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AVOIDING RESEARCH WASTE THROUGH EVIDENCE-BASED RESEARCH

Interview with: Prof. HANS LUND

Professor at the Centre for Evidence-Based Practice, Western Norway University of Applied Sciences;
Chairman of The Evidence - Based Research Network;
Chair of the EVBRES – COST ACTION 17117 - Towards an International Network for Evidence-based Research in Clinical Health Research.

EDUCATION
1997 -PhD, Faculty of Health, University of Copenhagen, Denmark
1982 -Physiotherapist, Skodsborg, Denmark

CURRENT AND PREVIOUS POSITIONS
2017 - (cont): Professor, Centre for Evidence-Based Practice, Faculty of Health and Social Science, Western Norway University of Applied Sciences (HVL), Bergen, Norway
2007 - 2017: Associated Professor and Director of Studies, Research Unit for Musculoskeletal Function and Physiotherapy, Department of Sports Science and Clinical Biomechanics, University of Southern Denmark
1998 - 2007: Clinical Researcher, Rheumatologically Research Centre: "The Parker Institute", Frederiksberg Hospital, Denmark
1997 - 1998 -Lecturer, Skodsborg School of Physiotherapy, Denmark
1993 - 1996: PhD-student, Herlev Sygehus, Københavns Amt, Danmark
1990 - 1992: Clinical teacher in Physiotherapy, Skodsborg School of Physiotherapy, Denmark
1983 - 1989: Superintend physiotherapist, Rehabilitation Centre for Elderly, Frederiksberg Kommune, Denmark

AWARDS
Clinical Physiology and Nuclear Medicine lecture award (Klinisk Fysiologisk/Nuklearmedicinsk foredragspris (second place), and the award from the audience. Best poster at Danish Society for Sports Medicine, Best poster at Scandinavian Congress of Sports Medicine. The Distinctive award from the Danish Association of Physiotherapy with the following arguments: ”HL has deserved this award for his priceless and very important work for education of Physiotherapists. HL has contributed an extraordinary effort in the promotion of evidence-based practice”

PROFESSIONAL ASSIGNMENTS
Cofounder of "Danish Physiotherapists subject field within geriatric physiotherapy”, Editor of the magazine for "Danish Physiotherapists subject field within geriatric physiotherapy”, Associated editor of "Danske Fysioterapeuter”, Editor-in-chief of a magazine for physiotherapy-patient “Krop og Fysik – fysioterapeuternes temablad”

SCIENTIFIC ASSIGNMENTS
Member of the Research committee within Danske Fysioterapeuter, Member of the Research Foundation within Danske Fysioterapeuter, Originator and member of “The Nordic Network for Research Education in Physiotherapy”, Originator and co-editor-in-chief of "Nyt Om Forskning", the sientific journal within Danske Fysioterapeuter, Originator and chairman of “The Danish Society for Research in Physiotherapy”, Organizer of "The first Nordic Summerschool in Physiotherapy - Research Methods in Biomechanics", Member of the Editorial Advisory Board of “Nordisk Fysioterapi”, Organizer of ”The third Nordic Summerschool in Physiotherapy - Research Methods in Biomechanics”. Member of the Research committee within ”Rehabilitation and Research Centre for Torture Victims”, Associate editor “European Journal of Physiotherapy”, Member of the Research Foundation within Danske Fysioterapeuter. Member of the Board for Rehabilitation International – Denmark, and recently part of different accreditation boards in both Denmark and Sweden. Member of different editorial boards for national clinical guidelines in Denmark, Sweden and Europe.

PUBLICATIONS
76 peer peer-reviewed papers, H-index 29, 4 382 citations, i10 index 51

In addition,
Hans Lund has written a number of popular scientific papers for physical therapists, nurses and occupational therapists and has been supervisor and examiner for more than 70 PT bachelor projects, and master students, referee for several international scientific journals. Hans Lund has been examiner and opponent of 3 Professor reviews, 22 PhD projects, 9 PhD project applications, 12 Associated Professor applications, 42 Master projects, and 55 Bachelor project. Hans Lund had held more than 100 lectures both national and international. Hans Lund has written and co-edited textbooks for physical therapists (Textbook in Rheumatology, Basic Statistics, How to write a Case Report, Exercise in prevention, treatment and rehabilitation, Challenges for Rehabilitation in Denmark, Handbook for Literature Search and Critical Appraisal, and The foundations of Rehabilitation).

***REPORTER**: Prof. Hans Lund, you have been involved with Evidence-Based Practice for many years and more recently you have become a proponent and strong supporter of Evidence Based Research (EBR) as a way to reduce the research waste. As you have been involved in promoting EBR from its early days, could you say a few words about why research waste is a very important topic and also give us a brief overview of how the idea of EBR developed?*

- What is research waste and what causes it, in a few words?

