

MEETING ABSTRACTS

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## Keynote lectures

S1

### The role of practice-based research in stimulating educational innovation in healthcare

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#### Background

Practice-based research is not uncommon in healthcare. In fact, the way nurses and doctors train is through extensive and intensive practice [1]. In other words, practice-based research has been used to gain new knowledge partly by means of practice and the outcomes of that practice [2]. Practice based research networks have also been gaining on importance in healthcare as ways of addressing research questions informed by practicing clinicians. They aim to gather data and improve existing practices of primary care [3], practice-based research is not only about gaining new knowledge via practice and improving existing practices.

#### Objective

In this presentation/paper I explain and highlight the role of practice-based research as an instrument for educational innovation in healthcare sciences.

#### Methods

I used interview excerpts and examples of projects related to healthcare at different universities of applied sciences in the Netherlands and Germany (also known as polytechnics in Portugal) to advance the role of practice-based research in educational innovation. This type of research is an integral part of teaching and curricular assignments in the healthcare settings in the Netherlands and Germany, and particularly at universities of applied sciences. I emphasized how practice-based research can improve and enrich the curricula, while at the same time, building necessary skills of future healthcare professionals and improving practices in already existing healthcare institutions.

#### Results

I show that practice-based research is in fact short term problem-oriented research which serves educational purposes by upgrading students' and teachers' skills and knowledge of the profession and dynamics in the work environment; which also has the potential to improve company products or design solutions and at the same time contribute to local and regional innovation in professions and profession related institutions [4-5]. Its role is multidimensional and dialectic insofar it serves multitude goals and is accomplished in dialogue among relevant stakeholders [6]. Practical suggestions for healthcare educators and practitioners in designing their curricula to incorporate the basic elements of this practice-based research are also offered in this presentation/paper.

#### Conclusions

Practice-based research is more than knowledge acquisition via practice. Its role and goals expand to enriching educational curricula with a more comprehensive engagement of external and professional

stakeholders, at the same time contributing to student soft and professional skill development and solving stakeholder problems or optimizing services and products at local or regional levels.

#### References

1. Westfall JM, Mold J, Fagnan L. Practice-based research—"Blue Highways" on the NIH roadmap. *Jama*, 2007; 297(4): 403-406.
2. Andrews JE, Pearce KA, Ireson C, Love MM. Information-seeking behaviors of practitioners in a primary care practice-based research network (PBRN). *Journal of the Medical Library Association*, 2005;93(2):206.
3. Hartung DM, Guise JM, Fagnan LJ, Davis MM, Stange KC. Role of practice-based research networks in comparative effectiveness research. *Journal of comparative effectiveness research*. 2012;1(1):45-55.
4. Frederik H, Hasaneferdenc S, Van der Sijde P. Professional field in the accreditation process: examining information technology programmes at Dutch Universities of Applied Sciences. *Assessment & Evaluation in Higher Education*. 2017, 42(2): 208-225.
5. Hasaneferdenc S. Responding to new policy demands: A comparative study of Portuguese and Dutch non-university higher education organizations. [Doctoral Thesis]. Vrije Universiteit Amsterdam, the Netherlands. 2018.
6. Hasaneferdenc S, Heitor M, Horta H. Training students for new jobs: The role of technical and vocational higher education and implications for science policy in Portugal. *Technological Forecasting and Social Change*. 2016; 113: 328-340.

#### Keywords

Practice-based research, Short term, Problem oriented, Healthcare, Universities of applied sciences.

S2

### Is sexuality a right for all? Sexual revolution in the old age

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#### Background

*"Do not you think your grandmother has sex? What happens with old gays? Why does a kiss between two elders tenderizes us and we do not think it is erotic"* (interview, Ricardo Iacub, 2018). It still impacts us, and what do we do with it? Do we let it pass? Do we encourage them?

Throughout the centuries, sex has been postulated as the impulse that gives life to people. This word, of Latin origin, has always aroused much interest in society and in all stages of life; but it must be differentiated from "sexuality", because it contemplates various aspects among which it is found; sex, identities and gender roles, eroticism, pleasure, intimacy, reproduction and sexual orientation [1-6]. Sexuality is a vital dimension that is present in all stages of life, at least since adolescence. It contributes significantly to health and quality of life and is, moreover, a right recognized by international organizations such as the World Health Organization (WHO) [4, 7-9].



## Conclusions

In Portugal, the prevalence of supplementation consumption is still unknown, so it becomes necessary to raise awareness among the population, about potential risks associated with improper supplementation, special diets and unbalanced exercise.

