

27th to 29th June 2017

Ordem dos Medicos,
Porto, Portugal



Abstracts Book

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International Congress of Health Education and Research 2017

We are very pleased to announce the details of the International Congress of Health Education and Research. The Congress will take place in the magnificent grounds of Ordem dos Medicos in Porto, Portugal from **Tuesday 27th June 2017** to **Thursday 29th June 2017**. Hosted in collaboration with both the University of Porto and Ordem dos Medicos, the International Network for Health Workforce Education holds its International Congress once a year and is the prime meeting place for international health workforce educators, researchers and policy makers.

The event is specifically designed to meet the needs of all health workforce educators while also facilitating multi-disciplinary dialogue by bringing together multi-stakeholder attendees including educators, researchers and policy makers from across the globe. The Congress creates the perfect opportunity for active networking and knowledge sharing while also featuring a comprehensive and interactive program offering numerous presentations, technical sessions and workshops showcasing the latest innovations in health education.

Congress Theme: Future Education in Healthcare

During a time of great change for global healthcare systems the future education of healthcare professionals is key to ensuring long term sustainability for populations. The WHO, European Commission and OECD are among the international organisations that have called for global and national policies to educate flexible health professionals capable of dealing with the ever-changing healthcare environment. A multi-stakeholder and inter-professional approach to tackling this issue is paramount to ensuring this takes place. Educators must ensure that they employ the most effective teaching methods, researchers must identify the right skill combinations for future professionals, and policy makers must make effective changes to national and international planning and legislation.

The health workforce faces a number of complex challenges at local, national and global levels. At the global level, a key challenge is the increasing number of mobile healthcare workers who are challenging country-based health workforce education and planning. At a national scale, research projects have identified that education and training must adapt to the skill requirements needed to keep the health workforce compatible with policy plans. Therefore, at a local level, educators must assess their curricula, the approaches they take to teaching and the assessment methods that they implement. The health workforce education community is already attempting to address some of these challenges, for example by moving towards inter-professional teaching, competency based training programmes, and clinical reasoning education techniques, but there is still much work to be done.

The International Congress of Health Education and Research allows participants to discuss the diverse challenges of “Future Education in Healthcare” with international colleagues. The Congress welcome presentations adopting local, national and/or international perspectives on:

- Teaching/Training: pedagogy, assessment methods, curricula, innovation, technology
- Research: results from large-scale surveys, research projects, studies using innovative methods
- Policy: new policy initiatives, future policy directions being pursued by governments and private/non-governmental organisations.

Future Education Session: Medical Professions

This session offers three presentations on the future of education for medical professions. Topics range from using role models, to introducing interprofessional education techniques to a medical school and development programmes for medical students.

[2017111](#): Interprofessional education: what is the best time to introduce it in the medical school curriculum?

Dr. Valeriy Kozmenko, Director, Parry Center for Clinical Skills and Simulation, University of South Dakota, Sanford School of Medicine, United States

[2017117](#): Training of medical students in Medical University-Sofia in evidence based medicine

Dr. Nikolai Milenov Hristov, Assistant Professor, Medical University Sofia, Bulgaria

[2017143](#): From EpiVacPlus to EpiVac 2.0: one-of-a-kind Health Workforce Development Program

Dr. Alfred Da Silva, Executive Director, Agence de Médecine Préventive, France

Future Education Session: Policy and Practice 1

International and national policies are increasingly calling for the education of a flexible health professionals capable of dealing with the ever-changing healthcare environment. Putting these policies into practice can be challenging for all stakeholders involved. This session looks at implementing policy in practice and forms one part of two dedicated session on the topic.

[2017122](#): Hospital pharmacy residency- developing capacity and capability in the Australian pharmacy workforce

Mr. Cameron Phillips, Clinical Educator, Flinders Medical Centre, Flinders University, Australia

[2017144](#): The Bologna Process and the Nuclear Medicine Course

Prof. Luis F. Metello, Ass. Professor, ESS, Polytechnic Institute of Porto, Portugal

[2017151](#): Unpacking the intended and unintended policy consequences of “values-based” recruitment of student health care professionals: why, how and who it works for – a realist evaluation

Prof. Karen Spilsbury, Professor of Nursing, University of Leeds, United Kingdom

Panel Session: Boundary-crossing learning and educating in healthcare and welfare in the digital age

In the Netherlands, a dedicated Committee for Innovation Health Care Professions and Education has published an advice paper on boundary-crossing learning and educating in healthcare and welfare in the digital age. This session will share knowledge on the interactive and iterative development of the advices, results and recommendations within the international context.

[2017120](#): Boundary-crossing learning and educating in healthcare and welfare in the digital age

Dr. Katja van Vliet, Programme Manager, National Health Care Institute, the Netherlands

Dr. Astrid Chorus, Senior advisor, National Health Care Institute, the Netherlands

Dr. Hans C Ossebaard, Senior advisor, National Health Care Institute, the Netherlands

Future Education Session: Digitalization

The digital age is continuing to change society and the way healthcare is viewed by both patients and practitioners. This session takes three different health professions and assesses an aspect of digitalisation and how this affects education.

[2017137](#): Accelerating Digital - The Capability of a Workforce

Miss. Jess Radcliffe, Improvement and Programme Manager, NIHR Clinical Research Network, United Kingdom

[2017146](#): Nuclear Medicine Technologists' Education: the European Panorama

Prof. Luis F. Metello, Ass. Professor, ESS, Polytechnic Institute of Porto, Portugal

[2017154](#): Improving Medical Education through Infobutton Technology

Dr. Miguel Teixeira, Resident Physician, Mayo Clinic, United States

Panel Session: Impact of digitalization in health workforce: a challenge for Europe and Africa

The digital revolution is gradually transforming our society. What are the effects of digitalization and the “Internet of Things” in healthcare? Among researchers two ideas are both dominating and opposing each other. These arguments will be explored and analysed by several experts from Academia and from Health Professional Associations.

2017510: Impact of digitalization in health workforce: a challenge for Europe and Africa

Prof. Luis Velez Lapão, Population Health, Policies and Services Group Leader, Global Health and Tropical Medicine, Instituto de Higiene e Medicina Tropical, Universidade Nova de Lisboa, Portugal

Prof. Gilles Dussault, Professor, Instituto de Higiene e Medicina Tropical, Portugal

Future Education Session: Competencies

Competency based policy making is increasingly being used with the EU and beyond as a way of ensuring that each health system has the right mix of workforce to treat patients. Three presentations look at varying competencies and see how they have been implemented within differing EU countries.

[2017123](#): The challenges of dementia care in Baltic countries - education, learning and skills in practice. Preliminary results of the AppSam project

Dr. Adrianna Maura Nizinska, Senior Lecturer, Göteborgs Universitet, Sweden

[2017124](#): Tomfoolery or development of competencies? Re-working the concept of re-contextualisation

Dr. Sine Lehn-Christiansen, Associate Professor, Roskilde University, Denmark

[2017139](#): The importance of health communication for health care professionals - The H-COM project

Mrs. Pania Karnaki, Head of European projects, Prolepsis Institute, Greece

[2017147](#): The Need of Educational Models for Training Medical and Non-Medical Professionals on Patients' Right

Dr. Nikolai Milenov Hristov, Assistant Professor, Medical University Sofia, Bulgaria

Panel Session: Opening-up medical education through Palliative Care MOOC EU project addressing palliative care and the medical communication

Palliative care education requires a co-ordinated input from a highly-skilled and adequately resourced interdisciplinary and multi-professional team. The EU funded Palliative Care MOOC Project aimed to create open online courses with videos for palliative clinical field and multilingual medical communication.

2017507: Opening-up medical education through Palliative Care MOOC EU project addressing palliative care and the medical communication

Dr. Ovidiu Petris, Associate Professor, Consultant Internal Medicine, Specialist Pneumology, University of Medicine and Pharmacy Grigore T. Popa, Emergency Hospital of Iasi, Romania

Mrs. Daniela Drugus, Associate Professor, University of Medicine and Pharmacy Grigore T. Popa, Emergency Hospital of Iasi, Romania

Future Education Session: Gender

Health workforce education in the future must ensure that gender issues are addressed and tackled. It is important that policy, strategies and future changes to education are designed with gender inclusion in mind. Two presentations for this session and assess strategies to deal with gender inequality.

[2017119](#): Mind the gap: toward gender inclusion strategies in health workforce sustainability

Ms. Valia Kalaitzi, Managing Director/PhDc, Mendor Editions/Maastricht University, Greece

[2017153](#): A long and winding road: disregard, diversion, disappointment and delay in the development

Dr. Sharyn Maxwell, Director of Postgraduate Studies, School of Medicine, Pharmacy & Health, Durham University, United Kingdom

Workshop: The Interprofessional Education Game (iPEG)

This workshop explores the relevance of gaming in IPE curriculum design with the use of the Interprofessional Education Game (iPEG) as an activity aimed to achieve positive interprofessional learning outcomes for students. Participants will discuss the use of the game and its potential to be adapted in flexible and creative ways to assist educators in consider incorporating gaming within their own IPE programmes.

2017512: The Interprofessional Education Game (iPEG)

Prof. Lesley Diack, Professor of Transdisciplinary and Technology Enhanced Learning, Robert Gordon University, United Kingdom

Wednesday 28th June 2017, 13.30-15.00

Workshop: VOCAL-Medical Project

[2017138](#): VOCAL-Medical: On-Line Language Learning and Cultural Preparation for Emergency Services

Dr. Kristin Brogan, Lecturer, Institute of Technology, Tralee, Ireland

Ms. Helen Kelly, Lecturer in Communications/Programs Coordinator (Medical/Healthcare Sciences), The Royal College of Surgeons in Ireland, Ireland

Future Education Session: Policy and Practice 2

This session forms part two on the topic of putting policy into practice. International and national policies are increasingly calling for the education of a flexible health professionals capable of dealing with the ever-changing healthcare environment. Educators must be able to turn these policy decisions into programmes that work for the health workforce.

[2017145](#): Quality Certification in Higher Education – Implementation of the standard ISO 9001

Prof. Luis F. Metello, Ass. Professor, ESS, Polytechnic Institute of Porto, Portugal

[2017152](#): Creating a learning culture in the NHS

Miss. Emma Lowe, Learning Programme Manager, NIHR Clinical Research Network, United Kingdom

Workshop: Using teaching videos to complement flipped classroom method

[2017140](#): Using teaching videos to complement flipped classroom method

Mrs. Medie Jesena, Nurse Educator, University of Rwanda, Rwanda

Panel Session: The Role of Simulation in Health Professionals Education

Medical simulation provides students with the type of experiential learning every healthcare professional needs to learn but cannot always engage in during real-life patient care. Simulation is quickly becoming imperative to students learning. This panel session looks at a number of ways that simulation can be used to improve the training provided to health professionals.

2017511: The Role of Simulation in Health Professionals Education

Dr. Valeriy Kozmenko, Director, Parry Center for Clinical Skills and Simulation, University of South Dakota, Sanford School of Medicine, United States

Future Education Session: Mentorship & Learning

Mentorship for health professionals is a method used increasingly in rural and developing setting to ensure that health professional continue to receive an appropriate level of support through their training. Two presentations assess this topic in differing settings.

[2017136](#): Healthcare Professions Students Learning Experiences of a Rural Collaborative Engagement Platform, Faculty of Health Sciences, University of the Free State, South Africa

Prof. Annemarie Joubert, Associate Professor, University of the Free State, South Africa

[2017148](#): Unite to Heal: Inter-professional health professions education in the rural Free State, South Africa

Miss. Heidi Morgan, Community Based Education Coordinator, Allied Health, University of the Free State, South Africa

Future Education Session: Sexual Health

This session on Sexual Health and education argues that social psychological theories of identity should underpin healthcare education and training in order to promote a patient-centred approach to healthcare which acknowledges not only the multiple group memberships of the individual but also the total identity of the individual.

[2017132](#): Enhancing sexual health, self-identity and wellbeing among men who have sex with men (MSM): Insights

Prof. Rusi Jaspal, Professor in Psychology and Sexual Health, De Montfort University, United Kingdom

[2017133](#): Measuring quality of care: A patient satisfaction perspective

Mr. Christos Daramilas, Ph.D. Student, De Montfort University, United Kingdom

Panel Session: Privatization of medical education: trends and challenges

The panel will look at the global trend and the growth health professionals' education in the private sector, with special attention to the medical education. The panellists will also discuss the current global and national efforts on this issue, drawing lessons from the failure and success to understand the configuration and trends in medical education hoping that this analysis may contribute to a broader future research agenda.

2017504: Privatization of medical education: trends and challenges

Prof. Mario Dal Poz, Professor, Universidade do Estado do Rio de Janeiro, Brazil

Dr. Kate Tulenko, Vice President, Health Systems Innovation, IntraHealth, United States

Future Education Session: Migration

Migration of health professionals is currently high on the political agenda and is key to the future of sustainable health systems. Migration and education is an emerging topic area within this wider field and this session has two presentations looking at this topic in detail.

[2017131](#): Migration attitudes and factors that influence the intention for migration of students in medicine

Dr. Nikolai Milenov Hristov, Assistant Professor, Medical University Sofia, Bulgaria

[2017134](#): Undocumented Nurse refugees: Need for way forward

Dr. Maria Cassar, Senior Lecturer, University of Malta, Malta

Future Education Session: Simulation

Clinical simulation education is a bridge between classroom learning and real-life clinical experience. This session includes three ways that simulations can be used to enhance the training provided to health workforce professionals.

[2017109](#): Clinical Skills Validation Through Simulation to Improve Patient Safety

Dr. Valeriy Kozmenko, Director, Parry Center for Clinical Skills and Simulation, University of South Dakota, Sanford School of Medicine, United States

[2017128](#): Simulation-Based Interactive Problem Solving (SBIP): overcoming limitations of high-fidelity simulation

Dr. Valeriy Kozmenko, Director, Parry Center for Clinical Skills and Simulation, University of South Dakota, Sanford School of Medicine, United States

[2017135](#): I-SPAD Innovative- Simulation Pedagogy for Academic Development

Dr. Maria Cassar, Senior Lecturer, University of Malta, Malta

Future Education Session: Educational Methods

Ensuring education programmes have the correct curriculum and are delivered in a manner that suits the students is imperative to ensure the future development of health professionals. This session address education methods that can be delivered in many different settings.

