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Sustaining Pain Assessment and Reassessment Nursing Care Standards During COVID-19

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Abstract: Coronavirus pandemic globally overwhelmed the hospitals to deliver care as used to be employed by nurses. The two University hospitals in Riyadh, Saudi Arabia despite exhausted were still sustaining the pain management nursing care standards during the pandemic settings. The implementation of the pain management quality project enhanced sustaining the pain management nursing care standards related to pain assessment and reassessment after interventions. The aim of this quality improvement of pain management was to improve nurses' compliance regarding pain assessment during arrival to the clinics, emergency department or in the wards and reassessment after interventions for patients who experienced pain. Retrospective pain audits were performed monthly from electronic patients' medical records by the pain team nurses. Analysis of the audits data findings of the two University hospitals were compared for the first six months of 2019 and 2020 to demonstrate the trend for compliance rate that was sustained. The average rate for initial pain screening for outpatients' clinics in 2019 was 98% for hospital A and 99% for hospital B, while in 2020 was 99% for hospital A and 97% for hospital B. Secondly the average rate for initial pain assessment for inpatients/emergency units in 2019 was 99% for hospital A and 100% for hospital B, while in 2020 was 100% for hospital A and 99% for hospital B. Thirdly, for pain reassessment in 2019 was 99% for hospital A and 93% for hospital B, though in 2020 was 98% for hospital A and 99% for hospital B. Pain reassessment for University hospital B in 2019 indicated that there was a need for improvement in February and April, while in 2020 compliance rate significantly improved by 7% despite the pandemic settings. On this basis, for sustainability it is recommended to continue monitoring the compliance of nurses to conduct pain assessment and reassessment after interventions for patients who experienced pain as part to enhance quality improvement of pain management and patient safety.

Keywords: Pain Assessment, Compliance Rate, Nursing Care Standards, Pain Reassessment

1. Introduction

The pain management nursing care standards forms the basis of many health care institutions to ensure that pain management is optimized in their care settings. The pain management nursing care standards were used to develop the pain management criteria for quality improvement to monitor compliance of nurses for pain assessment and reassessment after interventions. On the one hand, pain management nursing care standards were used to guide nurses in their clinical areas how to assess and manage the pain effectively. It was therefore necessary for pain management to be the top priority to maintain pain management nursing care standards that includes pain assessment and reassessment after interventions [1, 2].

The development of Coronavirus diseases (COVID-19) into a pandemic has overwhelmed many health systems and caused widespread social and economic disruption and are a clarion call for a step change in attitudes, mindsets, and behaviours in responding to global health emergencies [3-5]. As a result, many healthcare institutions globally faced an unprecedented health crisis as a result nurses' routine nursing care and some of guidelines had to change as part of preparing to accommodate and to adjust to the prevailing situations of COVID-19 pandemic.

The two University hospitals in Riyadh, Kingdom Saudi Arabia were officially recognized by Joint Commission International (JCI) and Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI). Therefore, two hospitals were to conform according to the standards placed by the two

accreditation bodies. In this essence the two university hospitals were expected to demonstrate the competence to carry out and perform according to the expectations, structures, and functions that must be in place stipulated by the two accreditation bodies [6, 7]. The competence of the two university hospitals to perform conformity assessment tasks enhanced positive outcomes in patient satisfactions, good sleep, comfort, relieve of anxiety, minimize depression due to pain and lower the hospital costs and complications related to uncontrolled pain [6-8]. Patient and Family Rights (PFR) is a common chapter available in the (JCI) accreditation (6th edition) and (CBAHI) standards for hospitals (3rd edition) [12]. Since pain management was considered internationally as the standard for accreditation as recommended by JCI and CBAHI, the two university hospitals expected this patient right to be respected, therefore pain screening or assessment was expected to achieve 100% compliance rate [9-12].