## Keywords

Vitamins supplements, Food supplements, Consumption, Knowledge.

## P96

### Stability of paediatric oral diazepam suspensions

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## Background

Currently, hospital pharmacies prepare formulations that aim to adjust the medication to the needs of each patient when the pharmaceutical industry is not able to respond to those needs [1]. One of the formulations produced in the hospital pharmacy is the diazepam suspension 0.4 mg/ml for paediatric use, obtained from diazepam tablets. However, the use of tablets or powders in oral liquid formulations may alter the stability of the active ingredients. Therefore, these formulations should be submitted to stability studies [2]. Nevertheless, the information on the stability of manipulated oral suspensions is scarce [3], so this study is relevant.

## Objective

The main goal of this study is to validate a method of diazepam quantification in suspensions. Additionally, we aim to evaluate the stability of diazepam in suspensions during 30 days, after the suspension preparation, establishing an expiration date.

## Methods

The quantification method of diazepam in oral suspensions arose from the adaptation of the method described in Portuguese Pharmacopoeia [4], for the same active ingredient in tablets. After the method's validation, the stability of diazepam was evaluated weekly, during 30 days, and the first analysis was done immediately after the preparation of the suspension. During the study period, suspensions were stored under suitable cold conditions (4°C).

## Results

With an accuracy, evaluated by the mean recovery of 80%, and a precision, evaluated by the variation coefficient, varying between 6.1 and 11.5%, the method proved to be practicable. Two suspension's samples were prepared with a similar diazepam concentration (0.43 mg/ml). The stability study of those suspensions showed that diazepam concentration decayed linearly, and that diazepam suspensions lose about 70% of their active principle within 30 days. Moreover, given the limits indicated by the Portuguese Pharmacopoeia [4] for diazepam tablets, it was verified that these suspensions only comply with these limits after 7 days, and that within the established period of validity these limits are no longer met.

## Conclusions

Despite all limitations, the adapted method proved to be practicable and the results that followed have pointed to the possible instability of diazepam, when included in this oral suspension formulation. Given the dosage limits set for diazepam tablets [4] and knowing in advance that the validity period usually attributed to the suspension is 15 days, the results point to a new shelf-life of approximately 7 days. However, for a more consistent period of validity to be established, a more detailed stability study is required.

## References

1. Patel VP, Desai TR, Chavda BG, Katira RM. Extemporaneous dosage form for oral liquids. *Pharmacophore*, 2011, 2(2), 86-103.
2. Schlatter J, Bourguignon E, Majoul E, Kabiche S, Balde I B, Cisternino S, Fontan J E. Stability study of oral paediatric idebenone suspensions. *Pharmaceutical Development and Technology*, 2016, 22(2), 296-299

3. Ensom M H H, Kendrick J, Rudolph S, Decarie D. Stability of Propranolol in Extemporaneously Compounded Suspensions. *The Canadian Journal of Hospital Pharmacy*, 2013, 66(2), 118-124.
4. INFARMED. *Farmacopeia Portuguesa*. 8ª edição. 2008, 1925-1926; 2224-2225.

## Keywords

Diazepam suspensions, Chemical stability, Validation tests, Dosing method, Expiration date.

## P97

### First-time grandparents and transition to grandparenthood: integrative review of the literature

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## Background

Nowadays families become smaller but at the present time a family involves several generations (even if they do not live together). The family members' roles change and the role of the grandparents in the transition of first-time parents to grandparenthood needs to be understood.

## Objective

To systematize an integrative review of the literature related to the transition to grandparenthood in contemporary Western societies.

## Methods

We conducted an integrative review of the literature, in electronic databases (EBSCO®, b-On® and Web of Knowledge®) in order to answer the question: "How is experienced the transition to grandparenting?" The search was limited to articles published between 2006-2016 years, with the descriptors "grandparents" and "transition" in English, French, Portuguese or Spanish.

## Results

After analysing the abstracts of 179 articles, excluding repetitions, and those who did not respond to the original question, we obtained 13 articles to include in the integrative review. The level of the methodological approach was level 4. Only descriptive and qualitative studies (non-experimental) were included. The results of the literature review on the topic were grouped into five themes: grand-parenting and gender; become a grandfather/grandmother; parenting and the transition process; role and health; parenting and intergenerational relations.