[2017105](#): Can we predict an academic success of a paramedic student? – a retrospective, single-center study

Dr. Mariusz Panczyk, Assistant, Medical University of Warsaw, Poland

[2017107](#): Are QI methods useful in the design and delivery of a blended learning programme

Miss. Rita De Oliveira Araujo, Project Manager, CLAHRC NWL, United Kingdom

[2017108](#): Modification of the curriculum of the second-cycle public health study- analysis of student opinion

Prof. Joanna Gotlib, Dean, Medical University of Warsaw, Poland

[2017140](#): Using teaching videos to complement flipped classroom method

Mrs. Medie Jesena, Nurse Educator, University of Rwanda, Rwanda

2017105: Can we predict an academic success of a paramedic student? - a retrospective, single-center study

Dr. Mariusz Panczyk, Assistant Professor, Division of Teaching and Outcomes of Education, Faculty of Health Sciences, Medical University of Warsaw

Miss Ilona Cieślak, PhD Student, Division of Teaching and Outcomes of Education, Faculty of Health Sciences, Medical University of Warsaw

Mr. Aleksander Zarzeka, PhD Student, Division of Teaching and Outcomes of Education, Faculty of Health Sciences, Medical University of Warsaw

Dr. Piotr Leszczyński, Assistant Professor, Collegium Masoviense, College of Health Sciences

Prof. Joanna Gotlib, Assoc. Prof., Division of Teaching and Outcomes of Education, Faculty of Health Sciences, Medical University of Warsaw

Objectives

Assessment of correlations between the initial educational potential of students and their grade point average including admission criteria and selected demographic variables.

Method

The analysis involved a group of 143 students who graduated with a paramedic bachelor's degree at Warsaw Medical University between 2014-2016. Men as well as persons outside Warsaw constituted a majority of the study group (59.4% and 54.5%, respectively). As many as 60.8% of the students started the programme in the same year when they passed their secondary school final examination (matura exam). The correlations were assessed using a multiple regression model developed for purposes of the present study that included the following demographic predictors: gender, age, and place of residence. The regression model also included the initial educational potential of a student (a score obtained during the admission procedure with respect to three criteria: physical ability examination (running and swimming), results of matura exam in biology or mathematics and in foreign language). A grade point average obtained by a student for all courses that ended with an exam throughout the course of studies constituted a dependent variable in the present regression model. This variable was a criterion for academic success of a student. The STATISTICA program, version 12.5 (StatSoft®, Inc.) with an additional "Zestaw Plus" module (licensed to WMU) was used for calculations.

Results

The regression model was statistically significant ($F = 5.4849$; $P < 0.001$) and the functional form was correctly adjusted to the data (Ramsey RESET test; $F = 0.0811$; $P = 0.9222$). Only one demographic variable had a significant impact on the academic success of a student. Men obtained a significantly lower grade point average at the end of the course of studies compared to women ($\beta_{\text{stand.}} = -0.22$, $P = 0.01$). From among all admission criteria, scores for a foreign language ($\beta_{\text{stand.}} = 0.31$, $P = 0.001$) and for biology / mathematics ($\beta_{\text{stand.}} = 0.18$, $P = 0.02$) constituted important predictors of academic success. However, the very fact of choosing biology or mathematics by a student as an admission criterion was statistically insignificant for future grades ($P = 0.951$). In addition, it was observed that

the score for physical ability examination did not influence the grade point average obtained by a student during the course of studies ($P = 0.057$).

Conclusions

The present results confirmed the prognostic validity of the assessment of the initial educational potential of a student. It was also found that the assessment of a candidate performed by measuring initial competences in mathematics or biology was equally valid for both subjects. Despite the fact that the score for the physical ability examination was insignificant as far as academic success was concerned, this criterion may be important for diagnostic validity of the admission procedure for future medical rescue workers. In order to perform an analysis of the effectiveness of admission criteria in a long-term perspective it is necessary to continue the study that would also take into account careers of graduates in paramedic.

2017107: Are QI methods useful in the design and delivery of a blended learning programme

Miss Rita Araújo, Researcher, River Island Academic Centre, Northwick Park Hospital, London

Dr. Godwin Oligbu, Registrar, River Island Academic Centre, Northwick Park Hospital, London

Dr. Francesca Fran, Consultant, St. Mary Hospital, Imperial College London

Prof. Mitch Blair, Consultant, 1. River Island Academic Centre, Northwick Park Hospital, London 2. Department of Paediatrics, Imperial College London

Objectives

Background: Six conditions constitute 83% of ED attendances¹. Up to 40% of GPs have no formal paediatric training². There is minimal evidence that education is effective in changing physician behaviour or patient outcomes³. In response, the RCPCH developed⁴ e-learning sessions specifically for GPs on: fever, breathlessness, diarrhoea & vomiting and constipation. However, e-learning alone is not as effective as a blended learning approach⁴. QI methodologies have rarely been used to deliver such programmes.

Aims: Design and evaluate a blended learning educational intervention (e-learning component and a 3 hour face to face workshop) for GPs utilising QI methodologies.

Method

The use of Process Maps and Plan, Do, Study, Act (PDSA) cycles were used to inform and assess delivery. E-learning pre&post tests were done to assess knowledge attainment. Feedback was collected during and at the end of each face to face workshop and GPs invited to participate in a telephone interview 4-6 weeks later.

Results

163 attended the two workshops and 104 completed the feedback. Workshops were rated as "Very good" or "Excellent" by 84%; 74% of the attendees reported this was relevant to their current practice. 32 participants completed the e-learning (workshop1: 20%, workshop2: 32%). Average pre/post knowledge test: 6.1/10 and 9.5/10 respectively. E-learning content rated: 4.5 out of 5 (1 poor and 5 excellent). 11 GPs consented to be interviewed; 5 were interviewed 4-6 weeks post programme. All GPs reported that the programme has had an impact in their clinical practice e.g. "I have finally have got round to printing off the traffic light table (...) I can actually look up respiratory rates and heart rates, and that has made a difference, and I actually write them down more often". Process Mapping and PDSAs identified a number of themes; such as e-learning accessibility, standardised presentation content and interview recruitment (See Fig 1).

Conclusions

This study demonstrates that QI methods have been invaluable in design and delivery of an educational bundle. The RCPCH have used these findings to deliver a national launch including onsite e-learning completion and workshop in 2017.

2017108: Modification of the curriculum of the second-cycle public health study- analysis of student opinion

Dr. Joanna Gotlib, Associate Professor, Vice Dean for Public Health Division, Head of the Department of Teaching and Education Outcomes Faculty of Health Sciences, Medical University of Warsaw, Poland

Miss Ilona Cieślak, PhD Student, Department of Teaching and Education Outcomes, Faculty of Health Sciences, Medical University of Warsaw, Poland

Dr. Mariusz Panczyk, Department of Teaching and Education Outcomes, Faculty of Health Sciences, Medical University of Warsaw, Poland

Mr. Aleksander Zarzeka, PhD Student, Department of Teaching and Education Outcomes, Faculty of Health Sciences, Medical University of Warsaw, Poland

Objectives

Analysis of student opinions about modification of the curriculum of the second-cycle study programme (Master's degree) in Public Health at the Faculty of Health Sciences, Medical University of Warsaw, Poland.

Method

An anonymous questionnaire, five single- and multiple-choice questions and one open-ended question. 183 students of the Division of Public Health, Faculty of Health Sciences, Medical University of Warsaw, Poland. 155 women (85% of all) and 28 men (15% of all). Mean age: 22 years, SD: 1.604, median: 21; min. 18, max. 27, full-time students constituted 99% of all respondents. First-year students of the first-cycle study programme comprised the smallest subgroup (n=20, 11%), whereas third-year students of the first-cycle study programme made up for the largest subgroup.

(n=49, 27%).

Results

163 students (89%) would like to attend teaching courses they would be allowed to choose from a list of additional "elective courses." Nearly half of the study participants (n=87, 48%) would like the number of hours of these courses not to exceed 30 teaching hours (1 ECTS). The largest proportion of students (n=113, 62%) was interested in taking up the following specializations: Health Promotion as well as Clinical Trials and Health Technology Assessment. Management in Health Protection would be chosen by 108 students (59%), Administration in Health Protection - by 73 students (40%) and Prevention of Civilization Diseases - by 67 students (37%). Only approximately 30% of students were interested in the following specializations: Biostatistics and Epidemiology, Health Policy, Senior Policy, Public Health in Europe, Leadership in Public Health. 98 students (54%) wanted to participate in courses with English as the language of instruction.

Conclusions

Students of the Division of Public Health, Faculty of Health Sciences, Medical University of Warsaw were interested in the modification of the curriculum of the second-cycle study programme with reference to new specializations as well as individualisation and internationalisation of education.

Mrs. Lisa Lubbers, NNP, Department of Pediatrics, University of South Dakota School of Medicine

Dr. Stephen Messier, MD, Department of Pediatrics, University of South Dakota School of Medicine

Mrs. Laurie Hogden, MD, Department of Pediatrics, University of South Dakota School of Medicine

Mrs. Kerri Bjornson, NNP, Department of Pediatrics, University of South Dakota School of Medicine

Mrs. Laura Jarding, NNP, Department of Pediatrics, University of South Dakota School of Medicine

Objectives

The main focus of the modern healthcare is to provide a safe patient care which depends on the providers' competencies. To achieve this, various teaching modalities, based on the outcome-based educational model (OBE), are used. In the current study, we evaluated neonatal nurse practitioners' clinical performances using simulation. Correlations were examined between self-reported learner confidence and higher Kirkpatrick levels.

Method

Twenty-five neonatal nurse practitioners were scheduled to participate in a simulation session to validate their procedural clinical skills. The following skills were included: endotracheal intubation, laryngeal mask placement, umbilical artery cannulation, lumbar puncture, abdominal paracentesis, chest tube placement, intraosseous access, thoracentesis, defibrillation. Seventeen of them consented for using their performance data in this research. The skills performance has been evaluated three times: once during simulation, and two more times via video recording analysis. Prior to simulation, all neonatal nurse practitioners filled an anonymous 360 degrees survey in which they evaluated all nurse practitioners for competency in performing given procedural skills. We called the results of the assessment survey the "perceived competency," a surrogate substitute for a real-life competency measure.

Results

Collected data was analyzed with the use of SPSS statistical analysis package. To ensure validity, the procedural checklists were designed with the use of the national guidelines and reviewed by multiple experts in paediatrics, simulation, psychometrics and evaluation. The checklists in all ways appeared to be valid measures of the skills being measured.

Chronbach's alpha is often used to evaluate internal consistency of the instrument, how closely test items are interrelated and test the same concept (Mackay, 2004, Tavakov & Dennick, 2011). Its value depends on the number of items in the checklist and how they relate to each other: longer checklists with highly interrelated items result in higher Chronbach's alpha values (Tavakov & Dennick, 2011). For the instrument to be considered reliable, a minimum Chronbach's alpha value of 0.7 should be achieved, however values closer to 1.0 demonstrate more consistency within the tool. In our study a measure of reliability was completed between nine skills yielding Chronbach's alpha 0.577 which indicate good reliability. However, it was low enough to suggest that distinct skills were measured.

Each skill was graded once via direct observation during skills performance and two times by two different graders via video-based evaluation. There was comparison made between live grading and video-based grading.

The difference in total scores between live and video-based evaluations was within 0.5% and was not considered statistically significant (0.686 significance). Three skills such as endotracheal intubation, laryngeal mask placement, umbilical artery cannulation had video ratings slightly higher than in live observation. In remaining six skills, the live evaluation scores were slightly higher. Only one skill, abdominal paracentesis, showed significant difference between live and video-based evaluations (0.024 significance). Live rating of the abdominal paracentesis was significantly higher than video-based rating.

Each procedural skill was evaluated by three different evaluators: one performed a live and two other performed video-based evaluations. Interrater variability for each skill were examined and produced a range of 0.34% (LMA) and 4.9% (DEF) difference which is not considered statistically significant.

In order to underlying relationships among the different skills, we performed a factor analysis using principal component extraction with varimax rotation and Kaiser Normalization.

This is a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variable called components.

Four of the components yielded Eigenvalues above 1.00. The obtained results suggest that most of the examined skills share underlying relationships with other skills except intraosseous (the only component to load on component 3) and lumbar puncture which was alone in loading for component 4. These findings suggest validity in measurement of multiple underlying skills.

Conclusions

We have created and validated a Kirkpatrick level four tool for assessing neonatal nurse practitioner's procedural competencies. Data showed a lack of correlation between self-assessment of the competency to perform certain clinical skills, subjective peer-to-peer and objective simulation based skills evaluation. These findings emphasize the importance of performing objective structured clinical skills validation as a measure of the providers' clinical proficiency rather than relying on the results of self-reported confidence levels and training satisfaction. After finishing this study, to ensure patient safety the decision has been made to require all NNPs at Sanford Children's hospital to participate in annual simulation-based procedural skills evaluations.

2017111: Interprofessional education: what is the best time to introduce it in the medical school curriculum?

Miss Emma Bye, Medical Student, USD Sanford School of Medicine

Dr. Edward Simanton, Assistant Professor, University of Las Vegas Nevada

Dr. Jannet Lindemann, Dean of Student Education, USD Sanford School of Medicine

Objectives

Modern healthcare occurs in a dynamic and complex environment that requires providers to work together, collaborate, and quickly adapt to the continuously changing work environment. To prepare providers to meet these demands, practical healthcare and academia establish interprofessional education (IPE) opportunities for healthcare professions. Educational psychologists and philosophers who propose constructivism as a theory of learning argue that "each of us perceives the world through the prism of our own unique experience" (Jean Piaget, Lev Vygotsky, John Dewey, Jerome Bruner, John Locke) that determines how ready we are to accept or reject given concepts or constructs. This makes the appropriate timing to institute IPE in healthcare curricula very important. No current literature in the realm of IPE collaboration has determined an ideal time to introduce IPE into health education (Curran, et al, 2010.) In our project, we have assessed where in the curriculum medical students had the most positive attitude toward IPE and, more importantly, when they were ready to learn from other healthcare professions, and when they were ready to teach the other professions. In addition, we examined potential confounding factors such as behavioural traits, medical specialty of preference, prior academic degree or working experience in another healthcare profession, amount of clinical experience, and previous IPE exposure.

