Results
30 articles were selected for analysis, from the 246 records originally obtained. In 15 studies (50.0% of the total), cytological analysis was performed to determine the frequency of degenerative nuclear changes (pyknosis, karyolysis and karyorrhexis) in exfoliated oral mucosa cells, and diagnostic irradiation was associated with a statistically significant increase ($p < 0.05$) in at least one of the above-mentioned cytotoxicity markers (post-exposure versus pre-exposure comparisons). Changes were observed regardless of the radiographic imaging technique used, e.g., conventional X-ray techniques, panoramic radiography or cone-beam computer tomography (CBCT).
Conclusions
The frequency of degenerative nuclear changes (pyknosis, karyolysis and karyorrhexis) in exfoliated oral mucosa cells appears to be a sensitive and reliable effect biomarker of low dose IR exposure in the context of dental diagnostic imaging. These effect biomarkers could also prove useful to evaluate the cytotoxicity of other agents and materials commonly used in dentistry. However, further studies will need to be undertaken to ascertain that.

P17
- Excision repair SNPs may influence the extent of DNA damage from radioiodine therapy in lymphocytes from thyroid cancer patients

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Background
Thyroid cancer (TC) is the most common endocrine malignancy, with rising incidence. Radioactive iodine (^{131}I) is the standard therapy: ^{131}I is captured by thyrocytes, releases ionizing radiation and inflicts DNA damage, inducing cell death. Prognosis is good. Because ^{131}I may enter other cells, raising secondary malignancy risk, TC management guidelines now recommend cautious ^{131}I use. Since DNA repair counteracts DNA damage, DNA repair SNPs may interfere with ^{131}I-induced damage.
Materials and methods
We assessed micronuclei (MN) frequency in 26 TC patients undergoing ^{131}I therapy – 15 patients exposed to 70 mCi, 11 to 100 mCi. MN levels were assessed before and after ^{131}I exposure (1, 6 and 24 months for 70 mCi-treated patients; 1 and 3 months for 100 mCi-treated patients). Patients were genotyped for excision repair SNPs by real-time PCR, using TaqMan® Genotyping Assays (Applied Biosystems), or by PCR-RFLP. MN level variation from baseline was compared between genotypes, for each time point, in both dose groups. The study was approved by the Ethics Committees of Instituto Português de Oncologia Francisco Gentil (GIC/357) and Faculdade Ciências Médicas (CE-5/2008). Informed consent was obtained from all participants.
Results
ERCC5 rs17655, *RAD23B* rs1805329, *XPC* rs2228000 and *XPC* rs2228001 variant allele carriers exhibited significant differences in MN frequency at one of the time points considered in at least one dose group. For *ERCC5* and *XPC* SNPs, significant differences in MN level variation from baseline were also observed in the 100 mCi group.
Conclusions
Excision repair SNPs may influence DNA damage, hence therapeutic outcome in ^{131}I-treated patients. This could modify the risk of developing ^{131}I-induced secondary malignancies and therapeutic efficacy. Further studies are needed to validate these results and to identify additional SNPs contributing to interindividual variability in response to ^{131}I.

P18
- Identification and characterization of Candida spp. from denture stomatitis patients

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Fungi of the genus *Candida* are opportunistic pathogens that normally colonize mucosal tissues, from the oral cavity to the urogenital tract. The increase in *Candida* spp. infections is associated with their easy dissemination, ability to colonize surfaces including medical devices, and the development of cross-resistance to antifungal drugs.
The use of drugs with broad-spectrum antifungal activity, such as fluconazole, both for the treatment of patients and for prophylaxis, leads to the development of resistant strains. The difficulty in making an accurate diagnosis and a quick assessment of the susceptibility profile to antifungals may contribute to high morbidity and mortality rates in these infections.
In this work, we have identified *Candida* species isolated from patients with denture stomatitis, from the University Dental Clinic of the Universidade Católica Portuguesa in Viseu, Portugal. Phenotypic and molecular characterization of isolates was carried out, through the determination of their hemolytic activity, susceptibility profile to fluconazole and, in resistant isolates, the identification of polymorphisms related to the development of antifungal resistance.
These studies can further contribute to the prevention of more serious infections and to the design of alternative and more effective therapeutic options.
The project has been approved by the Health Ethics Committee from Universidade Católica Portuguesa (CES-UCP, nr. 113).