HANS LUND: Research waste is a broad term. It covers all situations where the research being conducted and/or published is of no importance for either the research community or society as a whole. This is clearly described in the Lancet series about Research Waste from January 2014 [1-6]. In relation to the concept of "Evidence-Based Research" (EBR) the waste is due to researchers not being aware, or not taking notice, of earlier similar studies. An extreme example of this waste would be patients being randomized to receive a placebo long after it was known that the treatment was effective [7, 8]. This is of course costly and unethical, limits the available funding for important and relevant research, and diminishes the public’s trust in research.
The idea of research as an endeavor building upon earlier findings is as old as science itself. All researchers would agree that before a new study is conducted, it should be made clear that there is a knowledge gap, and a need for the new knowledge in society, although evidence shows this is not frequently done. The digital revolution finally offers us the possibility of realizing an ancient principle through the use of a systematic review of all earlier similar studies when evaluating if a new study is necessary.

In addition, key stakeholders, including patients and clinicians must have their say as well: do they really need this new knowledge? If the clinical trials do not test the relevant interventions or use outcomes that matter, the results will never be useable and just adds to the waste.

- How did the idea of EBR develop? How did you get involved with it?
- Which were the key moments and actors that supported the development of this idea?

HL: As mentioned, the idea of EBR is as old as science itself. Several examples such as Gilbert's research in 1600 on magnets and James Lind in the 18th century studying scurvy clearly indicate this. However, with so many new papers published every year, traditional methods no longer work. As a PhD student I was taught to find the best, newest and biggest study to refer to. No one told me to be systematic. However, in 1994 I was introduced to the concepts of [1] Evidence-Based Medicine, [2] Systematic Reviews and [3] the Cochrane Collaboration by Peter Gøtzsche. Since then I've been hooked, so to speak! I moved to the University of Southern Denmark in 2007 and decided to focus on systematic reviews. Here I realized that many of my colleagues never considered the benefit of a systematic review when arguing for a new study. Instead they pursued the ideas coming from the key journals they read and/or the results they found themselves. There was a feeling that you could know all the earlier studies just by attending conferences and reading the key journals. But a 2014 study by Karen Robinson, Associate Professor at John Hopkins University, indicates clearly that in many cases this was an illusion [9].
In the summer of 2012, I stumbled upon a presentation by Sir Iain Chalmers (founder of Cochrane). In this presentation he mentioned some key studies showing how bad the problem was, and I started to look for more like this. The year after I began as a part-time professor in Bergen, Norway. In relation to a PhD program we decided to introduce this thinking of using systematic reviews when justifying and designing new studies, and when placing them in context of earlier similar studies. We choose to call it "Evidence-Based Research", i.e. researchers should be as evidence-based as clinicians should be (EBM). I started to try and find all the studies related to the topic (not an easy task). Some months later I found the doctoral thesis about this topic by Karen Robinson from 2009. On page 123 she explained that this approach could be called "Evidence-Based Research". So independently we had figured out that this was the best term. I contacted Karen and visited her in April 2014. This really set things in motion, and in December 2014 we established the "EBRNetwork" in Bergen, Norway with the help from a number of key individuals I realized had seen the need for an EBR approach many years before me (Iain Chalmers, Mike Clarke, Karen Robinson, Paul Glasziou and many others). Now we´re working together to promote this!

R: *Currently, you are the chairman of the Evidence-Based Research Network as well as the chair of a newly funded COST Action "CA-17117 - Towards an International Network for Evidence-based Research in Clinical Health Research"(EVBRES).*

- What were the vision and the driving forces behind the establishment of these two networks?

HL: First, EVBRES (The COST Action) is a project under the EBRNetwork. The intention is to raise awareness of the problem, and thereby have the relevant stakeholder´s attention when suggesting the best solution. In addition, we need to develop the methods to use an EBR approach when justifying and designing a new study. We need to establish teaching material and courses about this, and we need to support any initiative to improve the production and update of systematic reviews. Finally, we need to find the best ways to evaluate if researchers are using an EBR approach (meta-research).

R: *Who are the key actors?*

HL: In the EBRNetwork, we have a steering group/ editorial group that includes Mona Nasser (UK), Matt Westmore (UK), Karen Robinson (USA), Jennifer Yost (USA), Donna Ciliska (Canada), Malcolm MacLeod (UK), Marlies Leenaars (NL), Hanna Nykvist (Sweden), Carsten Juhl (Denmark), Robin Christensen (Denmark), Klara Brunnhuber (UK), Caroline Blaine (UK). Over 150 people are on the Action Management Committee of EVBRES so there are many key actors all with an important role to play! In particular I would like to mention Maritta Välimäki (Finland) and the four Working Group leaders of EVBRES: Arlene McCurtin (Ireland), Miloslav Klugar (Czech Republic), Barbara Nussbaumer-Streit (Austria) and Livia Puljak (Croatia). Finally, Iain Chalmers (UK) is supporting us, as is Paul Glasziou (Australia) and Peter Tugwell (Canada).