Method

Since none of the existing instruments were suitable to achieve this goal, we developed a 27-item Academic Interprofessional Education Attitude Scale (AIEPAS) survey instrument. This instrument has been piloted and validated at the University of South Dakota Sanford School of Medicine (USD SSOM.) At the time of the survey administration, there were 71 first year, 61 second year, 58 third year, and 65 fourth year students enrolled at USD SSOM. To enhance the response rate, the survey was administered in the last two weeks of November and first two weeks of December when students did not have major exams or clinical evaluations. One hundred thirty-five out of two hundred and fifty-four students replied (135/254, 53.14% response rate), and their profiles closely represented the entire medical school student body.

Results

This study found that medical students younger than 25 years, who were females, and were in the first or second year of medical school, had significantly more positive attitudes toward IPE. This discovery supported prior research findings conducted by other investigators (Pollard et al., 2004; Anderson & Thorpe, 2008). Among all medical specialties, primary care and family medicine in particular, along with the group of undecided specialty, demonstrated the highest Mean Attitude toward IPE scores. These findings agree with the previous studies that showed correlation between medical specialties and personality traits (Borges, 2001).

Conclusions

The University of South Dakota Sanford School of Medicine conducted a survey-based study to determine the best timing to institute interprofessional education in medical school curriculum. According to the obtained data, the majority of students responded that the first year of the medical school curriculum was the best time to initiate IPE.

While the entire attitude toward IPE was positive, female students were more enthusiastic about it than their male counterparts. Also, students younger than twenty-five years had higher attitudes toward IPE than their elder schoolmates. Since many healthcare accreditation agencies require students to be involved in the IPE activities throughout their educational curricula, this survey and its findings could be an indispensable tool in designing such a curricula (Dominguez, et al, 2014).

2017117: Training of medical students in Medical University-Sofia in evidence based medicine

Dr. Peshka Pesheva, associate professor, Medical University-Sofia

Dr. Nikolai Hristov, assistant professor, Medical University-Sofia

Dr. Vili Zahariev, associate professor, Medical University-Sofia

Mr. Todor Kundurdziev, assistant professor, Medical University-Sofia

Objectives

The Faculty of Medicine of Medical University-Sofia, has included the evidence based medicine key skills and competences in its catalogue of educational goals and expected competences upon graduation of students in medicine. We set to examine the actual state of education in evidence based medicine in the 6-year course in medicine.

Method

The aim of our study was to determine the competence level in evidence based medicine among 6-th year medical students. The study had a cross-sectional design and gathered information through direct individual anonymous inquiry. It was conducted among groups of 6-th year medical students during their internship in Social Medicine in the academic 2013/2014 year. Questionnaires were sent to all students with a refusal rate of 11%. The significance level was $\alpha \leq 0,05$, with a confidence interval of 95%. The questions that evaluated the training of students in evidence based medicine assessed its three cornerstones: formulation of structured clinical questions; database search; and critical appraisal of evidence.

Results

The results of the study demonstrated that medical students from the Medical Faculty - Sofia receive practically no education in evidence based medicine. There are a handful of students who retained the notion of evidence based medicine. This training was not performed in an independent course, instead being part of the courses in clinical pharmacology, social medicine, internal diseases, and cardiology.

Conclusions

It is apparent that at present the Faculty of Medicine of Medical University-Sofia is unable to meet its set educational goals in evidence based medicine. Changes in medical education are a must.

2017119: Mind the gap: toward gender inclusion strategies in health workforce sustainability

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Objectives

The aim of the study is twofold: first to address the knowledge gap on the nature and impact of identified barriers to women's medical, clinical and academic leadership (Kalaitzi & Czabanowska, 2016, The European Journal of Public Health, 26(suppl 1), ckw166-018) in healthcare governance on national and/or international level; second to update stakeholders about translational research findings and how they can be used in practice as a vital prerequisite to close the gender gap and strengthen continuing professional education and employment systems to attain health workforce sustainability.

Method

A mixed methods study has been followed per countries group. The first qualitative part consists of semi-structured interviews with healthcare leaders. The second part includes a quantitative part; an online questionnaire has been developed around the identified barriers and the interviews findings. The third part includes a qualitative comparative analysis compare the findings amongst researched countries.

Results

Preliminary results acknowledged an amount of inequality commonalities with some striking differences related to each barrier's impact recognizing gender discrimination and constraints in equalizing opportunities in education, recruitment, health workforce distribution and career advancement.

Conclusions

Gender equality in health workforce has to be addressed as a leadership and governance priority. Gender and health workforce systematic research agenda needs to be enhanced to develop strategies, policies and services on institutional, country and global level. All stakeholders, medical schools, professional associations, workers' unions, governments and NGOs, is required to cooperate to produce gender equality principles in order to develop optimum health workforce and sustainable health systems.

2017120: Boundary-crossing learning and educating in healthcare and welfare in the digital age

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Prof. Petrie Roodbol, Professor of Nursing Science, University Medical Centre Groningen, the Netherlands

Dr. Astrid Chorus, Senior advisor, National Health Care Institute, the Netherlands

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Short Paper

In November 2016, the Committee for Innovation Health Care Professions and Education presented its advice entitled: Boundary-crossing learning and educating in healthcare and welfare in the digital age, commissioned by the Dutch Minister of Health, Welfare and Sports. This advice followed the first advice: Moving towards new health care and health care professions: the contours (2015). The advices replied to the question of how, in the future, we can continue to offer high-quality care and support that is accessible and affordable for everyone.

The demand for health care is changing. We are becoming increasingly older and often have several chronic diseases. This is putting pressure on the quality, accessibility and affordability of health care. We increasingly want to take control of our own lives and can make use of all sorts of technological possibilities. These demographic, societal and technological developments challenge our current health care system in the Netherlands in terms of quality, workforce and costs.

The advices were based on a biopsychosocial perspective on health, a perspective that focuses on citizens' functioning and their ability to adapt and self-manage. This perspective on health, in combination with demographical and societal changes and technological developments, poses new demands on how professionals work and learn and need to be educated. Professionalism is increasingly characterised by cohesion between three main skills: expertise, the ability to collaborate and the ability to learn.

Both advices were developed in an intensive multi-stakeholder, inter-sectoral and inter-professional interaction, not only national but also regional in living labs, based on regional prognoses of the altered demand for care in 2030. In the presentation we will share our knowledge on the interactive and iterative development of the advices, results and recommendations within the international context.

2017122: Hospital pharmacy residency- developing capacity and capability in the Australian pharmacy workforce

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Mr. Andrew Matthews, General Manager, Workforce Transformation, The Society of Hospital Pharmacists of Australia

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Short Paper

In common with other healthcare professions, pharmacy faces important workforce demands if it is to continue to have the capacity and capability to respond to an ever-changing healthcare environment. Challenges of development, distribution and responsible use of medicines can only be met with an adaptable pharmacy workforce, that fully deploys its knowledge, skills and abilities in collaboration with other health stakeholders [1].

To respond to these challenges, The Society of Hospital Pharmacists of Australia (SHPA) has developed and implemented a structured, formalised, supported and accredited national residency program for early-career hospital pharmacists beginning in 2017. It is a two-year professional development program designed to support pharmacist practice towards competence and performance aligned with the Advanced Pharmacy Practice Framework [2] for Australia at Transition Level.

Internationally there are various models of foundation training for pharmacist professional development. In Portugal, a legally defined hospital pharmacy specialisation is offered over five years. However, in other countries such as the USA, UK, Canada and Singapore, hospital pharmacy residencies are an important component of the professional pathway. Until the introduction of the SHPA residency program a structured, experiential post-registration training program for pharmacists has not been available in Australia. This has potentially been a barrier to the development of pharmacists' scope of practice and to performing the expanded and advanced roles needed for contemporary healthcare.

Experiential learning with structured feedback is critical for newly registered professionals to consolidate their formal academic education and apply this knowledge in real and complex workplace settings. A residency program provides a framework for this training and is consistent with the International Pharmaceutical Federation's recently released Global Vision for Education and Workforce [1] and Goal 2 of its Pharmaceutical Workforce Development Goals [3] ('foundation training and early career development to progress the novice workforce towards advanced practice').

SHPA has developed robust accreditation standards by which hospital pharmacy residency programs are to be designed and structured. The SHPA Accreditation Standards for pharmacy residency programs cover four Domains:

1. Resident- Program relationship

2. Capacity and experience of department and staff
3. Range of pharmacy services and ability to deliver the residency curriculum
4. Commitment to professional development

The standards ensure that accredited sites are committed to SHPA's expectations for training pharmacists to deliver high quality patient-centred care and pharmacy services. Residents rotate through a diverse program curriculum, ensuring they gain the skills and knowledge necessary for competent general level pharmacists. Evaluation, feedback, and reflection are integral components of the program.

In preparation for the inaugural resident intake in 2017, hospital pharmacy departments were invited to apply for provisional accreditation as a residency program site against the program standards released by SHPA. 32 pharmacy departments servicing 54 hospitals sought provisional accreditation via the 45 question online survey. Initially 24 programs were granted provisional accreditation in November 2016. A number of hospital pharmacy programs were invited to submit additional information, which enabled a further six programs to be provisionally accredited in December 2016.

Therefore 30 hospital pharmacy sites will offer provisionally accredited hospital pharmacy residencies to more than 130 resident pharmacists in 2017. These include metropolitan, regional and rural hospital pharmacies, representing a range of pharmacy practice models. In order to attain full accreditation, programs must pass a site inspection and survey scheduled for late 2017.

For a maturing profession, there can be no better grounding for establishment and recognition of a pharmacist's critical role in the medicine management team than a formalised practitioner development process. A formalised practitioner development framework defines the pathway from undergraduate through to registration and progression to advanced practice (see Figure 1). Such pathways are well established in other health professions and in many other countries. The path for Australian pharmacy is now clear.

References:

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2017123: The challenges of dementia care in Baltic countries - education, learning and skills in practice. Preliminary results of the AppSam project

Dr. Adrianna Nizinska, Senior Lecturer, University of Gothenburg

Short Paper

This paper will outline the preliminary results of the international project AppSam. AppSam's aim is to promote innovation, learning and development of skills in the field of elderly care through the exchange of knowledge between countries with different welfare logics. Partner countries are Sweden, Denmark, Poland, Lithuania and Moldova. AppSam focuses on dementia care and applied digital technology; it departs from the Swedish-Danish CareSam INTERREG project (2011-13) which defined a number of areas, showing significant needs to achieve sustainable development: a) technological innovation in the field of elderly care, b) qualifying the future education and learning aiming at work in elderly care sector, and c) development of skills in practice with a special focus on dementia. AppSam is addressing this issues through the set of international and interdisciplinary workshops of mixed stakeholders, dedicated to understanding of technological innovation, education and dementia care. The nature of dementia as a condition, makes a strong case for integrated approach of multiple health care professionals, working in interdisciplinary teams and being supported by the technology. The needs for new model of education, however, has to be accompanied by institutional and organizational innovations of the health care systems, therefore policy issues have to be taken into accounts. Comparative perspective of different welfare systems and geographical disparity of the partners sets an interesting landscape of achievements, challenges and a future need for health workforce education in Baltic countries.

2017124: Tomfoolery or development of competencies? Re-working the concept of re-contextualisation

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Dr. Mari Holen, Associated Professor, Roskilde University

Objectives

To present empirically generated theoretical reflections on the concept of recontextualisation (Bernstein 2000, Guile 2014) as a mean to develop new and fruitful understandings of the development of clinical competencies in nursing students. By taking the example of learning activities related to patient's hygiene in a) bedside clinical practice and b) simulated learning, the paper aspires to break with dominant understandings of learning as either practice or theory-bound, a logic that also underpin several studies of simulated learning activities as a way to bridge these two profoundly different modes of learning (e. g. Hatlevik 2011, McGill et al 2014). The ambition of the paper is focus on the ontological aspect of learning, in order to give new insights into the processes of developing professional clinical competencies.

Method

This study form part of a longitudinal action-research inspired study entitled "CLIP - Constructing professional identities and comprehensive learning pathways in clinical practice". The study is longitudinal and qualitative and involves continuous interviews and ethnographic observation studies of a cohort consisting of 35 nurse students in the course of their nurse education (Sep. 2015- Feb. 2019). This paper is based on six qualitative focus group interviews perform with 25 students conducted in the beginning of the second year of study (Oct 2016) and a single interview with two clinical educators. Interviews were transcribed verbatim and an inductive approach was undertaken to the data analysis (Thomas 2006). Transcripts were read several times by both authors to ensure familiarity with the data and to establish analytical themes (Vaismoradi et al 2015). Coding was carried out using NVivo 10. A case concerning student's narratives of their first-time experience with patient's personal hygiene in clinical practice and their narrations of participating in a simulated learning activity with the same focus was chosen and subjected to a discourse inspired analysis (Keller 2005) in order to answer the following research question: What kind of clinical learning can be identified in each context and how are they related?

Results

The analysis showed that student's experiences were profoundly different in the clinical context and in the simulated learning context. But contrary to what one might have expected the experiences connected to the simulated education were not primarily associated with theoretical or technical issues related to personal hygiene. Instead experiences of overstepping of personal boundaries, feelings of indifference, but also narrations of humour and even team-building dominated the interviews. The last two-mentioned were seen, both by the students themselves but also by their clinical teachers, as a failed learning activity without any real or praiseworthy connection to professional development. However, our analyses establish an understanding of the simulated learning experience as a re-contextualisation of the clinical learning experiences that enables an (unrecognised) development of professional identities, as it provides the students with the option to

process the feelings of fear, overstepping of personal boundaries and emotionally overwhelming experiences connected to the clinical experiences that proceeded the simulated learning experience.

Conclusions

The paper offers a new understanding of clinical learning by evolving a theoretical perspective of re-contextualisation. The concept points attention to the complexity of clinical learning and the potentials of transgressing the wide-spread conceptualization of this as a “gap” between theory and practice. Re-contextualisation focuses the attention towards learning processes as un-linear, emotional bound and in the need of inter-personal working and reflection in order to develop clinical competencies and professional identity.

