that each day on my job will never end; 7) We find that real enjoyment in our work on our unit.

For each of these items, a six-point Likert scale was used for assessment with response options ranging from strongly disagree to strongly agree. Raw response values from all participating nurses were used to calculate a mean score for each individual item. Individual item scores were then averaged to obtain a subscale score that reflects the average unit attitude toward the construct being measured. Higher values reflect more favorable ratings. Teamwork was assessed using the individual question as part of the Nurse-Nurse Interaction subscale: “There is a good deal of teamwork among RNs I work with.” Similar to the items within the Job Enjoyment subscale, this item utilizes the six-point Likert scale wherein higher values indicate more positive ratings on teamwork.

Data was collected on the Project7 Unit and six other acute care units (Units A-Units F). 23 responses (85% of the unit) were collected. Units A-Units F and Project7 Unit all belong to the same division with the same leadership team though they see different types of patients. Often Project7 Units may be admitted to the other acute care units. Total and injury fall rates for the Project7 Unit were collected from January 2009 to December 2016. Falls were defined per

NDNQI definition with injury falls defined as any minor injury and above. Fall rates were calculated as follows: total number of falls per 1000 patient days and total number of injury falls per 1000 patient days. We focused on falls as a metric for quality of care as this was a consistent quality measurement followed by this unit. Furthermore, we included this metric to explore the impact of Project7 on falls and its relationship to teamwork and engagement.

**Statistical Analysis Plan**

Mean scores and standard deviations for job satisfaction and teamwork are described for each unit. We utilized an Analysis of Variance (ANOVA) to statistically test the difference in mean scores on the job enjoyment and teamwork between 7A and six other acute care units. Post-hoc testing using Tukey"s-Kramer Honest Significance Difference (HSD) was utilized to detect differences between specific group means. For fall rates, medians with interquartile range was calculated for each time period: pre-intervention, development, and post-intervention. Kruskal-Walls was conducted to compare fall rates between the three time periods.

Further, we implemented an interrupted time series (ITS) design to further study the impact of the Project7 development period and post-intervention period on fall rates. ITS is a quasi-experimental design that incorporates real-world contexts into assessing the effectiveness of an intervention[56-58]. We utilized segmented regression analysis to incorporate levels and trends into the assessment of impact[56,58]. This incorporation of levels and trends gives an estimate of the effect of the development periods and post-intervention on fall rate levels (average fall rate for a given time period) and fall rate trends (rate of change of falls rates for a given time period). As fall rates (total and injury) were not normally distributed, we implemented a negative binomial regression model. Analysis was conducted using the R software[59].

## *Results*

### Job Satisfaction and Teamwork

Results demonstrate a significantly higher mean score on the PES Survey Job Enjoyment subscale for 7A compared to other acute care inpatient units included in this study (mean = 5.37, p-value < 0.0001). Post-hoc testing using Tukey-Kramer-HSD for multiple comparisons revealed a significant difference between 7A and every other unit individually. Results from the RN Teamwork question reveal that unit 8A had the highest score (5.78) and 6A had the lowest score (4.00). Overall significance was demonstrated in the omnibus ($F= 73.26$, $p< .0001$), therefore post-hoc testing was conducted. Post-hoc results indicate that the unit 6A score was significantly lower than every other unit when individually compared. Post-hoc testing did not reveal any significant differences between the score for unit 7A when compared individually to other units. Table 1 summarizes these results.

### Total and Injury Fall Rates

Figure 1 displays the total and injury fall rates over time. During the pre-intervention period, total fall rates had a median of 4.79 (IQR: 5.62) and injury fall rates had a median of 1.37 (2.11). Total fall rates were at 4.83 (2.88) and 2.63 (2.29) during the development period and post-intervention period respectively. Injury falls were at 0.0 (1.42) and 0.0 (0.40) during the development and post-intervention period respectively. These were statistically significant findings. Table 2 summarizes these results.

Table 3 summarizes the segmented regression results. Total fall rate level had a 19% decrease during the development period and a 13% decrease during the post-intervention period totaling

for an estimated 32% decrease in fall rate from the pre-intervention period. Total fall rate level decreased by 2% overall from the pre-intervention period. For injury fall rate, there was an increase in fall rate by 13% during the development period and 57% during the post-intervention period with an overall increase of 70% from pre-intervention period. There was an overall decrease of 1% for fall rate trend from pre-intervention. All results were statistically non-significant.

**Discussion**

This work sought to evaluate Project7 effectiveness in job enjoyment, teamwork, and fall rates as a means to further describe mindfulness effectiveness in reducing burnout amongst nurses. It was hypothesized that Project7 Unit would have higher job enjoyment and teamwork compared to all other acute care units that did not implement Project7. Further it was hypothesized that the Project7A Unit would have decreased falls over time. Our results suggest that 7A had significantly higher scores in job enjoyment compared to all other acute care units and among the higher scores, though not significant, in teamwork compared to some of the acute care units. These results met one of the hypotheses. In terms of teamwork, 7A did not have the highest score as compared to the other units. It is noted that scores across all other units were particularly high with the exception of 6A, implying that Project7 effects may have been masked by the circumstances of the hospital. In terms of fall rates, median fall rates (total and injury) decrease from the pre-intervention period to the post-intervention. Results from the regression analysis further support total fall decreases.

