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Improving Inpatient Bodily Integrity Management: A Quality Improvement Audit in Cyprus

Chase Becker[1]*, Rachel Abeysekera[1], Emma Nordahl[2] and Ioannis Christou[3]

[1]*Midwife Vision Global, Australia*
[2]*University of Nicosia Medical School, United Republic of Cyprus*
[3]*Limassol General Hospital, United Republic of Cyprus*

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Abstract

Background and Aims: The engagement of professional healthcare workers in maintaining a patient's bodily integrity, their perceptions of the origin of bodily integrity and their roles in maintaining it are key determinants of successful bodily integrity care. Equally important factors include staffing levels, team dynamics, and the workplace environment. This study aimed to assess the bodily integrity care of inpatients (including ocular and oral hygiene) before and after providing medical ward staff training regarding manual handling, pressure ulcers, ocular and oral hygiene, and their management.

Materials and Methods: This observational quality improvement and audit project, which could not close the audit loop, included pre- and post-intervention observational data collection phases, and an intervention phase between the data collection phases. This study enrolled randomly selected inpatients from the medical wards at Limassol General Hospital in the United Republic of Cyprus who met the inclusion/exclusion criteria.

Results: The focus and care for the bodily integrity of inpatients at Limassol General Hospital were below acceptable standards and needed improvement.

Conclusion: Based on the findings, we recommend closing the quality improvement audit loop by engaging key healthcare stakeholders and leaders within the department to engage staff in mandatory annual training regarding manual handling techniques, identification, prevention, and treatment of pressure ulcers, and identification, prevention, and treatment of ocular and oral hygiene-related issues. This could be underpinned by using team structuring models and clinical governance theories to help introduce internal auditing processes and bolster staff attitudes. Additionally, continuous cycles of internal auditing and monitoring are recommended.

***Corresponding author:** Chase Becker, Midwife Vision Global, Australia.

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Main Points

- Most healthcare staff were apathetic towards the educational intervention aiming at improving participants' bodily integrity. Staff attitude is a key determinant in the quality and provision of bodily integrity care.
- Mandatory annual training regarding manual handling techniques, pressure ulcers, and ocular and oral hygiene may be beneficial in improving participant care (such as the pressure ulcer prevention program model).
- A closed-loop follow-up internal quality improvement project is recommended.
- Continuous cycles of internal auditing and monitoring, implemented using a team development interventions model, are recommended.
- This project is likely generalisable to all public hospitals in Cyprus and most public hospitals within the Mediterranean.

Introduction

Pressure ulcers or bedsores are injuries resulting from sustained pressure on a specific part of the body, such as the sacrum or heels. If pressure ulcers are not treated in the early stages, they can worsen, reaching the final stage and exposing the underlying bone [1,2].

Management of pressure ulcers includes appropriate identification, dressing, and monitoring of the wounds, and patient repositioning. Historically, Hall's 1964 theory of appropriate pressure care involves the themes of core, care, and cure [1-4]. Once a pressure ulcer is identified, it should be relieved by redistributing the pressure, which is best achieved by regularly repositioning the patient and dressing the wound if the skin is broken. In some cases of complex and advanced ulcers, wound dressings may be complicated and require surgical washout and debridement to prevent life-threatening infections. Ongoing supportive treatments also include nutritional support and pain management [1-5].

The risk factors for pressure ulcers include immobility, poor circulation, poor nutrition, incontinence, advanced age, and comorbidities. These risk factors often present concurrently rather than individually. For example, diabetes mellitus in older patients can lead to high urinary frequency and incontinence, reduced mobility, poor peripheral vascular circulation, and poor nutrition. Addressing these risk factors, monitoring patients' bodily integrity, and treating any breakdowns in skin integrity are the mainstays of inpatient pressure ulcer management [1-7].

The quality of pressure ulcer care depends not only on the knowledge of attending nurses and doctors but also on their attitudes towards this care, with positive attitudes resulting in positive outcomes [8-10]. In addition, adequate staffing is required to provide care. The 2001 World Health Organization report on Cyprus' healthcare system reported staffing levels of 2.6 physicians and 4.2 nurses per 1000 persons, which is well below the European Union averages of 3.5 physicians and 6.8 nurses [11]. One low-quality study observed that a dedicated repositioning team was effective in the management of pressure ulcers when staffing was inadequate [4]. In some cases, healthcare teams could predict future occurrences of pressure ulcers by modelling past data, which might aid in budgeting for equipment and staffing during the predicted periods [12].