2017128: Simulation-Based Interactive Problem Solving (SBIP): overcoming limitations of high-fidelity simulation-based inquiry teaching method with the use of an innovative teaching concept

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Dr. Nathan Miller, Associate Professor, USD Sanford School of Medicine

Mr. Brian Wallenburg, Simulation Specialist, USD Sanford School of Medicine

Mr. Cole Boeve, Simulation Technologist, USD Sanford School of Medicine

Mr. James Kroon, Operations Assistant, USD Sanford School of Medicine

Objectives

During the last decade, high fidelity simulation (HFS) has become an indispensable tool for healthcare education. Among the other educational benefits, simulation has several distinctive features that include: interactivity, different patient outcomes based on the trainees' actions, engagement, and suspended disbelief and immersion. When used with the discovery teaching method, several assumptions are usually made: (1) learning how to apply existing knowledge will take place during training session, (2) participants have had a didactic teaching prior to simulation, (3) participants' group is reasonably small (3-4 people). This limits the use of HFS when the topic of training is complex and not mastered by the participants as well as when a large group of trainees needs to be educated. To overcome limitations and expand the HFS teaching potential, we have developed an innovative teaching method called Simulation-Based Interactive Problem Solving (SIBP).

Method

SIBP can be effectively used with large groups of trainees. We have successfully used SIBP with twelve to sixteen Internal Medicine and Family Medicine resident-physicians. As with developing any teaching course, educational needs (EN) of the target audience are first identified. Based on the EN, learning objectives (LO) are defined and an interactive clinical scenario developed.

When used with the inquiry method, developing a scenario requires identifying all possible actions that participants can take. This is very important because the instructor is usually out of the simulation room, the participants work on the case without any input from the instructor, and at each decision-making point the scenario would take a different course based on the actions taken by them (event-driven scenario).

In SIBP, a group of the participants and the instructor are usually present in the same simulation room. The instructor assigns one participant from the group to work the case. The participant assesses the "patient's" condition, interprets the findings to the group, and suggests/performs a treatment. Performing a treatment advances the scenario to the next decision-making point. At this point, the instructor can pause the session and facilitate a discussion to ensure that an appropriate clinical reasoning takes place. Thus, in SIBP debriefing occurs during the HFS session rather than after the session as it takes place with the inquiry method. If the inquiry method is used and participants lack knowledge pertinent to the case, taking an incorrect action during the scenario can unpredictably change its course and limit its teaching benefits.

In SIBP, an instructor can stop the scenario at the decision-making point and, through the facilitated discussion, guide the participants to the right direction. Combining HFS-based interactivity and

facilitated discussion ensures acquiring new knowledge as well as practicing its application at the same time. Also, facilitated discussion allows instructors to engage a larger group of participants than in inquiry-based teaching. At each decision-making point, the instructor assigns a new participant to lead the patient management.

Results

We have successfully used SIBP to educate 24 Internal Medicine and 32 Family Medicine resident-physicians to seven clinical scenarios. The participants were exposed to the clinically challenging situations that they have had only partial knowledge of how to manage. Simultaneous use of HFS and facilitated discussion allowed for improving their critical thinking and avoiding developing faulty cause-effect conclusions as it might happen during the teaching through the inquiry. As per participants' anecdotal reports, having peer and instructor support during the session reduced the training-associated anxiety. During each SIBP-based training, there were six times more participants educated than during an equivalent time in the inquiry-based training.

Conclusions

Teaching via inquiry and SIBP are useful simulation-based teaching methods. They both have their own advantages and disadvantages. SIBP is a method of choice when a large group of participants needs to be educated and the participants lack a significant portion of the knowledge pertinent to the case. In such a case, SIBP allows for knowledge and skills gain, higher participant satisfaction, and lower anxiety levels associated with training.

2017131: Migration attitudes and factors that influence the intention for migration of students in medicine

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Objectives

The global flow of medical students is mainly from poorer to richer countries and from less developed health education systems to those with better reputation for education, better working conditions, more modern medical technology and greater respect for doctors. These factors are highly interconnected.

The aim of the study was to explore the prevalence of medical students that intend to migrate to another country for specialisation or work and the factors that play role for taking this decision.

Method

This paper presents the results from a descriptive quantitative sociological study, carried out among students in medicine (3rd and 6th year of their education) in Medical University, Sofia, Bulgaria, between December 2012 and January 2015. The primary information was collected using a direct group self-administrated questioner with 21 opened and closed questions distributed to 581 medical students of which 388 (66,8% participation rate) responded.

Results

The results from Medical University Students Study show that 40% of medical students want to specialize abroad, primarily in Europe (35%). Europe in this context means the most developed EU member states. When asked about the longer-term career perspective 57% of medical students say they plan to stay in Bulgaria. The reasons for reluctance of medical students to work in Bulgaria are: low payment (in almost 80%), bad healthcare system and working conditions, bad attitudes towards healthcare workers.

Conclusions

Bulgarian Medical Universities train a growing number of foreigners; however, they are coming just to take an advantage of low prices for training at European level. After graduation, they are going to practice to destinations to which migrate also Bulgarian doctors – more developed EU countries.

It is proven that simply increasing the number of trainees in medical specialties leads only to an increase in migration flows or the number of passing to other professions. This does not mean that to the medical education should not be given special attention, on the contrary, but this should be done in line with the implementation of other policies to make pay and working conditions more favourable.

2017132: Enhancing sexual health, self-identity and wellbeing among men who have sex with men (MSM): Insights

Prof. Rusi Jaspal, Professor of Psychology & Sexual Health, Mary Seacole Research Centre, De Montfort University, Leicester

Objectives

There has been much recent research into the antecedents, correlates and consequences of sexual risk-taking behaviours among men who have sex with men (MSM). Some of this work has posited that poor mental health and low psychological wellbeing can underlie sexual risk-taking behaviours, which can lead to the incidence of sexually transmitted infections (STIs), including human immunodeficiency virus (HIV). There is some evidence that social psychological and behavioural interventions can be effective in promoting wellbeing and in reducing poor sexual health outcomes in MSM. Yet, there is little insight into the social and psychological interventions that practitioners (namely, medical professionals and therapists) can draw upon in their engagement with MSM who are at risk of STIs, including HIV. In much existing research, it has been found that poor self-image and internalised homophobia, due to social stigma and related factors, are likely to underpin decreased wellbeing among MSM. The principal aim of this talk is to contribute to healthcare training by equipping healthcare practitioners with knowledge of social psychological theories of identity that can underpin their practice and, thus, enhance health outcomes among patients and clients.

Method

Various empirical studies are drawn upon. First, results of a quantitative survey study of 529 MSM are presented. The data were analysed using multiple regression and ANOVA. Second, a qualitative interview study of 25 HIV-positive MSM and 28 HIV-negative MSM is presented. These data were analysed using qualitative thematic analysis. Third, a qualitative interview study of 30 healthcare practitioners, including HIV physicians, nurses and social workers is presented. The data were analysed using qualitative thematic analysis. The data analysis was guided by tenets of Identity Process Theory from social psychology.

Results

First, key aspects of identity, wellbeing and sexual health outcomes in MSM are outlined. Epidemiological data from Public Health England concerning STI and HIV incidence and social psychological research data concerning various social, psychological and health outcomes in MSM will be provided. There will be a brief discussion of emerging debates in relation to MSM's health, including 'chemsex', unprotected sexual relations, sex-seeking on geospatial social networking applications (e.g. Grindr) and in gay venues, and sexual compulsivity. This paper will also outline various socio-structural factors that can impinge on MSM's health, such as homophobia, stigma, and exclusion.

Second, in this paper, some of the existing research into identity and psychological wellbeing among MSM will be summarised, as well as the purported link between these psychosocial factors and sexual health outcomes. This paper will critically evaluate this work and carve out pathways for developing and implementing evidence-based interventions for enhancing identity, psychological wellbeing and sexual health in MSM.

Third, empirical data will be presented from various qualitative interview and quantitative survey studies using Identity Process Theory (Jaspal & Breakwell, 2014), a social psychological theory of identity construction, threat and coping. The theory posits that a positive identity should be underpinned by feelings of self-esteem, continuity, distinctiveness and self-efficacy, that challenges to these principles induce threats to identity, and that threatened individuals deploy a series of psychological, interpersonal and group-level strategies for coping with threat. Data will be presented to show that threats to identity due to social stigma, homophobia and other forms of exclusion can give rise to threatened identity, thereby inducing maladaptive coping strategies, including sexual risk-taking behaviours. The perceived challenges of working with MSM from the perspectives of healthcare professionals are presented. The data culminate in demonstrating the importance of incorporating tenets of Identity Process Theory into the delivery of healthcare.

Conclusions

The data demonstrate that Identity Process Theory, a complex, multi-level theory from academic social psychology, should be clearly outlined, elaborated and applied to the field of wellbeing and sexual health in MSM so that it can be drawn upon by practitioners in their professional engagements with MSM who are at risk of poor sexual health outcomes. Practical ways of integrating tenets of Identity Process Theory in interventions for enhancing wellbeing and for reducing sexual risk-taking and in therapeutic work with MSM will be outlined. More generally, it is argued that social psychological theories of identity should underpin healthcare education and training in order to promote a patient-centred approach to healthcare which acknowledges not only the multiple group memberships of the individual but also the total identity of the individual. An understanding of these issues is likely to be conducive to better healthcare and, thus, better health outcomes in patients.

Mr. Christos Daramilas, Ph.D. Student, De Montfort University, United Kingdom

Prof. Rusi Jaspal, Professor of Psychology & Sexual Health, Mary Seacole Research Centre, De Montfort University, Leicester

Objectives

Patient satisfaction, itself based on patient experience, can have a considerable impact on patient quality of care and its improvement. Patient satisfaction is a complex construct and it consists of various dimensions inter alia the patient's perception of physicians' clinical knowledge, accessibility of healthcare services, convenience of location, and continuity of care. Thus, operationalising this construct and measuring it is similarly complex and it can be challenging across different healthcare settings and social contexts characterised by diversity. The main purpose of this research is to elucidate the aspects of an adequate measure of patient satisfaction.

Method

A review of existing scales of patient satisfaction was conducted. More specifically, a sample of scales in the following healthcare contexts was critically evaluated: primary care; out-of-hours primary care; outpatient care; nursing care; chronic illness care; integrated elderly care; mental health care; psychiatric care; and general healthcare service. A range of healthcare settings was explored in order to provide a more holistic overview of patient satisfaction.

Results

Generic items are proposed that should form the backbone of a scale for measuring patient satisfaction across distinct healthcare sectors. Moreover, it is argued that an appropriate measure should be patient-focused and capture patients' perceptions and experiences of the care they receive; it should be culturally sensitive and consider cultural values; and it should encompass both the physical and psychological dimensions of healthcare.

Conclusions

Conclusions provide general recommendations regarding the characteristics or items that could form part of a measure of patient satisfaction in healthcare. A multi-faceted measure of patient satisfaction will be a pivotal tool for collecting data that are conducive to the improvement of patient quality of care. These recommendations are consistent with the patient-centred approach to healthcare in the UK National Health Service (NHS). However, it is likely that this approach will be of use to healthcare systems in other countries and contexts. Finally, recommendations for healthcare education and training are presented.

Dr. Maria Cassar, Senior Lecturer, University of Malta

Short Paper

Against the backdrop of global effort, attention and investment to policy pertaining to staff mobility, this paper seeks to highlight the realities arising around undocumented nurse refugees. Specifically, the paper explores initiative towards addressing the challenges experienced by undocumented nurse refugees, who claim to have trained and even worked as qualified nurses in their respective country of origin, prior to their mobility and the uptake of refugee migrant status in another land, but have no documentation to support such claims. Moreover, retrieval or reproduction of such documentation is absolutely impossible. From the standpoint of voluntary worker who seeks to support refugees in an EU member state, Malta, coupled with that of an experienced nurse educator, various policy directions for professional education, training and regulation are discussed, in an effort to determine opportunities and avenues towards the verification and recognition of the training of undocumented individuals accordingly. The paper draws upon the contention that such policy would, most importantly, address the rights and needs of respective undocumented health care professionals. In addition, policy development in this regard may enable host countries to tap into unused resources amongst refugees more efficiently and effectively, whilst safeguarding patient safety and interests. The challenges pertaining to nurse refugees are believed to be experienced by other health care professionals and thus the focus of this paper may be extrapolated across the interest of other health care professionals.

Dr. Roberta Sammut, Senior Lecturer, University of Malta

Dr. Maria Cassar, Senior Lecturer, University of Malta

Mr. Justin-Lee Mifsud, Assistant Lecturer, University of Malta

Short Paper

This paper reports an ongoing EU-funded multinational project which focuses on the use of simulation in nurse education. The project stands on three main contentions. These are:

(1) Simulation is a teaching method which allows health care student to develop competences whilst avoiding risks to patient safety. In addition, it allow competency to be achieved in patient scenarios which are not predictable, and for which, therefore, student learning and assessment cannot be planned; (2) The nature of the world in which students learn and practice today, is a digital one, and nurse education is to seek to address educational and training needs of students, using digital and technology-based resources accordingly; (3) Increased use of simulation pedagogy implies the training and education of educators . Educators must know how develop, and use simulation education resources.

Drawing upon the collaborative contribution of nurse educators from 10 partner education European organisations, spanning Italy, Norway, Ireland, England, Malta, Wales and Finland, the EU- funded project is seeking:

- (a) to develop and deliver a training programme in simulation education for nurse educations, leading to a Simulation in Nurse education (SINE) Champion Certificate Award, and
- (b) to develop a Nurse Education Universal Resource Simulation-kit (NURS-kit), comprising three simulation resources which may be used, universally, along pre-registration nurse education programmes.

A critical analysis of the strengths, weaknesses, opportunities and threats (SWOT analysis) of the development, design and roll out of the project are presented in this paper by the leading organisation of this project, that is, the University of Malta, in view of informing the audience about the project, and in an effort to share the experience with parties who may be interested in the similar initiatives in the field of simulation education. Against the backdrop of the increased use of simulation in education of other health care professionals, the relevance of this paper extends beyond the parameters of the nursing profession.

Project Reference No.: 2016-1-MT01-KA203-015210

2017136: Healthcare Professions Students Learning Experiences of a Rural Collaborative Engagement Platform, Faculty of Health Sciences, University of the Free State, South Africa

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Dr. Joleen Cairncross, Academic Coordinator: Support School of Medicine, University of Free State

Dr. Dirk Hagemester, Senior Lecturer/Head: Clinical Unit: Family Medicine, Department Health SA/University of Free State

Ms. Heidi Morgan, Junior Lecturer, University of Free State

Ms. Mimmie Wilmot, Junior Lecturer, University of Free State

Objectives

Introduction

Globally and particularly in developing countries there is a call for innovations in teaching and learning that challenge the boundaries of traditional teaching practices and the development of interprofessional graduate competencies. The Collaborative Engagement Platform (CEP) was established by the Faculty of Health Sciences (FHS) to facilitate an interprofessional curriculum aligned with the South African national vision to promote access to quality healthcare.