The nurse's role was to comply with the set pain management nursing care guidelines for pain assessment and reassessment after interventions to maintain the patient-centered standards of care for those patients who experienced pain [13, 14]. The nurses were to perform other tasks such as turning the patients for skin care, sending the patients for procedures out of the units, concentrating on individual patient's critical status and other care to be rendered. Furthermore, they were to ensure that patients received optimal pain management by executing and reporting the effectiveness of their pain treatment plan to promote early recovery and preventing complications of uncontrolled pain [15]. The role includes initial pain screening on arrival or admission, continued comprehensive pain assessment and reassessment after interventions [16]. More important to develop a patient-centered pain management nursing care plan, implementation of pain nursing care plan, reassessment of pain after interventions, observing and reporting the impact of pain on patient's quality of life [17]. Other role of nurses was to enhance the patients' functioning, participation on daily activities, providing and reinforcing patient education for empowerment of the patient and the family member [16, 17].

The two university hospitals had pain team nurses (PTNs) working in both two hospitals to support the nurses in different units and collaborated the pain management activities of care related to pain assessment and reassessment standards of nursing care guidelines. The PTNs also monitored the compliance of pain management nursing care standards by auditing the standards of care related pain management. They also conducted education for empowerment of nurses with knowledge and skills with considerations of multidimensional nature of pain by assessing and documenting in patients' medical records the elements such as intensity, location, duration and description, the impact on activity and the factors that may influence the patients' perception of pain [18-20].

Initial pain assessment was conducted to explore the rationale for patients to seek care, to decide on type of pain interventions to provide, and the patients' understanding of their current situation about their pain [21]. Initial pain screening was considered as a basic question asked to the patients who can verbalize their pain on arrival to any entry for access of care to the hospital, either emergency departments, outpatients or directly to the units for hospitalization by simply asking the question: "Do you have pain right now?" [22]. If the patient experiences pain, further assessment was conducted by asking the question: "how does it rate on the numeric rating scale, from 0 (no pain), 1 to 3 (mild pain), 4 to 6 (moderate pain) to 10 (worst possible pain)?" Based on this pain screening of the individual's responses, the nurse will further ask additional questions by following the systematic pain assessment guide tools to cover the multidimensional nature of assessing pain and to probe more deeply into certain domain symptoms of pain or revisiting certain questions by asking them in different ways [22].

To conduct comprehensive pain assessment, the nurses used pain assessment guide tools such as WILDA acronym (words, intensity, location aggravating or alleviating factors) [23] and PQRST acronym (provoking/ palliation factors, quality of pain, region/radiation, severity, and timing) that guided them to perform accurate pain assessment and reassessment [18]. Even though internationally there are so many pain tools to utilize, the fundamental four main pain assessment tools used by the nurses in these two university hospitals to measure or assess pain were CRIES acronym (cry, requires oxygen, increased vital signs, expression, sleeplessness) for neonates [24]; FLACC acronym (Face, Legs, Activity, Crying and Consolability) behavioral scale for non-verbal patients [24, 25]; and for verbal patients they were either using Wong Baker scale [25] or Numeric rating scale [26]. Other pain scales or tools were used in other specific specialized areas such as intensive care and neonatal units with patients sedated and intubated. Pain reassessment was conducted to evaluate the effectiveness of delivered interventions and to monitor the adverse effects of pain medication such as nausea and vomiting, pruritus, respiratory depression, and over-sedation.

To comply with pain assessment and management standards, the PTNs participated in introducing and implementing hospital wide pain management nursing guidelines that standardized the care for instance: initial pain screening or assessment to be within an hour on arrival or admission of the patient; pain reassessment 30 minutes after intravenous analgesia, 1 hour an after oral, rectal, subcutaneous, intramuscular analgesia; and immediately after non-pharmacological interventions.

The PTNs visited the units to assess, educate and reassess the patents as part of collaborations with the units during their clinical rounds. During the clinical rounds, the PTNs audited pain management nursing documentation to evaluate patient nursing care standards compliance. Monthly pain audits were conducted as part of quality improvement of pain management for monitoring compliance of nurses to care standards. The aim was to improve nurses' pain management compliance regarding pain assessment during arrival to the clinics, emergency departments or in the wards and reassessment after interventions to patients who experienced pain. This also enabled them to identify any of the areas that

needed improvement of pain management patient care. Being aware of the challenges that predisposed by the COVID-19 crisis, the team measured the sustainability of the pain management nursing care standards compliance rate.

Consequently, by sharing this quality improvement of pain management was aimed to demonstrate how nurses in two university hospitals in Riyadh Kingdom of Saudi Arabia sustained compliance to conduct pain assessment of patients on arrivals to the clinics, emergency department, admissions to the wards and reassessment after interventions during COVID-19.