A rigorous study comparing Australian, Italian, and Cypriot nurses' missed opportunities in providing care found patient bathing, oral care, and turning patients every 2 hours to be omitted by Cypriot nurses more frequently [13].

Another study assessed whether repositioning might be considered abuse of the older population [14]. Patients with incapacity who are unable to provide consent can be treated after appealing through courts in Cyprus to allow decisions to be made on their behalf and in their best interests. In cases of emergencies, consent is implied [15]. Thus, care is not legally defined as abuse. Repositioning should ideally be performed every 2 hours, and full skin integrity assessment of inpatients should be performed within 8 hours of admission [14]. It is well documented that a cohesive and safety-conscious environment among healthcare staff leads to a reduction in patient harm and mortality, underscoring the fact that the attitudes of staff and their working environments are important for patient bodily integrity [16].

Further, oral and ocular hygiene are often neglected in lieu of skin integrity care, especially in older and immobile patients. The care and attitude of nursing staff towards the oral hygiene of inpatients are generally poor; however, improved care can be achieved with nursing managers' skilful leadership [17]. There are almost no reporting structures regarding the specific breakdown of hospital financing and resourcing in Cyprus, making costs and expenditures mysterious and difficult to allocate [11]. For example, queries regarding the availability of wound dressings and manual handling equipment and the person the staff should approach to source the financing for these items remain unclear.

The inability of nursing staff to provide adequate care owing to workload and communication barriers, known as rationing, can lead to nosocomial infections, falls, and patient dissatisfaction [7,18]. Inpatients' views of their stay demonstrated a lack of satisfaction in the private and public health systems in Cyprus, and in both situations, the satisfaction was influenced by their experience with empathy, professionalism, and relationships between staff and patients [19].

Initially, the investigators participated as medical students in a multidisciplinary team caring for medical inpatients at Limassol General Hospital, a large public tertiary hospital in Cyprus.
Limassol's population of 260,000 people is a quarter of the overall population of the country and has been increasing since the 1990s, with Cyprus's over-65-year-olds accounting for 15% of the overall population [20,21].

The investigators observed that several participants were older, at risk of poor bodily integrity (i.e. comorbid), and often had pressure ulcers. Most of these patients had no documentation regarding risk assessment or wound care, no holistic prevention planning for oral or ocular hygiene-related issues, or repositioning schedules. Therefore, with the support of the senior staff, a project was conceived that aimed to improve the holistic care of inpatients' bodily integrities, as measured by observing a random set of participants before and after providing the healthcare staff with training regarding manual handling, pressure ulcers, ocular and oral hygiene, and their management.

Materials and Methods

Study Design

This observational quality improvement and audit study included pre- and post-intervention data collection phases with an intervening intervention phase (Table 1). In phase one of the pre-intervention stage, staff reluctance hindered efforts to ensure confidentiality and enhance research quality; for instance, no staff attended practical sessions or presentations on midway findings and interventions. To address this, two online presentations on manual handling, pressure ulcers, and ocular and oral hygiene were distributed for self-viewing in phase two, 1 week before and after data collection. While the medical team engaged actively, the nursing team showed less interest in the study objectives.

Phased Data Collection

Due to issues during the first round of data collection (phase one), researchers implemented the following new strategies in phase two:

- Targeted a more specific participant population appropriate for the project.
- Maintained confidentiality by recruiting a third, unknown researcher who had never worked in the target hospital and was not previously linked to the research, adding an element of blinding.
- Used a translator and a third unknown researcher to obtain consent instead of the study supervisor, the Deputy Head of the department, who was well-known by the staff.
- Changed the parameters for data collection from a follow-up paradigm to gathering at least five participants for pre- and post-intervention stages, regardless of prior inclusion.
- Provided online interventional tutorials for staff to watch at their discretion, as no staff attended the opening presentation, making live sessions impractical.
- Added a third investigator, a junior medical student less likely to be recognised, reducing observer bias. She followed the same methods as the other investigators, with potentially different findings.
- Pre- and post-intervention assessments were conducted by the same investigator (the third, more unknown-to-the-staff investigator) and translator over 24 hours each time, collected 18 days apart. The intervention was provided to

the study supervisor for distribution to staff via institution-specific email addresses the day after pre-intervention data collection. Slide sheets and turning schedule posters were hung at accessible places on the same day as the pre-intervention data collection.