In this context a CEP refers to a rural learning and practice environment established by the FHS to create tailored interprofessional learning and collaborative practice opportunities for HPS. Interprofessional learning and collaboration involves complex, dynamic interactions between academic facilitators and students from occupational therapy, nutrition and dietetics, physiotherapy, nursing and medicine.

Fourth year HPS (N=324) followed a newly defined programme over a period of eighteen weeks, two teams per week. The programme was designed by a team of Interprofessional and Community Based Education experts. Key to the programme is the development of interprofessional competences through a variety of learning experiences. Students assess the healthcare needs of selected groups of high school learners and patients with diabetes mellitus supporting existing healthcare services. Learners and patients are involved in mutually negotiating goals and management plans, followed by relevant referrals to healthcare services. Guided daily reflections on learning experiences are an essential part of strengthening of interprofessional competencies. Summative assessment in the form of digital storytelling encapsulate the learning experiences and acquired competencies.

Problem statement: The commitment of the FHS to refine and define the programme is stated in an overarching Participatory Action Learning Action Research (PALAR) research proposal. The programme designers accountable for quality assurance, realised that the portrayal of students' learning experiences through digital storytelling was a valuable and untapped data source. A content or textual analysis of the digital stories ensued.

Purpose: The purpose of the study was to analyse HPS learning experiences of the collaborative engagement platform, as expressed through digital stories.

Research question: What are students' learning experiences of a collaborative engagement platform following a defined interprofessional programme?

Method

Research design: A qualitative content or textual analysis was selected for the study.

Research technique: Digital storytelling served as a technique for HPS to reflect on their collaborative engagement experiences. Digital storytelling is described as a narrative approach that facilitates adult learning. This narrative approach has been incorporated into a wide range of social, cultural, and educational efforts. Multimedia features such as images, video, text, and audio make digital storytelling relatively easy. HPS were requested to compile digital stories depicting their experiences, consisting of ten images and a five-minute narrative.

Unit of analysis: The unit of analysis consisted of digital stories developed by HPS. Purposive sampling was done of digital stories consisting of at least three professions.

Trustworthiness, data gathering and analysis: Credibility, transferability, dependability and confirmability were addressed. Student teams presented their digital stories to conclude their five-day collaborative engagement placement. Direct analysis of textual, graphic, and audio data were done through NVivo, a qualitative software package. Eight steps of content analysis were used.

Ethical considerations: The necessary institutional permission and ethical clearance to conduct research was obtained. Additional ethical measures adhered to were the ethical principles of beneficence, respect for human dignity and justice.

Significance of the study: The study findings contributed to better understanding students' experiences on a rural CEP, and supported the notion that the delivery of the defined interprofessional programme develop competencies and aligns with the national vision to promote general access to quality healthcare.

Results

Findings: Six categories emerging from the preliminary content analysis (step 3) were: Emotions, Compromises/character building, Competencies, Commitments, Contributions and Curriculum outcomes. Themes and statements supporting the categories will be included in the presentation of findings.

Conclusions

Considering the experiences of HPS reflected through digital storytelling, one could conclude that a rural CEP, as an innovative teaching strategy, challenge both personal and professional boundaries. Students' experiences shifted from statements that expressed uncertainty to acknowledgement of competencies acquired.

Ms. Jess Radcliffe, Programme Manager, Accelerating Digital, NIHR Clinical Research Network

Short Paper

From this submission, you will learn

- Our approach to co-creating a transformation programme, driven by Continuous Improvement principles
- Why we put our workforce at the heart of the solution
- How we successfully implemented an interconnected learning programme, to build digital skills across the organisation

Consider the wider context; we are living in the fourth industrial revolution, where digital tools and technologies are changing the way that people interact in and with the world every single day. Except your workplace doesn't reflect this. And if your workplace is in health care, it is even less likely to, as the necessary governance, regulation, and complexity has held this industry back in terms of digital development.

The National Institute of Health Research Clinical Research Network (NIHR CRN) is an organisation of qualified professionals in a workplace setting. Those in our Network are at the forefront of the National Health Service (NHS); trying things for the first time and paving the way for others.

So how do we enable our workforce to meet this challenge and the challenges in the future? We need to make best use of digital in its widest sense, being dynamic and agile in our approach. It is clear that we are no longer able to train a lot of people in one 'thing' anymore, but that we must co-create a new learning approach to support the development of new ways of working, sharing and improving.

In shaping this agenda, we are looking to those who know best; our workforce. There is a clear recognition of the need, and an enthusiasm to ensure we best meet the needs of our patients. However, collectively, there is an understanding that 'we don't know what we don't know' and that this needs to be a developmental journey and learning opportunity together.

To initiate this, it was clear that we needed to help people to begin thinking in a different way and to give them the confidence to get started on this development path. As part of this we have focused three elements of our Accelerating Digital Programme to take a three-pronged approach, aligning with our learning model;

1. Direct skills development

How we make best use of the tools available to us. An internal communications audit highlighted a need to enable our newly shaped workforce to make the most of the capabilities of a collaboration platform, which was introduced in 2014. In order to improve digital skills overall, and encourage better use of our collaborative platform across our whole network a learning programme was introduced, offering tailored one to one coaching for all staff, supported by a library of learning materials.

Through the successful implementation of 'Personal Trainers' across the central workforce, we have seen improved levels of confidence using the basic infrastructure of the platform, and dynamic

problem-solving behaviours, with staff feeling more able to seek out solutions - building their own knowledge through personal learning - and sharing with colleagues.

What have we learned; as staff become more confident in their abilities, their learning needs around digital change, rather than disappear. Our ongoing challenge will be how we evolve this initiative and support the growing culture of social collaboration.

2. Leading by example

The nature of our business (as a research organisation) is founded on evidence. This can result in hesitancy to try new things before there are demonstrable outcomes.

In order to challenge some of this (outside of where it is absolutely necessary) we have delivered an exemplar on how to recruit patients for appropriate studies using social media, utilising the continuous improvement principle of implementing, understanding, and improving.

This exemplar was underpinned by a series of blog posts which spoke honestly about the approach, the challenges, and the successes, with an aim to supporting our teams to reflect on how they might replicate these in their own work.

What have we learned; that someone always has to go first and show how it could be done. This exemplar wasn't the first to recruit to studies in this way, but the success in this approach came from the learning that was shared.

3. Enabling collaboration and social learning across geographical boundaries

The majority of our workforce are dispersed nationally, across England. It is clear that digital can be a significant enabler for these groups to work together in collaboration to a far greater extent, in new ways. Using three pilot groups we have sought to find solutions for areas that they feel they would like to work on more effectively together. These pilot teams are trying out digital tools and new ways of working to increase learning through collaboration and make communication more effective.

What have we learned; the concept of working as a team, across a large geography is not universally understood. Due to the way our organisation is structured, people often see themselves as teams within their own localities, rather than as learning communities on a broader scale. Before we can fully expect people to be working in new ways, we need to support them to recognise the benefits of social collaboration.

The Accelerating Digital Programme has just concluded the first of its three-year duration. Now we have begun to move to a more agile learning and collaborative culture, we can begin to focus on our wider capability, with a workforce that has gained greater confidence. This will be driven and shaped by the response from our workforce and their (expert) understanding on how we can best support our patients, and make use of partnerships across industry and beyond.

2017138: VOCAL-Medical: On-Line Language Learning and Cultural Preparation for Emergency Services

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Dr. Jef Adriaenssens, Researcher, Thomas More University College, Dept. of Nursing & Midwifery

Mrs. Helen Kelly, Lecturer, Royal College of Surgeons in Ireland

Objectives

This project is directed at professionals in the medical sector who need to communicate with patients who are non-nationals in emergency situations where good communication skills can literally mean the difference between life and death. It responds to a growing need in the medical sector to overcome the language and intercultural barriers which are occurring with ever greater frequency as a result of demographic changes and increased mobility.

The project provides language and culture training materials contextualised for the medical sector, through cooperation between educational institutions and professionals working in the field. Its target audiences are:

- in hospital emergency services
- ambulance services and fast rescue teams
- GPs on standby/call duty (especially in urban areas)
- hospital based doctors/specialists examining and diagnosing emergency patients.

Method

The VOCAL-Medical project (Vocationally Oriented Culture and Language – Medical) was a two-year Leonardo da Vinci Transfer of Innovation project, funded by the EU Commission, and part of the Lifelong Learning Programme. It followed on from two earlier EU projects, namely VOCAL (www.vocalproject.eu) and the award-winning Problem-SOLVE.

The VOCAL-Medical project partnership brought together 14 partner countries and 9 languages. This multilingual collaboration involved the designing of language and intercultural materials and the testing, piloting and reviewing of prototypes by professionals and patients in the emergency medical sector.

Results

The interactive on-line materials are bilingual (in the language of the nine partner countries and English). Learning styles and autonomous learning environments are considered in the design, and authentic situations incorporated. Linguistic and cultural preparation is achieved by means of virtual journeys through a variety of scenarios.

The end product is an on-line training tool for emergency staff who deal with patients who do not understand the local language. There is also an app for mobile phones (smart phones) and tablets (with HTML5 functionalities) which can be used by the consultant in an emergency medical situation to assess the medical history and current complaint of the patient.

Conclusions

The project contributes to bridging the gap between different healthcare systems and different cultural behaviours inherent in the doctor-patient relationship. This has benefits for healthcare systems, for the professionals who work in them and for patients. Better doctor-patient communication means better health care outcomes in terms of survival, patient satisfaction and patient safety.

2017139: The importance of health communication for health care professionals - The H-COM project

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Ms. Dina Zota, Head of National programs, Prolepsis Institute

Mrs. Nadia Dalma, Head of Qualitative Analysis, Prolepsis Institute

Ms. Paloma Ellis, Research assistant, Prolepsis Institute

Prof. Athena Linos, President, Prolepsis Institute

Objectives

The European co-funded Erasmus+ project HCOM aims to develop a comprehensive training curriculum which will be easily replicated across the EU. The aim of this training is to build and strengthen communication skills among health professionals, with a focus on medical doctors and nurses, which will positively influence their work with their patients and their co-workers within the health care setting. The H-COM Project aims, among others, to thoroughly analyze and present the situation concerning health communication in a comprehensive state-of-the-art report. We present the findings of focus groups conducted in the consortium countries and an in-depth literature review of the existing situation.

Method

The partner countries involved in the development of both the literature review and qualitative report included Greece, Cyprus, Spain, Germany, and Poland.

Literature Review: The literature review contained a general review of “state of the art” in health communication for health professionals, as well as individual country reports in which each partner country focused on depicting the current state of health communication training in their home countries. Partner countries also reported on countries with which they share a language. Partners reviewed published literature or national reports concerning the effect of communication on different situations in health care (e.g. Patient-doctor relationship, diagnosis, adherence to treatment); effect of health communication on attitudes and decision making concerning health issues; needs and limitations of doctor-patient communication; and burden to the health care system because of poor health communication. Literature sources included: published scientific articles, scientific or professional reports, books or book chapters, conference proceedings and book of abstracts theses, and other grey literature produced by credible sources. Proposed keywords for searches included health communication, health communication and physicians, doctor patient relationship, health communication training needs, barriers to health communication, though partners were allowed to expand upon these search terms should they be thematically germane.

Qualitative research: For the qualitative report, Prolepsis Institute developed the discussion guides in English as well as a focus group methodology (FDG) document with instructions on how to organize and recruit participants and conduct the FGDs. The guides and methodology document were translated to the native language of each partner country by the collaborating organizations. Participants gave written informed consent prior to the discussions and they also filled in a screening questionnaire. The duration of each FGD was 60-90 minutes. FGDs were recorded. Eligible participants included: (i) physicians, (ii) patients, and (iii) VET providers. Physicians and patients in each partner

country were recruited through snowball sampling. Each FCD had approximately 4-8 participants. Partner countries could also conduct FGDs with nurses; however, this was not compulsory.

Three discussion guides (DG) were developed: (i) physicians, (ii) patients, and (iii) VET providers by the coordinating organization (authors) based on research objectives. The following topic areas were covered in the DGs: (i) perceptions regarding patient- physician communication, (ii) triggers towards physician-patient communication, (iii) barriers towards physician-patient communication, and (iv) suggestions for the development of training on physician-patient communication. All questions were open-ended. A thematic analysis was used upon transcription for each individual country, and then ultimately compiled into a larger, over-all thematic analysis by the coordinating institution.

Results

Literature Review: Particularly in the past two decades, there is conclusive evidence that good communication between the medical provider and the patient has numerous beneficial health outcomes as well as foreseeable positive economic impact. Employing these aspects of health communication effectively has shown to reduce hospital readmissions, improve adherence and improve patient satisfaction. However, despite this evidence, the implementation of programs in supporting successful integration of communication techniques into medical practice remains far from optimal. Patient communication courses are not always compulsory in medical school curricula despite their benefit and additional training opportunities remain low in the EU. These are compounded by the increased need for cultural competency in a quickly diversifying European landscape, and a lacking sensitization toward the health literacy needs of the general population. While opportunities for health communication development are becoming increasingly recognized as important, the need for a larger systematic framework and toolkit with which to support educators, medical students, and medical professionals remains apparent.

Quantitative research: In total 15 FGDs were conducted with physicians, VET providers and patients in Cyprus, Greece, Spain, Poland and Germany. In Poland there were no FGDs conducted with patients and VET providers due to time constraints. In Spain and Poland 2 FGDs were also conducted with nurses. The total number of FGDs participants is n=120: 31 patients, 35 VET Providers, 38 Physicians, and 16 Nurses.

FGD participants from all target groups and partner countries widely agreed that health communication was a critical aspect of the medical encounter in order to ensure both comprehension and therapeutic success. There was also a general consensus that education—both during medical school and as continuing education—regarding this specific skillset can and should be improved in order to provide better medical services. Additional significant barriers included attitudinal (physician arrogance and patient ambivalence), emotional (physician's lack of empathy), linguistic (use of technical and inaccessible language) and systemic issues (time constraints and understaffing). Cultural differences were also noted as German participants were much more aware about the mutualistic nature of medical consultation than their Mediterranean counterparts, indicating the necessity for cultural tailoring of subsequently developed tools or trainings.