2. Method

The two university hospitals in Riyadh, Kingdom of Saudi Arabia, University Hospital A (UHA) and University Hospital B (UHB) were accredited by CBAHI and JCI. The hospitals were to maintain their three quality improvement indicators for pain management nursing care standards comprising, initial pain screening or assessment of patient on arrival to the outpatient clinics, admission to emergency department or inpatient wards and pain reassessment after interventions. Clinical audits are globally recognized to be essential in all healthcare, enabling quality of care to be monitored and improved to measure outcomes of pain management in patients experiencing pain [27, 28].

Monthly retrospective pain audits were undertaken by using electronic patients' medical records of both adults and pediatric as source of data. Uses of clinical data mandating pain assessment and reassessment within specific timeframes and analgesia administration improves quality of care in pain management [28, 29]. Data was used to identify whether nurses maintained high-quality of pain management nursing care standards aimed to promote optimal pain management interventions based on the patient's individual needs [30, 31]. Three simple standardized pain audit checklists from key pain management nursing guidelines were developed by PTNs. Pain team nurses were educated through their daily meetings to introduce the standards and procedure how to collect data manually using the three audit checklist tools to audit the patients' medical records [32]. To ensure validity of data collected, one of the pain team members who did not perform the audits was assigned to validate 10 % of the files audited. For the population size, the two hospitals have approximately 1800 bed capacity. The required monthly sample size was 128 files randomly selected for each of the three pain management audit checklists. The sample size was calculated based on the quality management guidelines that estimated that for the population size of ≥ 640 to select at least 128 sample size as this was more representative of the population. Each unit had therefore a chance to be audited at least a minimum of two files every month. The audits were carried out from the 14th of each month to the 13th of the following month.

The three pain management audit checklists used to measure the pain management nursing care standards followed met or not met dichotomous questions. The first audit checklist in Table 1 illustrated the initial pain screening or assessment within an hour of arrival to the outpatient clinic.

Table 1. *Initial pain screening or assessment on arrival to the clinic.*

Criteria	Met	Not Met
Pain screening/assessment is documented in patient's record within an hour of arrival to the clinic		

Table 2 demonstrated the second audit checklist for the initial pain screening or assessment within an hour of admission to the inpatient or emergency units.

Table 2. *Initial pain screening or assessment on admission to the inpatient or emergency unit.*

Criteria	Met	Not Met
Pain screening/assessment is documented in patient's record within an hour of arrival to the inpatient or emergency unit		

Table 3 illustrated pain reassessment after interventions within 30 minutes after intravenous analgesia, 1 hour after oral, rectal, subcutaneous, intramuscular or subcutaneous analgesia, and immediately after non-pharmacological interventions for units that offered pain interventions [39].

Table 3. *Pain reassessment after interventions.*

Criteria	Met	Not Met
Pain reassessment after intervention is documented in patient's record: (Immediately after non-pharmacological; 1 hour after oral, rectal, subcutaneous, or intramuscular; 30 minutes after intravenous)		

For data entry and analysis, excel sheet was used to generate the graphs automatically. Each of the three-pain management nursing care standards were expected to be achieved at 100% compliance rate [33]. The goal was to achieve minimum of 80% to 100% as adopted from the recommendation by Institute for Healthcare Improvement (IHI), if the pain management audit was less than 80% achieved, major action plan had to be implemented by the PTNs in collaboration with the units identified not compliant [33]. PTNs also provided immediate feedback to the units' leadership. To continue enhancing this achievement, PTNs were conducting daily scheduled pain rounds in the units that focuses on assessment of non-compliance areas of pain management. Furthermore, they conducted individual informal education to relevant staff with identified non-compliances regarding pain management nursing care standards for example pain screening, pain assessment, type of pain, pain interventions or pain reassessment.

To these quality improvement nursing initiatives, the same pain management data collected every month were compared with the first and second quarter of 2019 and 2020 to evaluate and identify areas of improvement during the COVID-19 pandemic regarding compliance of nurses to nursing care guidelines of pain management. This gave us the following results as discussed below.