Setting

This quality improvement project enrolled randomly selected inpatients from the medical wards at Limassol General Hospital who met the inclusion/exclusion criteria. According to their government website, the hospital has 137 medical officers, 602 nursing officers, 101 other health professionals, 329 beds, and 6 operating rooms [22]. Informed consent was obtained verbally and in writing from participants or their proxies (via a translator if needed). Complete assessments of participants' skin, eyes, and mouth were performed, and clinical notes were reviewed for risk assessments, nutritional plans, and repositioning orders. Key risk factors, including polypharmacy and demographics, were highlighted, if available. An online presentation on pressure ulcer care, repositioning, manual handling, and care for eyes and mouths was distributed to staff. The same pre-intervention data collection methods were used post-intervention with a new set of participants to observe improvements in severe unmanaged pressure ulcers, ocular and oral hygiene, documentation of risk assessments, and holistic care plans. The study timeline is shown in Table 1.

Table 1: Timeline of Data Collection, Recruitment, and Exposure to the Intervention

Period of recruitment (First pre-intervention data collection)	November 1, 2022, to November 3, 2022
Period of recruitment (Second pre-intervention data collection)	April 30, 2023, to May 7, 2023
Period of recruitment (Post-intervention data collection)	May 8, 2023, to May 15, 2023
Period of data collection (First pre-intervention data collection)	November 20, 2022, to November 27, 2022
Period of data collection (Second pre-intervention data collection)	April 30, 2023, to May 7, 2023
Period of data collection (Post-intervention data collection)	May 15, 2023, to June 25, 2023
Exposure to intervention	May 8, 2023, onwards

Participants

Inclusion and Exclusion Criteria

The original inclusion and exclusion criteria were inpatients in the general medical wards of Limassol General Hospital (ward A or B), >20 years of age, who could provide consent or had a power of attorney to provide consent on their behalf. The goal was to enrol 10 participants each for pre-intervention and post-intervention, excluding those with mental illnesses like self-harm or eating disorders.

After the first data collection round was paused early (after ~48 hours) due to bias and unclear criteria, the inclusion criteria were revised. The inclusion criteria for the second phase were patients aged >65 years and/or patients who were immobile or remained sedated for >12 hours per day; all other patients were excluded. The focus shifted to the data richness rather than participant numbers. We aimed to recruit five or more participants each in the pre- and post-intervention stages, which was achieved.

Sampling Method and Size

Based on the inpatient list, the investigators checked participants' ages first, including all those aged >65 years, then checked all participant charts to see if any of the patients were immobile or sedated for > 12 hours per day and included them as well. They then spoke with participants or their proxies about the study to obtain informed consent (if they were not fluent in English, a Greek-Cypriot translator and Greek-Cypriot consent form were utilised). Seven participants were recruited for phase two pre-intervention data collection and five for post-intervention data collection.

Variables and Bias

Variable Definitions

To reduce errors, bias, and confounding factors, the following were incorporated into the study:
ocular hygiene was assessed by looking for obvious abnormalities such as conjunctivitis or subconjunctival haemorrhage, as well as assessing conjunctival injection (redness), debris (amount and type such as purulent or serous, etc.), signs of swelling or bruising, whether the participant had their appropriate eyewear in situ, whether they were responsive, and whether they felt they were able to perform their own ocular hygiene. This model was more subjective, but overall, to provide clarity, any aspect of ocular hygiene that was considered

abnormal or less than ideal was labelled as such and not on a scale of severity, which could have introduced subjective observer bias.

Oral hygiene was assessed based on the bedside oral exam by Celik and Eser to create an objective comparison and comprehensive assessment [23]. The observers provided their comments depending on what they saw, and the final assessment was based on the worst observation (e.g. if the participant had good saliva production but had evidence of moderate dysfunction of the gingiva, then the overall result was recorded as moderate dysfunction of oral hygiene).

Skin Integrity was assessed by doing a top-to-toe visual inspection of the skin, noting its elasticity (e.g. thin, as is often seen in older participants), its colour (pale, pink, red, bruised, etc.), and whether there were any compromises such as scrapes, cuts, wounds, ulcers (pressure or otherwise), haematomas, or surgical dehiscence.

Finally, the observer checked the participant's notes– any clear evaluation of or instructions regarding oral intake and the participant's skin or known wounds (such as chronic pressure ulcers) were considered as having a nutritional assessment and skin/wound assessment, respectively. Rotation orders were considered present if they mentioned repositioning the participant, and a frequency was given for said repositioning.

The diagnostic criteria for pressure ulcers were based on the USA NPIAP staging criteria [24]. The observer decided, based on their visual inspection of a participant, whether there was a pressure ulcer and assigned it a stage based on their knowledge as a medical student of the USA NPIAP. A formal diagnosis provided in the notes for the participants was used if present unless it differed from the observations. Any skin breakdown, including bruising and dry or cracked skin, was considered a mild to moderate dysfunction and simply considered 'unhealthy'. Any skin breakdown at any pressure ulcer stage was considered a severe dysfunction.