Nurse burnout is associated with higher turnover and lower perceived job enjoyment [7, 15, 44, 47, 51]. Job satisfaction is a key indicator of recruitment and retention in the nursing workforce [7]. Although sources of job satisfaction vary within nursing, they are broadly defined within domains of working conditions, interpersonal interactions, and psychological factors [33]. A healthy working environment is defined as including: collaborative practice culture, communication-rich culture, culture of accountability, expert team members, shared decision-making, and recognition of contributions of others [34]. Organizational development research also provides a strong correlation between organizational subculture and job satisfaction [35]. Project7 fosters a culture of ownership over job satisfaction, assisting in creating a healthy working environment and reducing burnout[60].

Developing self-awareness and mindful practice reflection helps develop the essential aspects of emotional intelligence ([64-67]). Through a sense of openness and curiosity about our experience, mindfulness leads to greater awareness and insight. Similarly, reflection-in-action involves paying attention to our moment-to-moment experience, including thoughts, feelings, bodily sensations, and judgments. Reflection-in-action and mindfulness help nurses develop insight into how perceptions shape actions, identify and understand other people‟s standpoints, and incorporate this knowledge into more deliberate and effective responses.

Project7 supports transforming behaviors and actions through caring literacy and shifts a culture from focusing on accountability to ownership where team members embrace shared values, mutually support freedom and responsibility, positively and consciously engage with one another, and encourage innovative thinking. Self-development to stay true to our internal compass helps manage the emotional work inherent in nursing. Reflective practice is a key to manage self-care, develop leadership capacity, improve responses through emotional

intelligence, develop mindfulness to engage in work activities, and thus improve safety outcomes.[46]

Segmented regression results showed that injury fall rates increased from the pre-intervention period. We note that this is simply the case a few high injury fall months during the development and post-intervention period and not a full indication of the effect of Project7 on the acute care unit. The rate zero injury falls months were higher post-intervention compared to the pre-intervention (42% vs. 75%) indicating an improvement in the management of injury falls. Fall rates were a consistent metric followed in the acute care division as a whole and compared across units. Given that nurse teamwork and environment impact quality of care such as falls,[68] this data demonstrates possible correlation with higher engagement scores on 7A.

This study did a cross-sectional comparison of units in terms of job satisfaction and teamwork, which is a limitation. A better design would have been to follow 7A over time and estimate the effect of Project7 through the utilization of more sophisticated statistical models, such as segmented regression analysis. Unfortunately, not enough data were available for this analysis and there‟s a potential that Project7 was wasn‟t a robust enough intervention to affect change. However, this study provided some evidence of the positive impact of Project7 on falls. Using ITS provides a more robust form of evidence as it has been documented that ITS is a strong quasi-experimental design[61]. However, we only implemented this on one unit. A stronger design would be to compare this with a control unit or perform a controlled trial with interrupted time series that could make this discussion more robust. Further work is recommended. Future work could include secondary data analysis incorporating more data and more sophisticated models, or a prospective randomized control trial to fully determine the causal effect of Project7 in terms of job enjoyment, teamwork, and other quality metrics such as catheter associated

urinary tract infections. Additionally, implementing Project7 on other units and having a standard rollout procedure with pre and post measurements would lend to greater data collection.

## Conclusion

Project7 is a feasible and sustainable mindfulness program that nursing leaders can reasonably implement in their units without significant costs. This work suggests that this program improves job satisfaction and can reduce burnout leading to improved environment and safety measures. Project7 creates a culture that encourages patient safety and ownership promoting these improvements.

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**Table 1: NDNQI PES Scores for Job Enjoyment and Teamwork by Unit (2017)**

| Unit | Job Enjoyment Subscale (mean (SE)) | There is a good deal of teamwork among RNs I work with (mean (SE)) |
|---|---|---|
| Unit A | 4.52 (0.08) | 5.45 (0.06) |
| Unit B | 4.40 (0.08) | 5.69 (0.06) |
| Unit C | 4.36 (0.09) | 5.36 (0.07) |
| Unit D | 3.31 (0.09) | **4.00 (0.07)**** |
| Project7 Unit | **5.37 (0.15)*** | 5.58 (0.11) |
| Unit E | 4.14 (0.09) | 5.78 (0.07) |
| Unit F | 4.03 (0.09) | 5.39 (0.07) |
| p-value | <0.0001 | <0.0001 |

**Figure 1:** Project7 Unit Fall Rates Over Time by Month by Period (2009 to 2016).

**Table 2: Median Fall Rates Between Intervention Periods (Total and Injury)**

| | Total | | Injury | |
|---|---|---|---|---|
| | Median (IQR) | KW Test[1] | Median | KW Test[1] |
| Pre-Intervention (Jan. 2009 to Feb. 2012) | 4.79 (5.62) | H = 11.24 | 1.37 (2.11) | H = 7.091 |
| Development Period (Mar. 2012 to Aug. 2013) | 4.83 (2.88) | p-value = 0.003625 | 0 (1.42) | p-value = 0.02885 |
| Post-Intervention (Sept. 2013 to Dec. 2016) | 2.63 (2.29) | | 0 (0.40) | |