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P19
- Adaptation and implementation of the European matrix for teaching spiritual care to nursing students

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Background
The World Health Organization's concept of health currently comprises eight dimensions: emotional, spiritual, intellectual, physical, environmental, financial, occupational, and social. Including the spiritual dimension [1] represents an essential milestone in recognizing its positive impact on health, well-being, and quality of life.
In this sense, nursing students' acquisition and development of spiritual care skills are required, particularly in undergraduate nursing degrees. Also, the evidence demonstrates the positive relationship between spiritual education and spiritual competencies, emphasizing

the need for spiritual education as an integral and regular part of the undergraduate nursing *curriculum*. Regardless of this evidence, the educational strategies for improving and developing undergraduate nursing students' skills and competencies are scarce and should be urgently considered as nurses and midwives still report feeling unprepared for providing spiritual care.
Recently, the EPICC project (Nurses' and Midwives' Competence in Providing Spiritual Care through Innovative Education and Compassionate Care)[2] has been implemented as a turning point in nursing education for spiritual care and spirituality, through a systematic, consensual, and effective response, by involving multiple partners and experts from different European countries. Portugal has been a participant in that Erasmus-funded project.
Materials and methods
This Ph.D. project concerns the translation, adaptation, and implementation of the EPICC matrix. First, a translation and cultural adaptation process will be conducted according to the core project guidelines [3]. Then the matrix for education and assessing spiritual care competencies will be implemented in a pilot study in a Portuguese nursing school involving undergraduate nursing students.
Results
The core project guidelines represent V stage of the cross-cultural adaptation process. The preliminary results point to the beginning of stage III with the back translation of the synthesized written version of the EPICC Spiritual Care Education Standard and EPICC Spiritual Care Competency Self-assessment tool. Stage I (initial translation with written reports of each – T1 and T2) and Stage II (synthesis of the translations to version T12) of the translation and cultural adaptation of the EPICC matrix are already concluded.
Conclusions
This innovative project could help improve Portuguese schools' nursing curricula from an evidence-based perspective.

References

1. World Health Organization. The Spiritual Dimension: Resolution of the Executive Bord of the WHO. 1984.
2. McSherry W, Ross L, Attard J, van Leeuwen R, Giske T, Kleiven T, et al. Preparing undergraduate nurses and midwives for spiritual care: Some developments in European education over the last decade. Journal for the Study of Spirituality. 2020 Jan 2;10(1):55–71.
3. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the Process of Cross-Cultural Adaptation of Self-Report Measures. Spine (Phila Pa 1976). 2000;25(24):3186–91.

Session 2 - Clinical Care

P20

- Surgical Site Infections in Colorectal Surgery and generic prevention bundles

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Background
Surgical Site Infections are amongst the most frequent complications in colorectal surgery. Colorectal Surgical site infection rates in Europe have seen a modest decrease when compared with other types of surgical procedures.
Discussion
The European surveillance system has studied surgical site infections in the last two decades being colorectal surgery the highest among them.
Several surgical site infection prevention bundles have been introduced since, but few of them are tailored to colorectal surgery.
Methods
A retrospective study was undertaken from colorectal surgeries performed between 2011 and 2020. An analysis of annual surgical site infection rates, as well as the compliance to the Portuguese surgical site infection prevention bundle between 2019 and 2020.
Results
2345 colorectal surgeries were studied in accordance with HELICS/HAI-Net SSI protocols. Surgical site infection rates varied between 26.35% (2013) and 34.10% (2019), with an average of 30.06%.
Regarding the compliance rate of the prevention bundle, results were underwhelming, but it was noted that glycemic control (84.9%) and hair removal avoidance (74.5%) were the individual interventions with better observance.
Conclusion
The development of prevention bundles tailored to colorectal surgery could prove to be an adequate tool for a sustained reduction of surgical site infection rates.

P21

- Surgical Site Infections in Colorectal Surgery: a Portuguese prespective

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BMC Proceedings 2023, **17(9):**P21

Background
Surgical Site Infections are amongst the most frequent complications in colorectal surgery and are associated with increased healthcare and socioeconomical costs.
Methods
A retrospective study was undertaken from colorectal surgeries performed between 2011 and 2020. An analysis of annual surgical site infection rates, as well of types of infection was performed. Data of compliance to the Portuguese surgical site infection prevention bundle was collected and analyzed from 2019 and 2020.
Results
2345 colorectal surgeries were studied in accordance with HELICS/HAI-Net SSI protocols. Surgical site infection rates varied between 26.35% (2013) and 34.10% (2019), with an average of 30.06%. Overall the most prevalent microorganisms were *Escherichia coli* (23.79%) e *Enterococcus faecalis* (21.37%). By infection type the most frequent micoorganisms were *Enterococcus faecalis* (27.47%) in superficial, *Escherichia coli* (25.92%) in deep incisional and *Escherichia coli* (26.21%) in organ/space surgical site infections.
Regarding the compliance rate to Portuguese surgical site infection prevention bundle, results were underwhelming, but it was noted that glycemic control (84.9%) and hair removal avoidance (74.5%) were the individual interventions with better observance.
Conclusion
Surgical site infection rates in colorectal surgery are still high despite the use of prevention bundles. Targeted bundles may be the answer.

P22

- RadWounds | Dosimetric impact of the wound dressing material used in radiotherapy

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