Data recorded by the observing investigator was audited (visually if photos were taken with consent or through the observers' written descriptions) by the non-observing investigators to improve the accuracy of findings.

Definitions of Clinical Presentations

- **Healthy Eyes:** no abnormal discharge, redness, swelling, crusting, or pain
- **Healthy Mouth:** moist; with no cracked lips, swelling, signs of thrush (i.e., white removable layer on tongue), bleeding, pus, or pain; and clean dentures or teeth
- **Healthy Skin:** moist, intact, with no bruising or wounds

Measurement and Data Sources

During phase one, some participants were in very poor condition, and the staff paid special attention to participants who consented to participate in the study. Unfortunately, this introduced a bias; therefore, data collection was halted, and a 'Plan, Do, Study, Act' cycle was undertaken (Figure1) [25].

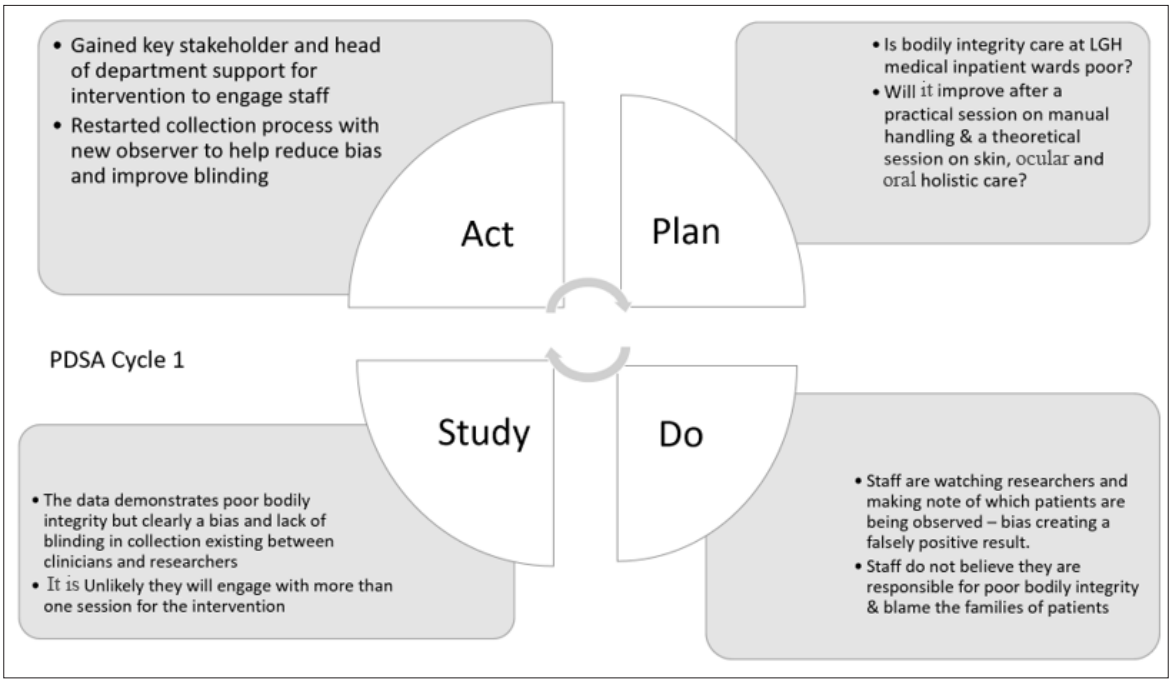

Figure 1: The 'Plan, Do, Study, Act' Cycle for the First Phase

Once data collection resumed with a different (third researcher) observer, this observational study's results seemed as unbiased as possible. However, it was speculated that the intervention would not be well received. Thus, considering the expressions and attitudes of the staff members during the initial data collection period, the intervention was adjusted. It was originally intended to be a full-day practical session on manual handling with a theoretical session on pressure ulcers and holistic ocular and oral care for inpatients. This was changed to an online recorded presentation disseminated to the staff (Figure 2) because of concerns regarding their workload, leaving the ward, or coming to work on a day off. The investigators organised a meeting with the heads of nursing and medical personnel to describe the research and involvement; however, this was attended only by the medical department's deputy head. Afterwards, we organised a session with the same invitees, where we planned to share the preliminary results. It was an opportunity to answer staff questions and ask them how they felt about the study and whether they had anything to add. However, only a few doctors and the head nurse engaged in the in-person session.