Conclusions

Results from both the literature review and the focus groups will guide the development of the H-COM training curriculum which will be piloted in Greece, Poland, Cyprus, Spain and Germany. The curriculum will emphasize needs and training gaps as identified through the focus groups and literature review.

Mrs. Medie Jesena, Nurse educator, University of Rwanda

Mr. Samuel Byiringiro, Tutorial Assistant, University of Rwanda

Short Paper

Rwanda is a country in linguistic transition from French to English, and many professionals in their mid-twenties and older struggle with English proficiency. This can pose a big challenge when teaching complex ideas to nurses in a master's program, especially wherein some students are mid-to late-career and do not recall some essential foundational concepts. Teaching videos are a part of the solution in bridging the language, technology and resource gap in this academic setting. In addition, videos demonstrating skills are very useful where facilities, trained personnel, and materials are sometimes unavailable to demonstrate essential skills repeatedly and correctly.

We used teaching videos, primarily from the internet, but also narrated presentations and video tutorials, with some translated in Kinyarwanda, to supplement class materials. Students previewed videos and read short articles prior to the class, with the expectation that they were ready to discuss concepts in a flipped classroom environment. We also taught students how to create these videos using various programs and methods, as some of them already teach undergraduate nursing students, and will be promoted to teaching at the master's level in the near future.

Most students were accustomed to rote memorization and the "banking" method of education; and some adapted well to the flipped classroom strategy, while a few others did not; but all students moved towards learning through clinical case discussions. Some students watched the videos after class which also reinforced their learning.

As a teaching tool, the videos have been critical in reviewing concepts from pharmacology and physiology that would have been extremely difficult to communicate given the level of English proficiency in some. Even students who spoke English well have commented that they remembered concepts better from Khan Academy or other animated videos than from words on a textbook. Our first experience with using teaching videos has shown mixed results. Some failures in adopting the method may have been due to students' barriers to access, e.g., lack of internet; students' study habits, i.e., not preparing before class; and lack of a formal platform to host the content, as we could not post YouTube videos without permission onto the university teaching portal. In the next iterations, we will produce more of our own demonstration videos, and formally request access to others that we may translate and post on the university's portal. The University of Rwanda aims to transition a large portion of its masters in nursing curriculum onto an e-learning platform, so the tools we have created have been and will be even more useful.

At the conference, we would like to offer a 2-hour workshop on creating teaching videos using MS PowerPoint, Camtasia, Prezi, and other free online programs that would be helpful to educators with limited face-to-face time with students or who want to employ flipped classroom methods in limited-resource settings. Participants would only require their laptops, which come with audio/video recording capabilities and MS office, and internet access. We have delivered this workshop to master's students, and it was very well received.

2017143: From EpiVacPlus to EpiVac 2.0: one-of-a-kind Health Workforce Development Program

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Prof. Marcel Drach, Associate Professor, Paris-Dauphine University

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Prof. Florence Arestoff-Izzo, Associate Professor, Paris-Dauphine University

Prof. Jean-François Gagne, Associate Professor, Paris-Dauphine University

Objectives

This paper analyses how and to what extent a rather successful Public Health and Management Program, implemented 10 years ago to develop the Health District Medical Officers (HDMOs or DMOs) skills, can be reshaped to take full advantage from the environment and from cutting-edge teaching methods and digital opportunities.

AMP (Agence de Médecine Préventive) is an NGO active since 1972 in helping countries to prevent and control epidemic diseases, endemic and vaccine-preventable diseases. Its repeated experience, particularly in Africa, has been to implement field-based assistance and actions with and for field medical actors, who are in direct contact with populations. To enable Health District Medical Officers (HDMO) in Africa to implement effective practices in vaccine and immunization services management, AMP decided in 2002 to partner with Paris-Dauphine University and other African Universities to deliver a specific one-year tailor made in-the-job Training Program in Public Health and Management combining residential courses with on-site learning and supportive supervision.

EpiVacPlus has been a success: e.g. geographical expansion, high number of trainees and international recognition (see the Results section for more details). But despite these achievements, EpiVacPlus' different active stakeholders have realized that this Program needs to be strongly redesigned to take cope with the new environment and challenges of Health workforce development in Africa. This ambition (EpiVac 2.0) is currently involving representatives from AMP, Paris Dauphine University and African Universities is in its design phase. The EpiVac 2.0's objectives are to significantly improve the added value from the different components of the Program and enhance its Results on the field for the DMOs.

Method

EpiVacPlus' learning method clearly emphasizes on-site learning. This on-site approach is possible through distant learning as the trainees continue their medical duties and through on-site supervision three times a year. This on-site approach follows one-month full time training with courses in vaccinology, Public Health Economics and management at Regional Institute of Public Health in Ouidah (Benin). The supervision mixes a blend of peer and expertise review and its design minimizes the disruption to the Medical Officers availability for their medical activities and at the same time favours an authentic, practical, field-rich approach.

EpiVac 2.0 diagnosis has been developed on two different components: a SWOT analysis to reposition the Program in its environment and a systematic revision of its teaching components according to Kirkpatrick's approach (Kirkpatrick, 1959) on teaching impact for trainees. A first SWOT analysis has

been conducted and is currently focusing on Opportunities and Threats. A significant Threat is a decrease in the program's Financial Resources. Strong opportunities have been identified with a geographic expansion on new countries and a sharp increase in Digital Learning to increase its input for trainees (ie MOOCs in vaccinology) and contain its costs. We think EpiVac 2.0 needs to grasp these Opportunities and defuse Threats. A revision of the different Program's components is being conducted, with current Learning Measurements of the Program being assessed: Comprehension (for the Initial Management courses in Ouidah and the following Distant Learning Phase), On-the-field operational implementation (for the Supervision) and the global Capitalization of experience and knowledge progression (for the Thesis at the end of the Program). We are launching an in-depth Study among Past Trainees (MDOs) to evaluate their perceived benefits and use from the different Program's teaching Components. This study combines quantitative questionnaire for the last three Cohorts of Trainees and in-depth interviews from past Trainees.

Results

EpiVacPlus current results can be divided in different categories:

- Improved vaccination coverage (The statistics collected from the different Medical Districts in the countries where EpiVacPlus has been implemented show very strong vaccination coverage improvement in the EpiVac Medical Districts (districts where the District Medical Officers have been EpiVac trained),
- Managerial efficiency at the Medical Districts among District Medical Officers,
- Vaccination research and Public Health management knowledge.

EpiVacPlus' results have been significant: from 6 countries that initially operated EpiVacPlus, 13 countries are now implementing the Program. Since 2002, 556 trainees have joined the Program and the EpiVacPlus Community of Practice is made of 320 Program's trainees. The vaccination coverage is significantly better in EpiVacPlus Districts than in non EpiVacPlus Districts. The Program has also received two international recognitions: in 2014 the Vaccine Innovation award from the Bill & Melinda Gates Foundation (BMGF) and in 2016 the Excellence in Practice silver medal from the European Foundation for Management Development (EFMD).

EpiVac 2.0 is a project in its early phase; it has thus no current results. Its expected result is a clear understanding for its stakeholders of our capacity to successfully redesign and implement a new Program while simultaneously increasing the value of the teaching for its trainees and managing its costs.

Conclusions

EpiVacPlus is an on-the-job professional training program to move forward capacity building in health system and immunization with significant accomplishments in African partner countries since 14 years. With EpiVac 2.0, AMP, Paris-Dauphine University and partner' African Universities want to sustain and scale-up this one-of-a-kind health workforce development program that improves the performance of immunization programs in African countries; strengthens the technical and managerial expertise of immunization program managers and improves professional practices; creates a critical mass of trainers to train other health workers close to communities in developing nation; enable vaccination program managers to reform the health systems in their countries; and stems the African public health "brain drain".

Dr. Lídia Cunha, Chief Technologist, Nuclear Medicine & Molecular Imaging Department, IsoPor-Azores

Short Paper

In the health field, providing a solid basic education should be always considered mandatory, being a critical condition to adequately promote and support continuing education that will always be the life learning process that characterizes a (good and responsible) health professional.

Allied health technologies in general and Nuclear Medicine in particular, are not exceptions, essentially due to its intrinsic dynamic nature and inherent technological complexity, but also to the fact that it uses equipment, techniques and methodologies that are always under evaluation, study and, consequently, in permanent evolution, in the quest for the “Holy Grail” of the ideal/maximal diagnostic and/or therapeutic value, obtained with a minimal irradiation and/or discomfort for the patient. For this same reason, continuing education across the entire professional career is consensually assumed as absolutely essential.

The so-called “Bologna Process” provided us – academicians and health professionals involved – a good opportunity to think about all the education process, its adaptation with the real nature of the competences needed and expected, as well as the possible best solutions to better correlate the education received and the “real world” needs, including its predictable evolution.

With this work we will try to share our experience considering the adaptation process of the Nuclear Medicine Course in the “Bologna Era”.

The crucial step of this Process has been the – real and effective - assumption of the student as the “corner stone”, aiming the acquisition of practical, easily verifiable predefined competences rather than just pure knowledge, and the use of PBL – Problem Based Learning methodology.

This work will focus the “before, during and after” of the entire Process, admitting that it is, by definition, a “permanently on-going Process”, as it is always under evaluation and close monitoring, since always seeking for continuously improving itself.

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Dr. Joana Lemos, Invited Lecturer, Nuclear Medicine Department (ESS.IPP), High Institute for Allied Health Technologies, Polytechnic Institute of Porto

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Short Paper

Quality Management in Higher Education is a rather complex and each day more challenging process. Nevertheless, it is believed to be the cornerstone for the development of modern Higher Education, thus playing an increasing role in the Society itself; the assumption of this might be the (so needed) turning point in the relationship between Academy and the “Real World”, helping to fill in the gap.

The circumstances (the adaptation of the Nuclear Medicine Course Curriculum to “Bologna Process” and the creation by the Portuguese government of the “Agency for Assessment and Accreditation of Higher Education - A3ES”) as well as the strategic decision to invest in International Projects, together created the right moment and opportunity to start the implementation of a Quality Certification Program in the Nuclear Medicine Course. The process started with a Technical Specification Certification, which encompasses four (unexpected) audits per year, in order to guaranty the continuous performance and the close monitoring of the quality system. This quality certification is totally centred into the “costumer” (in this case, the Student) and in the overall quality of the provided services.

The second step was the Certification according to one of the best-known quality standards: ISO 9001. This standard is concerned with continuous improvement, essentially through preventive action, always paying great attention to enhance costumer’s satisfaction and the strict compliance with all the related regulatory requirements. The Quality Management System implementation was only possible with fully commitment of all the parties involved, from the Institution direction board, the course coordination board, the teaching staff, as well as the administrative and auxiliary staff, and not less important, the students’ involvement. This system, based on processes impelled us to define a short number of processes (and quality performance indicators) and then to audit and control them in a regular basis. Three types of processes were defined, one linked to each other:

- 1 - Integrative Processes (Strategic Management);
- 2 - Operational Processes (Teaching Activity; R&D; Relationships with the Community; Course Curriculum Improvements);
- 3 - Supporting Processes (Quality; Resources; Common Services).

Overall, the Quality Management System implementation prompted us to define more clear and timely driven goals, improving its monitoring, thus allowing us to be aware, at any moment, how processes are evolving, if the requirements are being met and above all, allowing us to continually improve the Quality of the Services being provided to our stakeholders, creating the conditions for a good level of awareness, efficiency and capacity of reaction, namely regarding the identified strengths and weaknesses, but also to profit from the occurring opportunities and avoid eventual threats.

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Short Paper

Nuclear Medicine is an independent medical specialty for almost fifty years. This required proper education and training of highly specialized professionals (physicians, physicists, pharmacists, technologists) who are part of a multidisciplinary team. However, regarding technologists, the degree of specialization is highly heterogeneous over Europe. Since, in some countries, Nuclear Medicine is part of Medical Imaging area (including different specialties such as Radiology or Ultrasonography and, in a more restrict number of countries, even Radiotherapy), the “versatility” of technologists might be somehow appreciated by some of the parts involved. Nevertheless, there are critical issues that need to be addressed - like the ability to perform distinct practices at a certain level of autonomy and responsibility - and the final positions might be very distinct from country to country.

This work aims to compare data and experience related to Nuclear Medicine Technologists Education and Training in distinct European countries, evaluating its impact on the technical performance, aiming to promote critical thinking and discussion about this controversial topic.

Nuclear Medicine Education differs from country to country, varying from a strictly professional to a superior degree in the European Union, as well as between a multispecialty approach and a dedicated specialty approach. But even in the higher education arena, there is a huge difference in the number of contact hours regarding Nuclear Medicine topics: for example it could be so different as from a very short number of lectures plus 1 week internship (as some institutions in the UK), to 12 hours of theory plus 12 hours of practical classes (some institutions in Belgium) or 100 hours in total (Poland), all of them organized on a 3-years multispecialty courses, to a total of 3.300 hours (2.100 theoretical/practical + 1.200 internship) during a 4-years dedicated course (as it was until 2015 in Portugal).

Considering this, it is not surprising that what it is considered as “Basic Practice” in some countries becomes easily “Advanced Practice” in another, while in some post-graduation courses, the level might easily be inferior to some under-graduation courses from other countries, resulting that some graduates are more competent and performing better than some post-graduates. On the other hand, other specialties, like Radiology, are benefiting from a far much higher attention during education and training, making that health professionals, working in different specialties, theoretically (and legally!) equivalent are in fact very different.

2017147: The Need of Educational Models for Training Medical and Non-Medical Professionals on Patients' Right

Mrs. Kremena Lazarova, Assist. professor, Medical University, Sofia

Objectives

The specifics of the relationship doctor - patient require detailed discussion of all aspects of the protection of the rights of the patients. One of the most important conditions, directly related to the patient's right to receive quality, timely and adequate medical care, is the level of skills, knowledge and experience of doctors and medical personnel.

Aim: To investigate and analyse the attitudes of patients on key factors and incentives (including the need of education) for their rights when receiving medical services.

Method

We conducted a sociological survey in 2015 covering 829 patients and their relatives from all territory of Bulgaria. Information is collected and documented by an anonymous sociological questionnaire.

Results

The results show that more than half of respondents (447 or 58%) believe that if medical professionals undergo training module on patients' rights, will more strictly observe them and explain to the patients and only 11% believe that this is not so.