R: *How are these two networks related to other actors in the Evidence-Based domain?*

HL: EBRNetwork and EVBRES are closely related to other actors in the Evidence Ecosystem, especially those involved in the Generation of evidence (such as the REWARD Alliance) and Synthesis of evidence (such as Cochrane). We also have a close relationship with many involved in Knowledge Translation as we hope in the longer term our work will have a significant impact on evidence Translation. The focus on EBR makes us different as no-one else in the Evidence-Based domain is looking at what an EBR approach truly means and how it can be implemented.

R: *Looking more closely at the EVBRES COST Action, a four year project with over 35 countries participating globally, what are the aims of this project and how will these aims be achieved?*

HL: 35 European countries, and 10-15 other countries outside Europe. The overall aim is to increase and enhance the use of systematic reviews (SR) before engaging in new clinical research and for placing new results in the context of already published results.
EVBRES is divided into 4 Working Groups (WG). WG1 is focusing on identifying the implications of EBR for a group of central stakeholders: patients, ethic committees, funding agencies and journals. In WG2 there is focus on the health researchers, with training schools and an online handbook for them. In WG3, the focus is on a more efficient production and update of systematic reviews, while WG4 is focusing on a standard for meta-research, i.e. research on how researchers are using the EBR approach.

R: *The EVBRES COST Action creates the premises for wider cooperation and involvement of many sectors and expertise. Which sectors and expertise are already available in the EVBRES network and what is your vision regarding the necessity to expand the sphere of collaboration?*

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HL: The EBR approach asks researchers to identify if the new study is of value. Based upon Emanuel from 2000 [10] and Freedman 1987 [11] we define value as research that is necessary, i.e. based upon the results from systematic reviews, and relevant, i.e. based upon the end-user´s / society´s perspectives (in health often the patients and the clinicians).
In order to fulfil this vision, we need expertise in [1] how to identify the end-users and society´s perspectives, preferences and values; [2] how to find, critically appraise, and maybe update or even prepare systematic reviews; and [3] how to decide if the results of a systematic review is conclusive or not. This is the direct competences needed, but closely related we need people who can make the systematic review updates and preparation more efficient, this involves programmers (automation), librarians and experts in systematic reviews. We also need expertise in how to measure the behavior of researchers in order to figure out if we really have a problem, how big the problem is, and just as important: is there a change over time. In other words, we need people with expertise in meta-research. We have all of these expertises represented in EVBRES, EBRNetwork and our collaborators (for example ICASR, International Collaboration for the Automation of Systematic Reviews).

R: *The aim to promote EBR can be a complex task, since it involves a large number of diverse actors, each operating within their own systems of risks and incentives. Which are the barriers associated with this diversity of perspectives and interests that you are expecting to encounter in this promotion of EBR in the framework of EVBRES COST Action?*

HL: There are a lot of barriers we are aware off, and a lot we have not yet identified. First of all, the biggest barrier is if a researcher doesn´t think it is a problem. Some years ago we argued in a accrediation process for a PhD program, that PhD students need to learn and use the EBR approach, but the evaluation committe stated: "Strictly speaking it seems hard to imagine any research not evidence-based. At least it seems impossible to imagine that articles published in journals with a high impact factor do not relates to earlier research". However, unfortunately the evidence show this is not the case. Whenever someone accepts the need to be evidence-based when planning new studies they typically state the following barriers:

1. restriction on number of references in a paper
2. lack of time to wait for a systematic review or prepare a systematic review
3. lack of the knowledge and skills to prepare or update a systematic review
4. We will not refer to a systematic review because we will give credit to other authors of the different original studies
5. Ethic committees think they already have too much to consider whenever a new project is submitted for evaluation

R: *While the EVBRES is still in its early days, you have already hosted in Bergen a first EVRES workshop, in the beginning of February this year. After this first event, what are your sources of optimism with respect to the future of EVBRES? What can be achieved in the future and which factors you think will facilitate these achievements?*

HL: The meeting went beyond expectations. All Working Groups and their related Activity Groups worked hard and accomplished much more than we have dreamed of. However, the biggest challenges are (A) Keeping people connected and motivated between face-to-face meetings, and (B) We have only funding from COST for travelling and accomodation, not the actual work that have to be done. Therefore, we have established an EBR Application Consortium with people from EBRNetwork and EVBRES, and the first application was submitted yesterday (April 9th, 2019).
In the near future we hope to publish some papers about the implications (barriers/facilitators) of an EBR approach among health researchers, patients, ethic committees, funders and journals. We also hope to have 5-7 training schools for health researchers over the next 3 years, with maybe 15-20 participants in each. We will also be working on some publications giving advice on the more efficient production of systematic reviews, and we hope to develop a standard meta-research approach to follow in order to monitor how researchers are doing their research.

R: *Would you like to add anything else, maybe an answer to a question unaddressed in this interview?*

HL: EVBRES is supported by the European Union, thus we can only reimburse European countries and near neighboring countries. However, EBRNetwork is global and we encourage everyone interested to join EVBRES / EBRNetwork.
EVBRES is a four-year project evaluating health research. However, the concept of EBR is relevant for all scientific disciplines and we´re hoping that our experience and new knowledge from EVBRES can be used in other scientific areas.

Interview conducted by: Raluca Sfetcu

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