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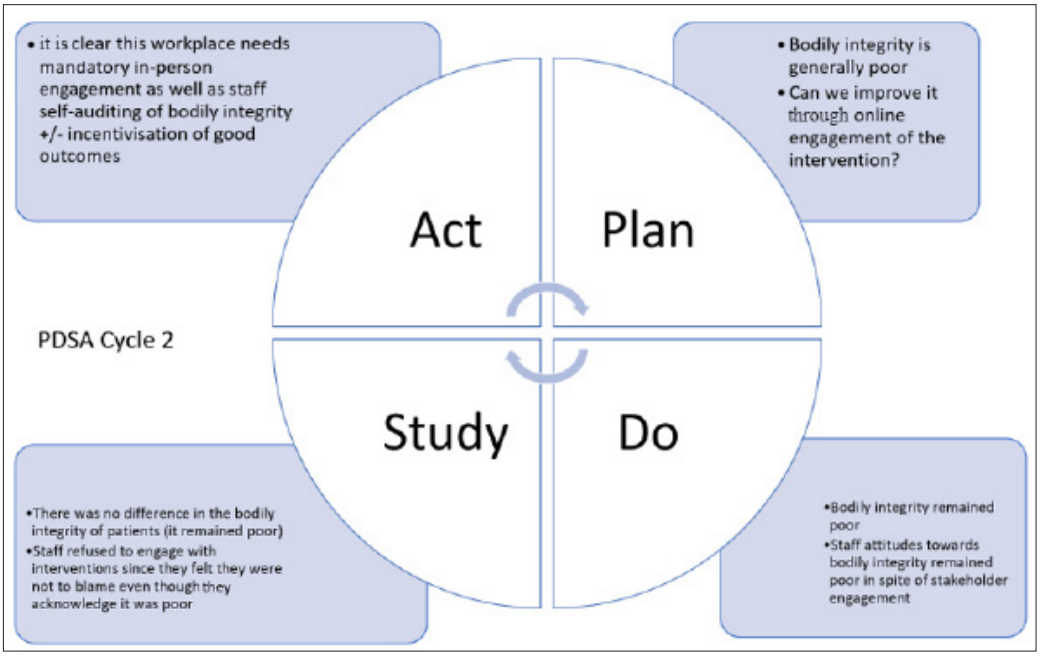

Figure 2: The 'Plan, Do, Study, Act' Cycle for the Second Phase

Statistical Methods

The data collected were categorised into pre- and post-intervention groups and are presented in tables and graphs using SPSS software. Additionally, possible confounding factors and biases, standard deviations and means, and medians in the interquartile range (IQR) format are presented.

Results

Participant Demographics

Demographic information was not collected for phase one participants as the collection focused mainly on participants' bodily integrity on follow-up days 1, 3, and 5. When bias was identified, data collection was stopped, and the project was paused. The three participants recruited in phase one of the study were not included in the final study analyses due to the suspected bias in the data.

In phase two, 12 participants were recruited in total. Of those, 66.7% were aged >85 years, with 58.3% male and 41.7% female participants, making an almost even sex distribution.

Intervention

Pre-intervention, the group consisted of 3 (42.86%) females and 4 (57.14%) males, with an average age of 78.29 ± 9.88 years. A significant portion of participants were older than 80 years (71.43%). Regarding hygiene, 4 (57.14%) participants had healthy ocular hygiene, while 2 (28.57%) had unhealthy ocular hygiene. Oral hygiene was predominantly poor, with 6 participants (85.71%) showing unhealthy oral hygiene and severe dysfunction of oral hygiene. Bodily integrity was concerning, with all 7 (100%) participants showing unhealthy bodily integrity, with 6 (85.71%) experiencing severe dysfunction. Glasgow Coma Scale (GCS) scores were normal in 2 (28.57%) participants. Additionally, 3 (42.86%) participants had a nutrition plan, and 6 (85.71%) had comorbidities with polypharmacy. Wound care plans were in place for 2 (28.57%) participants, and 6 (85.71%) had pressure ulcers. No rotation orders were recorded.

Post-intervention, there were 2 (40%) females and 3 (60%) males. The average age of participants was 83 ± 4.30 years, and 80% were over 80 years old. Healthy ocular hygiene was noted in 2 (40%) participants, while 3 (60%) had unhealthy hygiene. One (20%) participant had healthy oral hygiene, 2 (40%) with mild dysfunction, and 2 (40%) with severe dysfunction. All participants showed unhealthy bodily integrity, though the severity varied, with 3 (60%) participants showing severe dysfunction and 2 (40%) having mild dysfunction. One participant (20%) had a normal GCS score. There were no nutrition plans in place post-

intervention, and 5 (100%) participants had comorbidities involving polypharmacy. Wound care plans were in place for 3 (60%) participants, and 3 (60%) had pressure ulcers. No rotation orders were present after the intervention.