Conclusions

The results of the study show that is required specialized training of medical specialists in the field of human rights as a prerequisite to stimulate the observance of the rights of the patient in medical practice. In addition, the constantly ongoing reforms in our country and accompanying legislative changes require continuous updating of knowledge and continuous training.

In order to raise the awareness of patients and medical staff on continuously evolving process of definition of the rights and obligations of patients we offer some sample training modules:

Module 1: Human rights, health and morality. Societies in transition.

Module 2: Patients' rights - existing legislation. Legal principles and contemporary issues. Legal sources and regulated framework.

Module 3: Mediation in health care.

Module 4: Patients' rights in cross-border use of medical services.

2017148: Unite to Heal: Inter-professional health professions education in the rural Free State, South Africa

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Dr. Joleen Cairncross, Academic Coordinator: Support School of Medicine, University of the Free State

Dr. Dirk Hagemeister, Senior Lecturer/Head: Clinical Unit: Family Medicine, University of the Free State/Department of Health

Prof. Annemarie Joubert, Associate Professor, University of the Free State

Ms. Mimmie Wilmot, Facilitator/Junior Lecturer Occupational Therapy, University of the Free State

Objectives

As the 'core group' of coordinators, an occupational therapist, an educational nurse and a family physician were initially assigned the task of strengthening community based education in the Faculty of Health Sciences of the University of the Free State. The core group evolved as the initiative expanded to include a medical practitioner and a radiographer. Through a labyrinth of engagements with stakeholders such as the heads of the respective schools and of the departments within these schools, the service providers in health and education and their managers and community members, a training approach that is not only community based but also inter-professional and primary health care focused was created. A well-structured program of screening, treatment and health promotion activities in the rural communities was implemented, with the inter-professional teams of students having defined opportunities for experiential learning and also for reflective discussions on their roles and mutual interactions as future healthcare professionals. This collaborative engagement platform provides:

- a) an opportunity to implement and develop an inter-professional curriculum,
- b) a collaborative and supportive primary healthcare service to the community and
- c) an opportunity to develop a centre of excellence through research.

The research focuses on the design of the existing collaborative engagement initiative, aimed to develop key competencies across the inter-professional team as part of the individual healthcare programs clinical fieldwork modules. The purpose of this study is to detail first stage themes that have emerged from this innovatively designed and implemented healthcare professional initiative. In evaluating the design of the inter-professional teaching and learning opportunities for senior pre-graduate occupational therapy, physiotherapy, nutrition and dietetic, nursing and medical students' (N = 324), challenges and opportunities in the development and establishment of a shared curriculum are revealed.

Method

Through the use of semi-structured interviews with the program designers, facilitators and extracts from a reflective diary preliminary themes are described. The qualitative study is conducted by means of a thematic content analysis and forms part of an overarching participatory action learning action research, research proposal compiled to scientifically ground the development and implementation of the collaborative inter-professional initiative.

Results

The initial analysis provides evidence of key professional, cultural, logistical and institutional issues central to the design and implementation of an inter-professional curriculum. Inclusive design, ethical considerations and related alignment of learning experiences within a range of professions are essential and dynamic. Institutional history and traditional teaching practices in certain instances hinder and stall progress. Cultural sensitivity and inclusion necessitates diversity, empathy and collaboration amongst all stakeholders. The range of programs within the institution, in addition to student numbers creates logistical challenges requiring detailed organisation, implementation and complex cooperation.

Conclusions

The collaborative, rural community based inter-professional initiative provides an informed foundation for the design of a longitudinal collaborative inter-professional module amongst healthcare professions towards establishing an integrated healthcare curriculum approach, in the faculty of Health Sciences of the University of the Free State.

2017151: Unpacking the intended and unintended policy consequences of “values-based” recruitment of student health care professionals: why, how and who it works for - a realist evaluation

Prof. Carl Thompson, Professor of Applied Health Research, University of Leeds

Short Paper

The UK National Health Service (NHS) employs over a million people, the vast majority in front-line patient care. Publicly voiced concerns over failures in care and quality have linked the values held by staff to these failures. In response, UK hospitals and Universities have been exhorted to recruit students, trainees and employees with demonstrable values that are consistent with the values enshrined in the NHS Constitution: working together for patients; respect and dignity; commitment to quality of care; compassion; improving lives; and everyone counts. These written values clarify (i) what the public should expect of NHS staff and (ii) the values and behaviours expected of staff (at all levels) employed by the NHS when caring for the public. This policy is termed “values based recruitment” (VBR).

VBR assumes recruiting people for their values and behaviours, and maintaining and encouraging these in practice, will improve healthcare quality. Despite the policy compulsion to implement it, there is no robust evidence suggesting VBR will actually raise quality. The underpinning implicit logic model for exactly how VBR is supposed to work is poorly articulated and located in a myriad of opinion and think piece articles, editorials, and non-peer reviewed policy documents and grey literature. In the presentation and accompanying paper, we will outline whether the evidence for VBR merits the faith that policy makers have placed in it.

Ours is the first major study of VBR in the UK. We will share findings from our realist evaluation (2015-2017) including programme theory (generated from a policy document analysis, rapid realist review and interviews with policy ‘architects’ of VBR). Together this theory describes how VBR was intended to promote the acquisition and sustainable maintenance of desired values and behaviours among student healthcare professionals. We will report the testing and refining of this programme theory using mixed method (documentary and secondary data analysis and qualitative interviews) multi-level case studies with two major universities. We will outline the context, mechanisms and outcomes leading to both the intended consequences of VBR, as well as the policy’s unintended consequences. We will stimulate debate on the empirical and theoretical foundations for VBR, and its relevance for other health systems, and policy. The presentation will outline how and why the study of its implementation, costs and consequences is of critical importance for educators, policy makers, service providers, health care professionals and the public.

Miss Emma Lowe, Learning Programme Manager, NIHR Clinical Research Network

Short Paper

Healthcare is changing rapidly. With the growth of genomics, personalised medicine, robotics and nanotechnology, to name only a handful, the future of healthcare looks both exciting and increasingly different.

The NIHR Clinical Research Network (NIHR CRN) funds healthcare professionals and clinical support staff to deliver clinical research across the National Health Service (NHS) in England. Our people are often the first to implement new treatments, technologies and approaches in the NHS, embedding them into clinical care pathways for effective research delivery.

No organisation can anticipate every situation their workforce will face, and this is especially true for our workforce, but we can help people to learn continuously as part of their day to day work. The NIHR CRN approach to organisational learning is inspired by Jane Hart's Modern Workplace Learning (2015). In implementing Hart's approach, what we as educators do has changed significantly, moving away from a programme of training courses towards a range of personal and social learning opportunities which are embedded in day-to-day work:

- We are building a learning culture, where time for personal and social learning, as well as attendance at courses, is valued and enabled
- Our training courses focus on the foundations and principles for effective practice, and provide opportunities to test out new learning in safe environments
- We create spaces for social learning, online and in person, using events and ongoing training as opportunities for reflection and conversation
- We provide on-demand resources as short-cuts to rapidly address knowledge gaps, as an individual need them
- We are modelling these approaches in our own work, and supporting managers to implement them in their teams.

This is having a tangible impact on the ability of our workforce to adapt to the changing healthcare environment, and we are seeing measurable benefits as a result which are enabling us to remain competitive in an international research delivery market. However, we have also faced challenges in implementing our approach, with time, technology and a perceived lack of permission to participate being common issues. Our idea of what it means to be an educator in the modern workplace has been challenged, and our activities and skill-sets broadened as a result.

In this presentation, you will learn:

- How the NIHR CRN has created a learning culture in support of high quality clinical research delivery in the NHS in England
- The tangible impact our approach is having on our people's ability to adapt to the changing healthcare environment
- What we have learned about our role as educators

References: Hart, J. (2015) Modern Workplace Learning. United Kingdom: Centre for Learning & Performance Technologies

2017153: A long and winding road: disregard, diversion, disappointment and delay in the development of an online induction about gender and health

Dr. Sharyn Maxwell, DPGS, Durham University

Short Paper

Background:

In 2015, United Nations members agreed 17 sustainable development goals (SDGs) to guide global development over the 15 years to 2030. The SDGs are considered to be 'universal, inclusive and indivisible', they are intended to improve the lives of all people at all countries. The goals are interdependent - progress in achieving one goal depends on, and in turn influences, progress in other goals. For academics working in the education of health professionals the key goals for consideration are those relating to health, gender equality and education.

The means for achieving the goals is largely unspecified in the relevant UN Declaration apart from one named mechanism, gender mainstreaming. Community development and public and global health professionals know that achieving gender equality through gender mainstreaming is difficult; top-down policies to attain this are commonly subject to policy evaporation and diminished impact. Logic suggests that success may come by creating a generation of health professionals for whom action towards gender equality/equity is seen as integral to the work of health professionals. Such a groundswell of 'upward' pressure for change would complement and support top-down efforts in gender mainstreaming. This paper presents a personal perspective on one attempt to pursue this.

Rationale for the online module:

The origins of this module lay in contrasting student attitudes to, and experiences of, gender equality. On the one hand I was supporting some female students in dealing with the trauma of horrific events arising from gender inequality in their home countries. On the other hand, during a course review of an MSc in Public Policy and Global Health I was receiving feedback from several students (male and female) which amounted to complaints that they should have to address content around gender, sexuality and equality. As one student commented, "There are no public forums to discuss these issues at home so it's a waste of time to study these things". Shocked by this sentiment, I decided to become better informed and to use this knowledge to develop training that raised students' awareness, interest and basic skills in gender awareness and analysis and gender mainstreaming.

A limited evidence base:

The published literature to date providing evidence of the contribution (or not) that the training of health professionals makes towards the achievement of gender equality, especially in terms of imitation of knowledge, analytical competencies, and 'normalisation' and advocacy of gender equality is very limited. Discussions of pedagogy about gender mainstreaming in peer-reviewed publications focusing on the education of health disciplines and professionals is also very limited.

I wanted to understand what is happening in my own institution and what students who study with us think on these issues. Data collection took several forms: course surveys and reviews, student surveys, lunch time forums, staff interviews, follow-up of non-respondents to surveys. These were not ad hoc events: they were carefully designed and incorporated into a research project submitted to and approved by the School Research Ethics Committee. Some aspects of this, for example, staff

interviews were relatively straightforward. Most were not. Despite its stated policies the pressure and politics of other agendas within the University severely undermined support for the project. Issues within the student community simultaneously created disinterest and tension amongst the students about participating in the project.

Progressing to piloting:

Though limited, the responses from the data collection highlighted that my intended approach to the content of the module was too direct. Students do not want to engage about topic “which had been done to death in high school” or which seems to be “preachy”. They are interested in topics which contrast their own ability to express their gender/sexuality with constraints on this in other cultures. Once they begin exploring this, they become more open to thinking about health and social policies around gender equality and means for promoting this. The module has therefore taken a very different tack to what I had initially intended; it’s much more about who they are, exploring what they have experienced and how transferable their ability to “be themselves” may be between cultures and countries. It’s more subtle in advocating why they should pursue skills in gender awareness, analysis and mainstreaming.

The module is currently being piloted with staff and will soon be parted with students. The staff pilot is running into unexpected challenges. Though approval was obtained for the development of the module and support provided to pursue this from programme directors, new issues are being raised about the suitability of discussing these matters with students under the guise of ‘institutional duty of care’ and ‘professional standards’.

Lessons to date:

The various challenges in developing an evidence-base from which to develop a module of this type, even within one institution, are much more robust than had been anticipated. I’m no longer surprised that there is limited discussion of such projects in the academic literature. The delays in progressing this far were initially disappointing, however, I am encouraged that many academics and professional staff believe it is project worth pursuing. To paraphrase a saying, every long journey is comprised of many small steps.

Dr. Miguel Teixeira, Resident Physician, Mayo Clinic

Objectives

Clinicians routinely encounter multiple information-needs which if answered improve quality of care. Unfortunately, the majority of these needs are not met. Online health knowledge resources can help meet these information needs and are therefore being incorporated into continuous medical education programs. Infobuttons are versatile clinical decision tools embedded in the electronic health record that attempt to link clinical data with context sensitive knowledge resources. We believe Infobuttons are emerging as an important tool for point-of-care learning with the potential to improve continuing medical education. As much remains unknown about how to effectively use Infobuttons in education we sought to evaluate the educational value of Infobuttons through their impact on clinical practice, and then review technical approaches that lead to improved implementation and functionality.

Method

We conducted a systematic review using PRISMA statement methodology. MEDLINE, EMBASE, Cochrane Library database and others were searched from inception to March 1st, 2016. We included and catalogued all original medical education research using Infobuttons or other context-sensitive links. Outcomes of clinical usage or impact as well as comparative or descriptive studies looking at Infobutton design, implementation, use, and evaluation were abstracted in greater detail.

Results

Out of a total of 638 studies, 82 described Infobutton use. We found Infobutton-like technology is predominately used by three major academic centers in the US, but also internationally. Overall, the Infobutton had positive effects on perceived decision making, learning and workflow efficiency, but usage was noted to be low both in absolute terms (0.3 to 7.4 uses per month per potential user) as well as relative to static information links (proportionate usage 0.20–0.34). We found 12 studies evaluating specific technical approaches to improve design, successful implementation and functionality. These approaches include automated computer based algorithms in predicting clinician information needs as well as context sensitive topic organized links. Improvements noted in usability laboratory studies did not necessarily correlate with increased usage or improved satisfaction in clinical studies.

Conclusions

The Infobutton allows for enhanced point-of-care learning for physicians, other health professionals and patients. It seems to be an emerging tool in medical education with perceived positive outcomes. Key features of effective Infobutton implementation are usage of topic links, configuration of optimal resources for specific tasks, and improved index and content coverage through automated information seeking programs. Usability improvements did not always lead to improved usage and efficiency in clinical settings and overall usage remains low. More research is needed to determine how to best incorporate it into formal continuous medical education programs.

Table 1. The results of regression analysis (the dependent variable: a grade point average obtained by a student for all courses that ended with an exam throughout the course of studies).