## Conclusions

It was found that the transition to Grandparenthood is studied in risk situations, and more studied in women than in men. Grandparenthood can be seen as a transition or as an adaptive process; as the search for the meaning of life; opportunity for personal growth; a normative event that has emotions and positive and negative cognitions. The process of becoming a grandparent can be considered an event of great social impact. Grandparents see their grandchildren as their extension in time and this gives them a more positive view of aging. The perception that grandparents have of themselves may be important in promoting a positive and healthy aging.

## Keywords

Grandparenthood, Grandparents, Transition.

## P98

### Intestinal microbiota - impact on host health

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## Background

At present it is known that in addition to establish and maintain a normal intestinal health, the intestinal microbiota can exacerbate a multitude of diseases, ranging from colorectal cancer to autoimmune and allergic diseases [1]. The interest in studying the human microbiome, its diversity and human-microorganism interactions has been developing in the last years, as such it has been made available immense information in this area.

## Objective

Bibliographic review of the intestinal microbiota: constitution, what affects it, and its influence in the triggering of some pathologies.

## Methods

A comprehensive search was performed on the PubMed search, being obtained from this review 112 articles from which 67 were used.

## Results

The intestinal microbiota is considered a "superorganism" and is extremely complex. It is composed of a great diversity of microorganisms, which varies among individuals; however, it is essentially dominated by two phyla, the Bacteroidetes and the Firmicutes. It is dynamic and can be affected by several factors such as diet [2], breastfeeding [3], use of antibiotics [4,5] and type of delivery [6,7]. When an imbalance of the microbiota occurs, known as dysbiosis [1,8], the host is affected, being related to pathologies such as allergies, obesity and Crohn's disease. Some studies [9,10-14] have demonstrated that the microbiota participates in the maturation of the immune system and as such is predominant in the response to infectious processes. On the other hand, the intestinal microbiota seems to play a fundamental role in the prevention of allergies [15-26]. Inappropriate colonization after birth and excessive hygiene during childhood, may promote greater allergic reactions. Rats without bacteria have been shown to present more severe allergic reactions [22-26]. Regarding obesity, several authors [27-30] have demonstrated that changes in microbiota are strongly related to the establishment of obesity. It has been demonstrated that the type of microbiota influences obesity; rats with higher amounts of Firmicutes compared to the amount of Bacteroidetes, present greater capacity to promote fat deposition. On the other hand, a switch to a less caloric diet produced a change in the microbiota that led to a decrease in Firmicutes and an increase in Bacteroidetes. These results are surprising and suggest that future obesity control may originate from the type of intestinal microbiota.

## Conclusions

Intestinal microbiota is of great relevance because it protects against external factors and the development of certain pathologies. It is therefore important to keep the population informed so that a microbiota considered "normal" can be maintained from childhood to adulthood.