Discussion

Pre-Intervention

The lack of rotation orders and healthy bodily integrity are likely strongly interrelated. Having a lower GCS score did not correlate with worse bodily integrity or hygiene. Polypharmacy and co-morbidities are known strong risk factors and were present in all participants. Two of the three participants who experienced healthy ocular hygiene were aged <80 years. This study lacks the design and power to define correlations or definitive confounders; however, this was not necessary because the information regarding this is already present in existing literature [1-10, 14, 24]. This project aimed to measure the bodily integrity of the patients admitted to the Limassol General Hospital's medical wards as a population generalisable to the rest of the country's general public hospitals and possibly to that of public hospitals within Mediterranean regions. The data is decidedly discouraging, with participants generally experiencing poor bodily integrity, poor ocular and oral hygiene, and poor preventative or treatment measures in place, such as nutritional risk assessments or wound care plans (Figure 3 and Table 2).

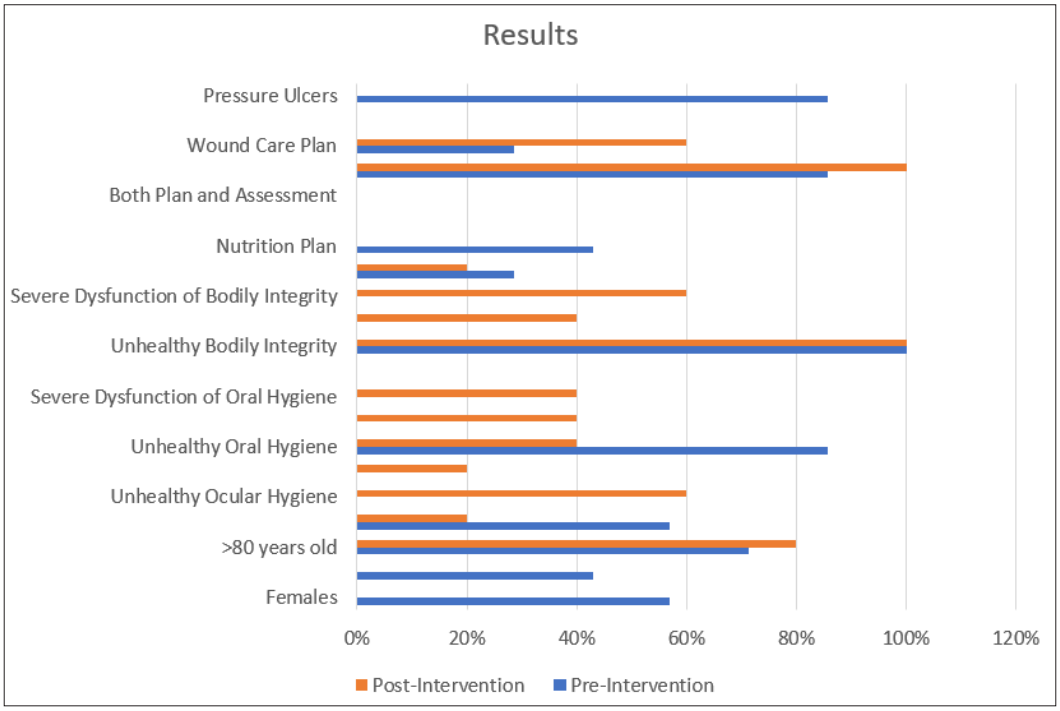

Figure 3: Summary of Results from Pre- and Post-Intervention Data (Phase Two)

