

Background

Oxygen is recognised as an essential element in the wound healing process and, it is suggested that the topical application of oxygen may be a promising therapy in wound care. Thus, the importance of oxygen in the tissue healing process is evident, namely in ATP synthesis; production of reactive oxygen species, which stimulate vascular endothelial growth factor synthesis; and microbial growth inhibition through the promotion of macrophage chemotaxis and increase of leukocyte activity. Moreover, oxygen increases the rate of collagen deposition, an important step in healing, which supplies the matrix for angiogenesis and tissue maturation. Thus, according to the P.I.C.O. review model for clinical questions, this systematic review intends to answer the research question "*In chronic wounds, how does topical oxygen therapy affects wound healing?*". It was considered chronic wounds for "patient population or disease of interest", topical oxygen therapy for "intervention or issue of interest" and wound healing for "outcome". However, a "comparison intervention or group" and a "time frame" were not applicable.

Objective

The aim of this study was to conduct a systematic review of the current evidence for this therapy through the analysis of primary research studies published between January 2006 and December 2016.

Methods

Published literature was identified using Scopus, B-On, Scielo, Pubmed, Ebsco Host and Medline databases. Exclusion criteria and quality indicators were applied and a total of 11 articles with different designs were included in the review.

Results

The studies analysed emphasise the evidence of additional O₂ usage in wound care, since it reduces hypoxia and it allows triggering mechanisms which are essential for the healing process. The analysed literature presents the results of its effects in its various forms: pressurized, continuous and dissolved. Although there are still questions about the exact mechanisms of this treatment and it is necessary to carry out randomised studies, the current results suggest that this therapy plays an important role in restoring the O₂ balance in the wound bed, necessary for healing.

Conclusions

These findings show the potential of this therapy in promoting healing of chronic wounds and improving people's quality of life. In addition, there are many other potential advantages related to its usage, such as low cost, apparent safety, no associated adverse effects and the possibility to submit a diversified population to this care at any health organisation or even at the patient's home.

Keywords

Oxygen, Topical administration, Wound Healing, Wounds and Injuries.

P11

Microbiological characterization of bathing areas of a county in the Northern region

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Background

The management of bathing water aims at the protection of human health and the preservation, protection and improvement of the quality of the environment [1, 2]. In order to control the quality of these same waters for recreational use, microbiological indicators of faecal contamination are monitored, according to Decree-Law 135/2009 of June 3rd [1]. The microbiological indicators of faecal contamination used are *Escherichia coli* and *Enterococcus spp.* since they are commensals of the gastrointestinal flora of humans and most animals [3].

Objective

This study aimed to characterize the results of intestinal *E. coli* and *Enterococcus* parameters of inland bathing waters of a county in the northern region of Portugal during 2016.

Methods

A retrospective descriptive study was performed using database records from a northern laboratory. The microbiological parameters studied to characterize the inland bathing waters included CFU/100mL of *E. coli* and CFU/100mL of intestinal *Enterococcus*. The results were classified as "Bad", "Acceptable", "Good" or "Excellent", according to the Decree-Law 135/2009 of June 3rd [1].

Results

We verified that in the total of 26 inland bathing waters under study, 6 (23.1%) obtained a quality equal to or greater than "Acceptable". The remaining 20 bathing waters (76.9%) were classified as "Bad". This result, in 17 samples was due to both parameters, intestinal *Enterococcus* and *E. coli*. In the other three, the "Bad" classification was only due to the *Enterococcus* results. The months with the highest counts of *E. coli* were September (45.69%), June (43.30%) and May (39.62%), and for *Enterococcus* were May (52.83%), June (52.58%) and July (32.35%).

Conclusions

In an initial study and applying criteria that will then have to be more extended in terms of time, there is a first tendency for most of the inland bathing waters under study to present "Bad" quality (76.90%). Since all bathing waters should have at least "Acceptable" quality and provisional data, these results indicate an urgent need to take measures in order to counteract this and increase the number of bathing waters classified as "Excellent" or "Good." The different *E. coli* and intestinal *Enterococcus* counts observed in different months showed that climatic, environmental, social and urban factors could be involved in this differences and deserves attention in future studies [2, 4]. The quality of bathing water is fundamental in terms of public health. In this sense, the results of this study are worrisome, however these studies should be conducted in a longer time perspective.

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Keywords

Inland bathing water, Fecal contamination indicators, *Escherichia coli*, *Enterococci* intestinal.