## References

- Parnell JA, Reimer RA. Prebiotic fiber modulation of the gut microbiota improves risk factors for obesity and the metabolic syndrome. *Gut Microbes*. 2012;3(1):29-34.
- David LA, Maurice CF, Carmody RN, Gootenberg DB, Button JE, Wolfe BE. Diet rapidly and reproducibly alters the human gut microbiome. *Nature*. 2014;505(7484):559-563.
- Cox LM, Blaser M. J. Antibiotics in early life and obesity. *Nat Rev Endocrinol*. 2015;11(3):182-190.
- Clemente JC, Ursell LK, Parfrey LW, Knight R. The impact of the gut microbiota on human health: an integrative view. *Cell*. 2012;148(6):1258-1270.
- Jernberg C, Löfmark S, Edlund C. Long-term impacts of antibiotics exposure on the human intestinal microbiota. *Microbiology*. 2010;156(Pt11):3216-3223.
- Adlerberth I, Strachan DP, Matricardi PM, Ahrne S, Orfei L, Aberg N, et al. Gut microbiota and development of atopic eczema in 3 European birth cohorts. *J Allergy and Clin Immunol*. 2007;120(2):343-50.
- Gronlund MM, Lehtonen OP, Eerola E, Kero P. Fecal microflora in healthy infants born by different methods of delivery: permanent changes in intestinal flora after cesarean delivery. *J. Pediatr Gastroenterol Nutr*. 1999;28(1):19-25.
- Blumberg R, Powrie F. Microbiota, Disease, and Back to Health: A Metastable Journey. *Sci Transl Med*. 2012;4(137):137rv7.
- Swidsinski A, Loening-Baucke V, Lochs H, Hale LP. Spatial organization of bacterial flora in normal and inflamed intestine: a fluorescence in situ hybridization study in mice. *World J Gastroenterol*. 2005;11(8):1131-1140.
- Hartstra AV, Bouter KE, Backhed F, Nieuwdorp M. Insights into the role of the microbiome in obesity and type 2 diabetes. *Diabetes Care*. 2015;38(1):159-65.
- Chow J, Lee SM, Shen Y, Khosravi A, Mazmanian SK. Host-bacterial symbiosis in health and disease. *Adv Immunol*. 2010;107:243-274.
- O'Hara AM, Shanahan F. The gut flora as a forgotten organ. *EMBO Rep*. 2006;7:688-693.
- Purchiaroni F, Tortora A, Gabrielli M, Bertucci F, et al. The role of intestinal microbiota and the immune system. *Eur Rev Med Pharmacol Sci*. 2013;17(3):323-33.
- Round JL, Mazmanian SK. The gut microbiota shapes intestinal immune responses during health and disease. *Nat Rev Immunol*. 2009;9:313-323.
- Bach JF. The effect of infections on susceptibility to autoimmune and allergic diseases. *N Engl J Med*. 2002;347:911-20.
- Pelucchi C, Galeone C, Bach JF, La Vecchia C, Chatenoud L. Pet exposure and risk of atopic dermatitis at the pediatric age: a metaanalysis of birth cohort studies. *J. Allergy Clin Immunol*. 2013;132(3):616622.e7.
- Stiemsma LT, Turvey SE. Asthma and the microbiome: defining the critical window in early life. *Allergy Asthma Clin Immunol*. 2017;13:3.
- Chieppa M, Rescigno M, Huang AY, Germain RN. Dynamic imaging of dendritic cell extension into the small bowel lumen in response to epithelial cell TLR engagement. *J Exp Med*. 2006;203(13):2841-52.
- Ignacio A, Morales CI, Camara NO, Almeida RR. Innate sensing of the gut microbiota: modulation of inflammatory and autoimmune diseases. *Front Immunol*. 2016;7:54.
- Round JL, Lee SM, Li J, Tran G, Jabri B, Chatila TA, et al. The Toll-like receptor pathway establishes commensal gut colonization. *Science*. 2011;332(6032):974-977.
- Hessle C, Hanson LA, Wold AE. Lactobacilli from human gastrointestinal mucosa are strong stimulators of IL-12 production. *Clinical and Experimental Immunology*. 1999;116(2):276-282.
- Herbst T, Sichelstiel A, Schar C, Yadava K, Burki K, Cahenzli J, et al. Dysregulation of allergic airway inflammation in the absence of microbial colonization. *Am J Respir Crit Care Med*. 2011;184(2):198-205.
- rompette A, Gollwitzer ES, Yadava K, Sichelstiel AK, Sprenger N, Ngombru C, et al. Gut microbiota metabolism of dietary fiber influences allergic airway disease and hematopoiesis. *Nat Med*. 2014;20(2):159-66.
- Schuijs MJ, Willart MA, Vergote K, Gras D, Deswarte K, Ege MJ, et al. Farm dust and endotoxin protect against allergy through A20 induction in lung epithelial cells. *Science*. 2015;349(6252):1106-10.
- Kumar H, Lund R, Laiho A, Lundelin K, Ley RE, Isolauri E, et al. Gut microbiota as an epigenetic regulator: pilot study based on wholegenome methylation analysis. *MBio*. 2014;5(6):e02113-4.
- Thorburn AN, McKenzie CL, Shen S, Stanley D, Macia L, Mason LJ, et al. Evidence that asthma is a developmental origin disease influenced by maternal diet and bacterial metabolites. *Nat Commun*. 2015; 6:7320.
- Turnbaugh PJ, Ley RE, Mahowald MA, Magrini V, Mardis ER, Gordon JI. An obesity-associated gut microbiome with increased capacity for energy harvest. *Nature*. 2006;444(7122):1027-1031.
- Bäckhed F, Ding H, Wang T, Hooper LV, Koh GY, Nagy A, et al. The gut microbiota as an environmental factor that regulates fat storage. *Proc Natl Acad Sci U S A*. 2004; 101:15718-23.
- Schwartz A, Taras D, Schäfer K, Beijer S, Boss NA, Donus C, Hardt PD. Microbiota and SCFA in lean and overweight healthy subjects. *Obesity (SilverSpring)* 2010;18:190-195.
- Bäckhed F, Manchester JK, Semenkovich CF, Gordon JI. Mechanisms underlying the resistance to diet-induced obesity in germ-free mice. *Proc Natl Acad Sci U S A*. 2007; 104:979-84.

## Keywords

Intestinal microbiota, microbioma, immune system, dysbiosis, obesity, allergies, Crohn's disease.