Table 2: Pre-Intervention and Post-Intervention Results Summary

Data	Pre-Intervention	Post-Intervention
Females	3 (42.86%)	2 (40%)
Males	4 (57.14%)	3 (60%)
Age (years)	78.29 ± 9.88 82 (65, 86)	83 ± 4.30 85 (79, 86)
>80 years old	5 (71.43%)	4 (80%)
Healthy Ocular Hygiene	4 (57.14%)	2 (40%)
Unhealthy Ocular Hygiene	2 (28.57%)	3 (60%)
Healthy Oral Hygiene	0 (0%)	1 (20%)
Unhealthy Oral Hygiene	6 (85.71%)	4 (80%)
Mild Dysfunction of Oral Hygiene	0 (0%)	2 (40%)
Severe Dysfunction of Oral Hygiene	6 (85.71%)	2 (40%)
Healthy Bodily Integrity	0 (0%)	0 (0%)
Unhealthy Bodily Integrity	7 (100%)	5 (100%)
Mild Dysfunction of Bodily Integrity	1 (14.29%)	2 (40%)
Severe Dysfunction of Bodily Integrity	6 (85.71%)	3 (60%)
Normal Glasgow Coma Score	2 (28.57%)	1 (20%)
Nutrition Plan	3 (42.86%)	0 (0%)
Comorbidity with Polypharmacy	6 (85.71%)	5 (100%)
Wound Care Plan	2 (28.57%)	3 (60%)
Rotation Orders	0 (0%)	0 (0%)
Pressure Ulcers	6 (85.71%)	3 (60%)

Age is represented in the mean ± SD, median (IQR) format.

Post-Intervention Data

Over both the pre- and post-intervention periods, participants had pressure ulcers on various parts of their body, including sacrums, heels, or medial aspects of their knees. The presence of wound care plans did increase, but whether these were implemented remains undetermined. The overall state of the participant's bodily integrity, as well as of their ocular and oral hygiene, remained poor, and the rotation orders were still not in place. Given the poor participation in the intervention program, these results were unsurprising (Figure 3 to 7, Table 2).

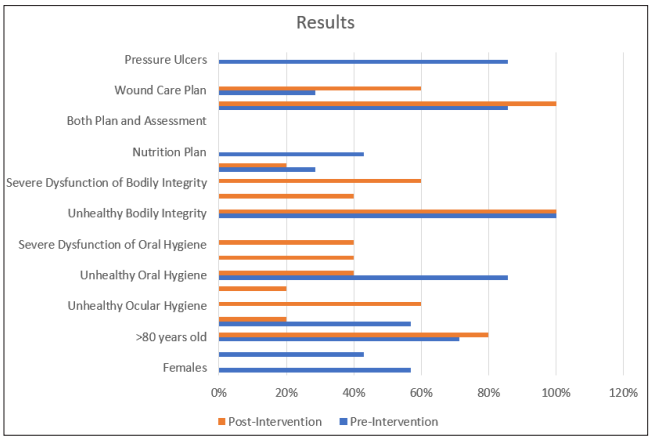

Figure 3: Summary of Results from Pre- and Post-Intervention Data (Phase Two)

Figure 4: The Entire Hand of a Participant Covered in Painful Haematomas

Figure 5: A participant with an Infection Around the Nasal Tube, with Pus and Blood Leaking into the Participant's Mouth

Figure 6: A Stage 4 Pressure Ulcer on a Participant's Sacrum, Left Undressed with no Specific Rotation or Wound Care Plan

Figure 7: A participant Lying in their Own Pus and Blood Left Without a Specific Rotation or Wound Care Plan

The researchers identified several issues during the first data collection round. The staff's response to the project was not encouraging. One staff member stated that the project was useless and completely unnecessary. Another staff member commented that the study was pointless because it did not change any institutional practices regarding bodily integrity care. However, some staff members attempted to provide helpful feedback, stating that they believed the participants' families or visitors were to blame for the bedsores as they often wanted staff to move the participants into

certain positions that were against turning orders.

Further, it was noted that the locations of the posters advertising the project to staff, participants, and families were changed. Unfortunately, posters detailing the schedule for turning participants, which were meant as permanent aids to staff, were removed. The whereabouts of these posters and the slide sheets could not be determined. They were presumed to have been removed because the staff did not wish to turn the participants according to a schedule. The turning schedule depicted a time and participant position (e.g., 02:00 left lateral), and the visual aid would allow passers-by to notice if the participant was in the correct position and, therefore, being rotated. The staff were probably uncomfortable with this transparency level.

Certain key staff members did not attend the initial project introduction meeting. Furthermore, they blamed different clinician disciplines for the issue presented. Medical personnel partially blamed the nursing staff, stating that they did not perform their duties regarding bodily integrity, such as patient turning. Contrarily, nursing staff blamed the medical personnel, citing that there were often no documented orders. The staff not only gave a disapproving response to the project but also introduced bias in the data during the first data collection phase. Only the researchers and nursing aides (in cases in which they were to assist in participants' bodily integrity assessments where manual participant handling was necessary) were to be privy to the identity of the enrolled participants recruited for the project. However, discussions with staff members revealed that this confidentiality was breached during phase one.

Although this did not negatively impact the participants, it introduced bias into the study. When the staff identified which participants were enrolled, they provided additional care to these participants to create a better impression than their likely baseline. This phenomenon is directly related to the Hawthorne effect [26]. In fact, these participants were well looked after, and other participants with similar circumstances were not as well looked after, which represented the baseline status that had served as the inspiration for the projects' inception.