Predictor	b	$\beta_{\text{stand.}}$	95% CI		t-statistic	P-value
Intercept	0.762	----	----		31.271	<0.0001
Gender 0 = Female 1 = Male	-0.020	-0.222	-0.386	-0.057	-2.663	0.0087
Age on entry 0 = 19 years 1 = more than 19 years	0.002	0.022	-0.134	0.178	0.275	0.7835
Place of residence 0 = other 1 = Warsaw	0.000	-0.001	-0.159	0.157	-0.018	0.9854
Physical ability examination (running and swimming)	0.000	0.154	-0.004	0.313	1.924	0.0565
Results of matura exam in biology or maths	0.001	0.310	0.149	0.471	3.817	0.0002
Results of matura exam in foreign language	0.001	0.184	0.029	0.339	2.345	0.0205
Matura exam 0 = biology 1 = maths	0.004	0.043	-0.115	0.201	0.538	0.5914

b – regression coefficient

β – standardized regression coefficient

95% CI – 95% confidence interval for β

60

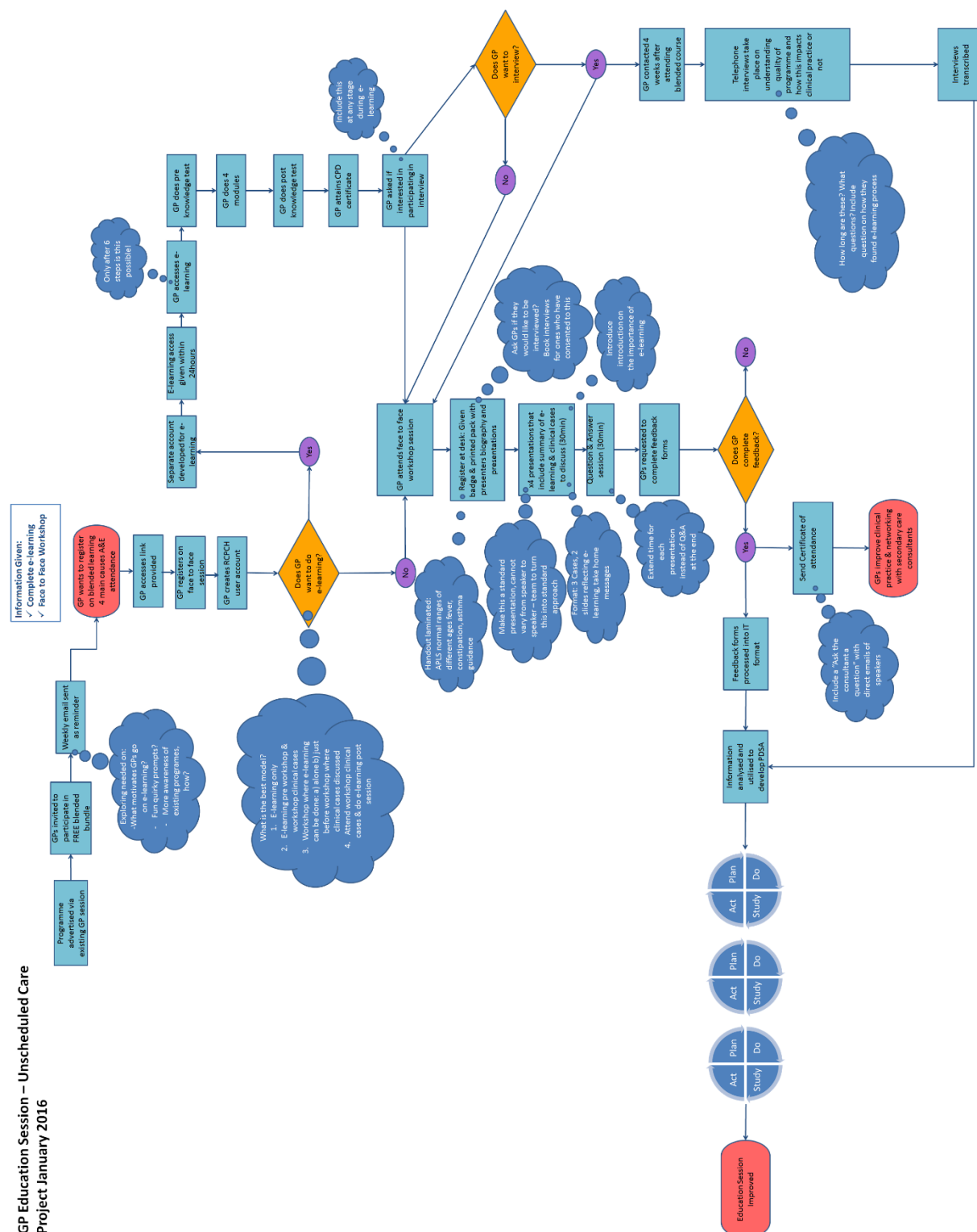


Table 1 Comparison between live and video-based grading

Case/ Variable	Format	N	Mean	SD		Sum of Squares	df	Mean Square	F	Sig.
EI_SCORE_PERCENT	Live	17	92.8824	5.65555	Between Groups	40.554	1	40.554	1.803	.186
	Video	29	94.8276	4.13235	Within Groups	989.903	44	22.498		
	Total	46	94.1087	4.78529	Total	1030.457	45			
LMA_SCORE_PERCENT	Live	17	84.0000	11.42913	Between Groups	94.252	1	94.252	.815	.372
	Video	29	86.9655	10.34920	Within Groups	5088.966	44	115.658		
	Total	46	85.8696	10.73232	Total	5183.217	45			
UAC_SCORE_PERCENT	Live	17	95.4118	6.14470	Between Groups	28.221	1	28.221	.972	.329
	Video	29	97.0345	4.90250	Within Groups	1277.083	44	29.025		
	Total	46	96.4348	5.38579	Total	1305.304	45			
LP_SCORE_PERCENT	Live	17	100.0000	0.00000	Between Groups	12.247	1	12.247	1.685	.201
	Video	29	98.9310	3.37989	Within Groups	319.862	44	7.270		
	Total	46	99.3261	2.71665	Total	332.109	45			
AP_SCORE_PERCENT	Live	17	97.4118	3.98527	Between Groups	98.555	1	98.555	5.483	.024
	Video	29	94.3793	4.37863	Within Groups	790.945	44	17.976		
	Total	46	95.5000	4.44597	Total	889.500	45			
CT_SCORE_PERCENT	Live	17	98.1176	3.03896	Between Groups	4.425	1	4.425	.504	.482
	Video	26	97.4615	2.91521	Within Groups	360.226	41	8.786		
	Total	43	97.7209	2.94655	Total	364.651	42			
IO_SCORE_PERCENT	Live	17	95.7059	5.83914	Between Groups	94.667	1	94.667	1.624	.209
	Video	28	92.7143	8.52385	Within Groups	2507.244	43	58.308		
	Total	45	93.8444	7.68989	Total	2601.911	44			
NA_SCORE_PERCENT	Live	17	97.0588	3.71602	Between Groups	6.570	1	6.570	.392	.534
	Video	29	96.2759	4.29199	Within Groups	736.734	44	16.744		
	Total	46	96.5652	4.06422	Total	743.304	45			
DEF_SCORE_PERCENT	Live	17	83.5882	12.08335	Between Groups	16.570	1	16.570	.111	.741
	Video	29	82.3448	12.31224	Within Groups	6580.669	44	149.561		
	Total	46	82.8043	12.10807	Total	6597.239	45			
Total	Live	17	93.3897	3.11902	Between Groups	1.743	1	1.743	.166	.686
	Video	29	92.9865	3.30525	Within Groups	461.543	44	10.490		
	Total	46	93.1355	3.20862	Total	463.286	45			

To ensure validity, the procedural checklists were designed with the use of the national guidelines and reviewed by multiple experts in pediatrics, simulation, psychometrics and evaluation. The checklists in all ways appeared to be valid measures of the skills being measured.

Chronbach's alpha is often used to evaluate internal consistency of the instrument, how closely test items are interrelated and test the same concept (Mackay, 2004, Tavakov & Dennick, 2011). Its value

depends on the number of items in the checklist and how they relate to each other: longer checklists with highly interrelated items result in higher Chronbach's alpha values (Tavakov & Dennick, 2011). For the instrument to be considered reliable, a minimum Chronbach's alpha value of 0.7 should be achieved, however values closer to 1.0 demonstrate more consistency within the tool. In our study a measure of reliability was completed between nine skills yielding Chronbach's alpha 0.577 which indicate good reliability. However, it was low enough to suggest that distinct skills were measured.

Each skill was graded once via direct observation during skills performance and two times by two different graders via video-based evaluation. There was comparison made between live grading and video-based grading.

Table 2 Comparison between live and video-based grading

EI – endotracheal intubation, LMA – laryngeal mask placement, UAC – umbilical artery cannulation, LP – lumbar puncture, AP – abdominal paracentesis, CT – chest tube placement, IO – intraosseous access, NA – needle aspiration, DEF – defibrillation.

The difference in total scores between live and video-based evaluations was within 0.5% and was not considered statistically significant (0.686 significance). Three skills such as endotracheal intubation, laryngeal mask placement, umbilical artery cannulation had video ratings slightly higher than in live observation. In remaining six skills, the live evaluation scores were slightly higher. Only one skill, abdominal paracentesis, showed significant difference between live and video-based evaluations (0.024 significance). Live rating of the abdominal paracentesis was significantly higher than video-based rating.

Each procedural skill was evaluated by three different evaluators: one performed a live and two other performed video-based evaluations. Interrater variability for each skills were examined and produced a range of 0.34% (LMA) and 4.9% (DEF) difference which is not considered statistically significant.

In order to underlying relationships among the different skills, we performed a factor analysis using principal component extraction with varimax rotation and Kaiser Normalization.

This is a statistical procedure that uses an orthogonal transformation to convert a set of observations of possibly correlated variables into a set of values of linearly uncorrelated variable called components.

Table 3 Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loading			Rotation		
	Total	POV	CP	Total	POV	CP	Total	POV	CP
1	2.203	24.484	24.481	2.203	24.481	24.481	1.929	21.435	21.435
2	1.805	20.056	44.538	1.805	20.056	44.538	1.829	20.322	41.756
3	1.260	14.006	58.543	1.260	14.006	58.543	1.356	15.068	56.824
4	1.028	11.427	69.970	1.028	11.427	69.970	1.183	13.146	69.970
5	0.746	8.292	78.262						
6	0.664	7.375	85.637						
7	0.575	6.392	98.029						
8	0.431	4.793	96.822						
9	0.286	3.178	100.000						

POV – percent of variance; CP – cumulative percent.

Table 4 Rotated Component Matrix

Skill	Component			
	1	2	3	4
EI_SCORE_PERCENT	0.227	0.757	0.303	0.126
LMA_SCORE_PERCENT	0.719	0.147	-0.240	-0.287
UAC_SCORE_PERCENT	0.428	0.530	-0.014	-0.500
LP_SCORE_PERCENT	0.043	0.326	-0.016	0.819
AP_SCORE_PERCENT	0.565	-0.568	0.228	-0.017
CT_SCORE_PERCENT	0.211	0.056	-0.820	0.182
IO_SCORE_PERCENT	0.199	0.287	0.691	0.254
NA_SCORE_PERCENT	-0.043	0.662	0.022	0.174
DEF_SCORE_PERCENT	0.878	0.034	0.056	0.189

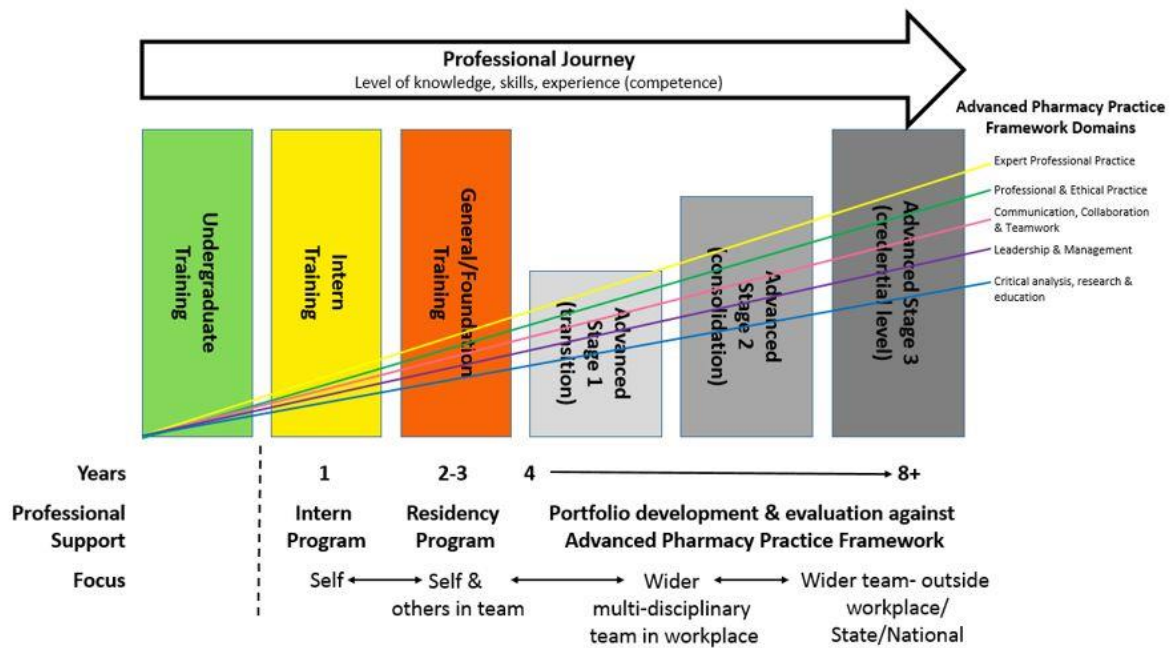
Extraction method: Principal Component Analysis

Rotation Method: Varimax with Kaiser Normalization

Four of the components yielded Eigenvalues above 1.00 and the load values for those components are shown in Table 3. The obtained results suggest that most of the examined skills share underlying relationships with other skills except intraosseous (the only component to load on component 3) and lumbar puncture which was alone in loading for component 4. These findings suggest validity in measurement of multiple underlying skills.

EI – endotracheal intubation, LMA – laryngeal mask placement, UAC – umbilical artery cannulation, LP – lumbar puncture, AP – abdominal paracentesis, CT – chest tube placement, IO – intraosseous access, NA – needle aspiration, DEF – defibrillation.

Figure 1: SHPA practitioner development pathway linking foundation practice and advanced practice.



Modern Workplace Learning is more than Training

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