[1]Kruskal-Wallis Test

**Table 3: Segmented Regression Results**

| | Total | | Injury | |
|---|---|---|---|---|
| | RR[1] (95% CI) | Percent Change | RR[1] (95% CI) | Percent Change |
| Fall Rate Baseline Level | 6.21 (3.95 to 9.96) | -- | 1.71 (0.73 to 4.22) | -- |
| Fall Rate Trend | 0.99 (0.97 to 1.01) | 1% decrease | 0.97 (0.93 to 1.02) | 3% decrease |
| Fall Rate Level Change: Development | 0.81 (0.33 to 2.01) | 19% decrease | 1.13 (0.18 to 6.79) | 13% increase |
| Fall Rate Trend Change: Development | 1.01 (0.93 to 1.09) | 1% increase | 0.99 (0.84 to 1.16) | 1% decrease |
| Fall Rate Level Change: Post | 0.87 (0.33 to 2.27) | 13% decrease | 1.57 (0.21 to 13.8) | 57% Increase |
| Fall Rate Trend Change: Post | 0.98 (0.91 to 1.07) | 2% decrease | 1.03 (0.87 to 1.22) | 3% increase |

[1]Relative Risk ratio as estimated by the negative binomial regression. Confidence intervals containing 1 indicates non-significance. RR interpreted as percent change by subtracting estimate from 1. Estimates less than 1 indicates decrease while estimates greater than 1 indicates increase.

Highlights

- A proposed mindfulness intervention may have impact on job satisfaction, teamwork, and quality of care.
- Project7 Mindfulness Pledge© is a cost-effective self-care practice aimed at reducing burnout amongst nurses.
- Nurses on a unit who implemented Project7 had significantly higher job satisfaction scores and improved quality and safety metrics than units other units.

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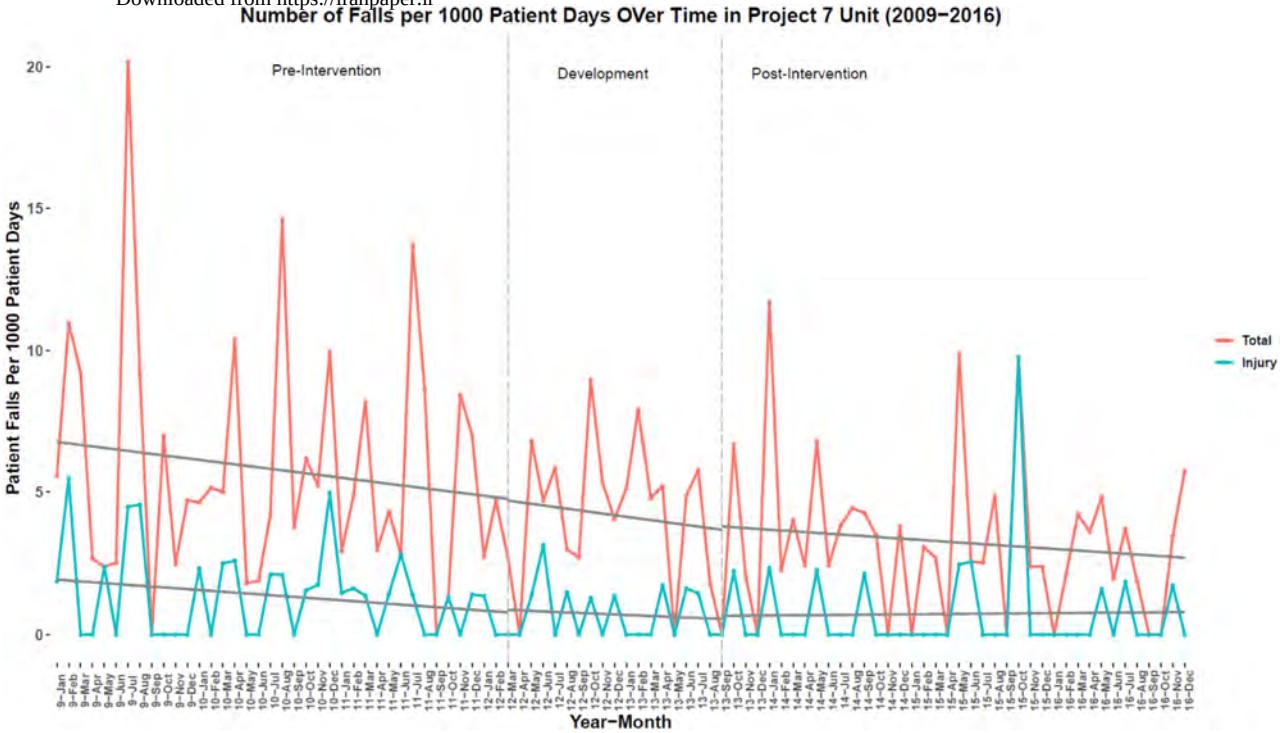


Figure 1