P12

Microbiological characterization of food handlers in school canteens

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Background

Food-borne substances are a major concern of Public Health, given that food can be the source of various hazards (biological, physical and chemical). Approximately 20% of outbreaks of food-borne illness are associated with the personal hygiene of food handlers. The personal hygiene of manipulators is one of the best ways to block bacterial contamination and its extension to new areas [1, 2].

Objective

To evaluate the microbiological profile of the hands of food handlers in school canteens of the northern region of Portugal during 2016 and to verify the efficiency of the hygiene processes.

Methods

Handlers and utensils were tested using a swab soaked in Maximum recovery diluent-Histidine Lecithin and Polysorbate (MRD-HLPS) rubbing against parts where food might get retained, following ISO 18593: 2004 [3]. The parameters evaluated were coliforms at 37°C/24h, *Escherichia coli* at 44°C/24h and coagulase positive *Staphylococcus* at 37°C/48h, according to ISO 4832:2006 [4], ISO 16649-2:2001 [5] and ISO 6888-1:1999 [6], respectively. A statistical analysis of the results of the microbiological profile evaluation was carried out at the hands of the food handlers of public primary school canteens.

Results

Our results of the microbiological profile of the hands of food handlers showed that 9.95% of samples analysed had bacterial contamination. Most of the samples with bacterial contamination were caused by the presence of coliforms, followed by coagulase positive *Staphylococcus*. Only one sample was registered with positive *E. coli*. It was not found a significant difference in the proportions of samples with bacterial contamination and positive for coliform bacteria and coagulase positive *Staphylococcus*, in the distribution line and in the kitchen, over the several months.

Conclusions

The food handler is an important and recognized source of bacterial contamination of foodstuffs [1, 2]. The results of the present study indicate the necessity to implement measures to control bacterial contamination in the hands of manipulators of school canteens, aiming at correcting possible flaws encountered. Food legislation, the Hazard Analysis and Critical Control Point (HACCP) system, and reference documents such as the Codex Alimentarius and the Food Code present guidelines to promote improved food hygiene and personal hygiene for handlers [2, 7].

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Keywords

Food safety, Food handlers, Hand hygiene, Microbiological evaluation, Bacterial contamination.

P13

Exploring the effectiveness of digital psychoeducational interventions on depression literacy: a scoping review

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Background

Depression is a huge burden requiring efficient strategies for prevention and treatment [1]. Psychoeducation can improve health literacy and help to reduce the stigma of help-seeking. In recent years, the Internet has been suggested as a way to deliver mental health interventions to a broader range of persons and to reduce barriers to seek help from face-to-face services. However, little is known about the effectiveness of digital psychoeducational interventions on health literacy and psychological outcomes, such as help-seeking intentions [2].

Objective

To derive practical implications for health professionals, this scoping review aimed to explore the effectiveness of different digital psychoeducational interventions strengthening depression literacy or knowledge (primary outcome), stigmatizing attitudes and on help-seeking attitudes, intentions and behaviour (secondary outcomes). This review is conceptualized as an update and expansion of previous research [2] with a focus on a broad range of interventions.

Methods

In May 2017, a systematic search through electronic databases (e.g. PsycINFO and PSYINDEX) was performed to identify longitudinal studies on the effectiveness of digital interventions targeting depression-related mental health literacy among adults published between 2007 and 2017 in peer-reviewed English journals.

Results

Overall, 19 Studies met the inclusion criteria, mostly stemming from Australia. The findings of 13 of the included 17 studies evaluating mental health literacy revealed significant increases in depression literacy. Pure dissemination of information via websites, e-mails or psychoeducational interventions yielded primarily positive findings. Both Internet-based Cognitive Behavioural Therapy and online game programs were found to be knowledge-enhancing, except for one study using a simulated dialogue. Findings on digital intervention targeting stigmatization in terms of individual, as well as perceived attitudes towards mental illness were inconsistent. Concerning perceived stigma, 4 of 8 studies showed positive results in reducing stigma, whereas other results were inconsistent. Likewise, the effects of interventions on help-seeking (n= 8 studies) with respect to attitudes (n= 5 studies), intentions (n= 6 studies) and behaviour (n= 4 studies) were inconclusive.

Conclusions

The evidence base on mental health literacy interventions is promising, but still limited. Various digital interventions are overall comparably effective in strengthening depression literacy and reducing stigmatizing attitudes. Given several limitations, future research should compare subpopulations to understand what works are best for whom in clinical practice. Furthermore, the comparability of knowledge levels of healthy and depressed persons should be considered. Finally, eHealth literacy of clients and health professionals should be explored and, where required, promoted with evidence-based information.

References

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