3. Results

The emphasis of these results was on how the nurses played their role in sustaining the pain assessment during arrival of patients to the outpatient clinics, admission to

emergency departments or the wards and pain reassessment after interventions. The nursing standards of pain management care compliance rate were compared to the outcomes of the first six months of 2019 and 2020. The following were the findings of the three measurements of pain management standards of nursing care of the two university hospitals regarding: initial pain screening/assessment on arrival to the outpatient clinics, on admission to emergency departments or the wards and pain reassessment after interventions are presented below.

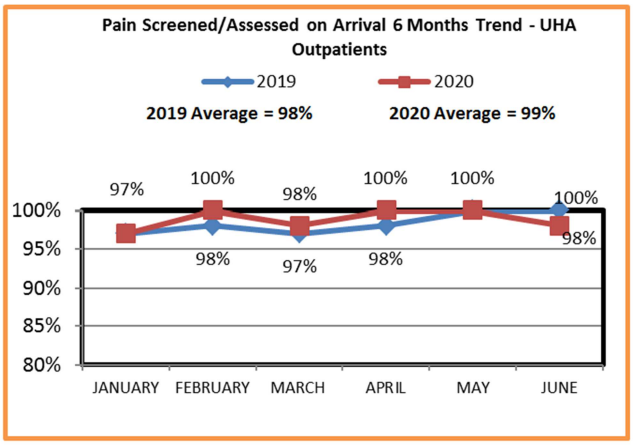

Figure 1. *UHA Outpatient pain screening on arrival to the clinic.*

Figure 1 illustrated the comparison of care compliance results of pain screening of 128 files audited each month for university hospital A (UHA) outpatient clinics between first and second quarter for both mean (M) score of 2019 (M=98%:) and 2020 (M=99%) respectively. This suggests that the nurses were maintaining the compliance rate for pain management nursing care standards significantly the last 6 months almost the same as during non-pandemic period with increase of more than 1% in 2020 during the pandemic.

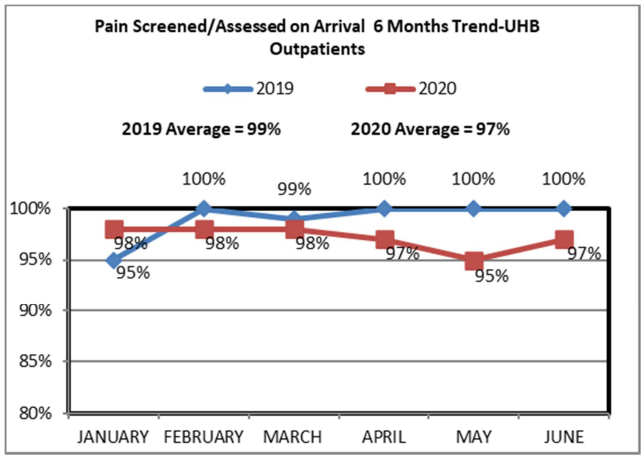

Figure 2. *UHB Outpatient pain screening on arrival to the clinic.*

Figure 2 illustrated the comparison of care compliance results of pain screening of 128 files audited each month for university hospital B (UHB) outpatient clinics between first and second quarter for both with mean score of 2019 (M=99%:) and 2020 (M=97%) respectively. This suggests that the nurses were still maintaining the compliance rate for pain management nursing care standards significantly the last 6 months almost the same as during non-pandemic period with 2% decrease in 2020 despite the pandemic.

Figure 3 illustrated the comparison of care compliance results of pain screening of 128 files audited each month for UHA inpatients/ER between first and second quarter for both with mean score of 2019 (M=99%) and 2020 (M=100%) respectively. This suggest that the staff compliance for pain management care was sustained for the last 6 months of 2020 of pandemic and was 1% higher than the previous year period of 2019 regardless of COVID-19 care settings.