Despite advertising the study with posters and informing the staff of the main research aims, the staff were reluctant, fearful, and disapproved of the project. All staff admitted that they felt that the bodily integrity of participants was poor-to-fair and could be improved. However, they deflected the responsibility for this to others, including other disciplines of clinical staff and participants' families. In general, doctors blamed the nursing staff, and the nursing staff blamed doctors.

Managers are important in empowering staff to find innovative solutions that can lead to attitude changes and improve participant care [27]. Additionally, a plethora of micropolitics surrounding bodily integrity care may exist. Micropolitics, especially the role of authority and power in creating collective leadership interventions, has been shown to negatively impact implementation processes [28]. The investigators were predominantly medical students and had relatively little power over even the lowest-level clinical staff during this project. In this context, an interprofessional caring model may be useful to foster a caring culture and establish 'human connections among interprofessional team members' [29]. Zajac et al. described a step-by-step process that healthcare staff can follow to create more effective teams, resolve conflicts, and implement evidence-based care [30].

If a model of effective teamwork and fostering positive attitudes regarding participant care and safety is utilised to implement a pressure ulcer prevention program (PUPP) with additional education on ocular and oral care, the researchers believe that these participants' bodily integrities may be better cared for and the pressure ulcer incidence may drastically reduce.

The PUPP includes three major aspects: creating a dedicated wound care team, ongoing and effective staff education about the PUPP, and 'continuous data collection and monitoring through frequent reporting', which may best be done through regular internal audits [31].

In addition to internal auditing and attitude changes, this study could be built upon by closing the audit loop. The audit could even be expanded to include data collection regarding the length of admission of participants with intact bodily integrity compared with those without.

The investigators did try to engage the staff by conducting an additional session that was not a part of the intervention, allowing staff to ask questions and voice concerns or ideas.

Although the number of nurses and doctors who engaged with the presentation recordings cannot be accurately estimated. We believe that the only way an intervention can be successful in this context is by creating and enforcing a mandatory annual proficiency and professional development session on this subject. It should be backed up by mandatory audits, which should be completed by the staff themselves (doctors and nurses), with incentives for the best-performing individuals, groups, or wards. This may reflect the staff's positive reinforcement without identifying blame for the aetiology of poor participant bodily integrity care. The researchers were not able to implement these changes and recommend that a researcher implement these suggestions, close the loop of the audit and quality improvement project, and evaluate its effectiveness.

The total interpretive structural modelling-based approach to determine the readiness of a healthcare team for change may be useful for a researcher taking this project further [32]. In retrospect, this model would have been useful to help gauge whether this project would have been well-received by the healthcare team, which would have enabled us to adjust the project before its inception to fit the target staff audience, such as ensuring mandatory training. This project should have been conducted over an extended period.

Generalisability

This project can be generalised to most Mediterranean public hospitals whose cultural and professional beliefs are likely to be similar, as well as to participant population demographics and staffing ratios. It is unlikely to have much generalisability beyond these geographically, politically, and culturally similar countries and institutions. It was not a study designed to be largely generalisable. Instead, it was intended as an external tool, which would be less biased, to audit the bodily integrity care of medical participants.

Study Limitations and Strengths

The study has significant strengths as it highlighted the disapproving attitude of healthcare staff towards quality improvement projects, which is a key barrier to effective bodily integrity care for inpatients.

This project had several limitations. Despite the rich data, the sample size was small, and the pre- and post-intervention groups differed. More demographic data, such as inpatient stay length, daily caloric intake, and staffing levels, should have been recorded. Additionally, qualitative semi-structured interviews or surveys of healthcare staff's attitudes, views, and baseline knowledge of bodily integrity would have added great value to the project.

Conclusion

In conclusion, the staff attitudes, coupled with their lack of attention to pressure ulcer prevention and care, led to poor management and disruption of bodily integrity among the inpatients.

Despite having an insignificant sample size and being a study fraught with weak observational evidence, this study demonstrated that a lack of internal auditing, staff attitudes, and systems regarding assessment and care of inpatient bodily integrity led to poor participant bodily integrity outcomes. Despite the staff knowing that bodily integrity was poor and could be improved, they absolved themselves of the responsibility. Addressing the blaming attitude and implementing positive team dynamics may help overcome this problem.

Data Sharing Statement

The participant data of this article, including consent forms, raw data collection sheets and original images, are available upon reasonable request from the corresponding author.

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