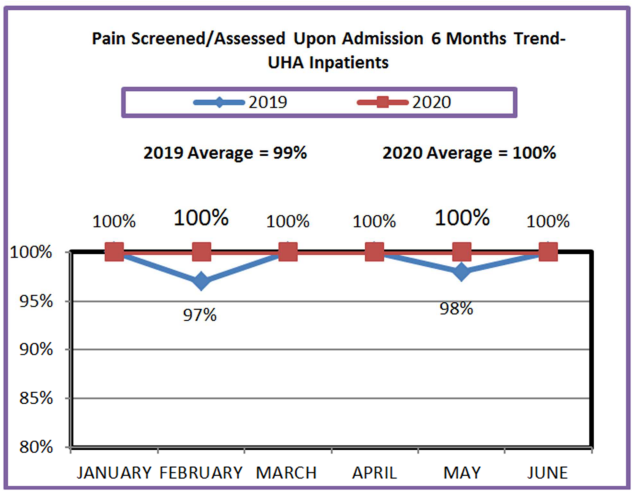

Figure 3. *UHA Inpatient/ER pain screening on admission.*

Figure 4 represented the comparison of care compliance results of 128 files each month for pain reassessment after interventions for UHB inpatients/ER between first and second quarter for both with mean score of 2019 (M=100%) and 2020 (M=99%) respectively. This suggest that the staff compliance for pain management care was sustained for the last 6 months of 2020 was 1% less compared 2019-year period of COVID-19.

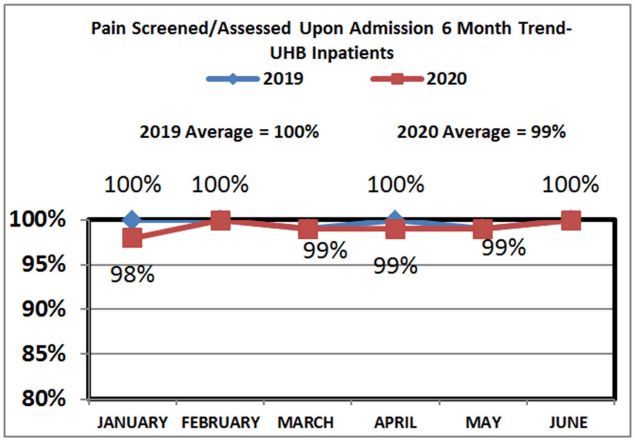

Figure 4. *UHB Inpatient/ER pain screening on admission.*

Figure 5 represented the comparison of care compliance

results of 128 files each month for pain reassessment after interventions for UHA inpatients/ER between first and second quarter for both with mean score of 2019 (M=99%) and 2020 (M=98%) respectively. This suggest that the nurses' compliance for pain management care was sustained for the last 6 months of 2020 decreased by 1% compared to 2019-year period of COVID-19.

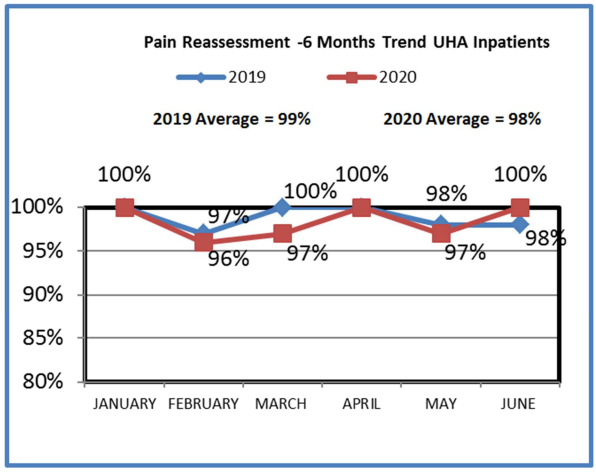

Figure 5. *UHA pain reassessment after interventions Inpatient/ER pain screening on admission.*

Figure 6 represented the comparison of care compliance results of 128 files each month for pain reassessment after interventions for UHB inpatients/ER between first and second quarter for both with mean score of 2019 (M=93%) and 2020 (M=99%) respectively. This suggest that the staff compliance for pain management significantly was better than 2019. The average for the last 6 months of 2020 was 7% higher as compared to 2019-year period regardless of COVID-19 care settings. The pain reassessment was the focus of improvement in Hospital B for low averages of February April 2019 as illustrated in Figure 6. The six-month trend average indicated that after intervention by pain team nurses the results of UHB for pain reassessment improved significantly.

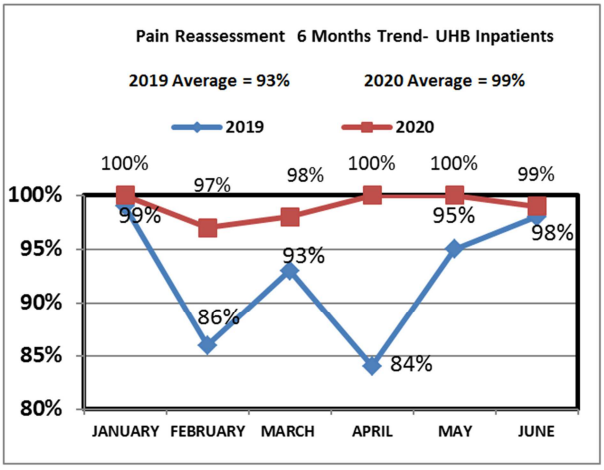

Figure 6. *UHB pain reassessment after interventions Inpatient/ER pain screening on admission.*

Continuity of clinical education and outcome monitoring of pain assessment and reassessment after interventions improved the nursing care standards of pain management [34]. The nurses adopted the skills and practice due to frequent feedback obtained from the pain team during usual clinical rounds and every 14th of the month by displaying the results and the unit for improvement. PTNs played a major role in informing each unit where to improve based on the results shared every month.

4. Discussion

The shared findings showed a great success of these two university hospitals and how safest the nurses maintained their daily nursing practice for pain assessment and reassessment after interventions for pain management nursing care standards during the Covid-19. These pain management clinical audits for initial pain screening and pain reassessment after interventions of the two university hospitals demonstrated whether the standards that were in place enhanced continued care and practice during COVID-1 care environment.

These findings indicated how the nurses were dedicated in sustaining the quality of pain management standards related to pain assessment and reassessment. There have been positive outcomes of the clinical audits performed for pain management improvement in countries such United Kingdom, Sri Lanka, and others [33, 35].

The objective was to improve nurses' compliance regarding conducting initial pain screening/assessment to all patients arriving to the hospitals and reassessment of pain after interventions. Both the first six months of the year of 2019 and 2020 did not show any significant changes when compared against each other. This demonstrated that during COVID-19 the two university hospitals maintained and achieved care compliance rates with no great changes about initial pain assessment on arrival to the outpatient clinics, emergency departments or the wards and pain reassessment after interventions. For the first six months of 2019 and 2020 both two hospitals achieved compliance sustainability.

The average rate for initial pain screening for outpatients' clinics in 2019 was 98% for hospital A and 99% for hospital B, while in 2020 was 99% for hospital A and 97% for hospital B. Secondly the average rate for initial pain assessment for inpatients/emergency units in 2019 was 99% for hospital A and 100% for hospital B, while in 2020 was 100% for hospital A and 99% for hospital B. Thirdly, for pain reassessment in 2019 was 99% for hospital A and 93% for hospital B, while in 2020 was 98% for hospital A and 99% for hospital B

The PTNs did action plan to follow-up with each unit in UHB for non-compliance during February 2019 average was 86% while in April 2019 it was 84% to identify the factors contributed not to achieve the targeted 100%. The follow-up and collaboration with the units enhanced the improved that was achieved by the UHB. The use of electronic medical records for manual data analysis was the strength of these

audits as the documentation was organized and standardized [36]. Both nurses of the two university hospitals tirelessly maintained the pain management standards of care significantly as the outcome of the mean average of six months of 2019 versus 2020 of the three-quality improvement of pain management ranged between 93% to 100%. The strengths of a retrospective audit include reporting on real-world clinical practice and standard of care compliance without biasing clinical documentation [19]. The positive point about these results was providing the two hospitals the insight about the best nursing practice and compliance that was evident from the nursing documentation regarding the three pain management standards [36].

The limitations of this quality improvement of pain management was its retrospective nature of manual auditing of both initial pain screening/assessment or reassessment from medical records as studies have shown that to reduce the risk of human error with the actual time of nursing care and time of documentations or what patient might have verbalized may differ with what is documented [37, 38].

5. Conclusion

To sustain pain assessment and reassessment nursing care standards, it is important to have nursing quality improvement initiatives targeted to monitor compliance of nurses for the set nursing standards. The compliance of nurses and presence of Pain Team Nurses enhanced the sustainability of pain nursing care standards in both two University hospitals. Hence it is recommended to continue monitoring the nurses' compliance to conduct pain assessment and reassessment despite COVID-19 settings.

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