

SHORT TERM SCIENTIFIC MISSION (STSM) SCIENTIFIC REPORT

This report is submitted for approval by the STSM applicant to the STSM coordinator

Action number: CA15208

STSM title: Research project focusing on development of an instrument

STSM start and end date: 14/1/19 to 21/1/19

Grantee name: Maria Achilleos

PURPOSE OF THE STSM:

The main purpose of the STSM was to visit the Department of Nursing Science at the University of Turku in order to work with Dr Suhonen due to my research topic. My PhD thesis is about medication adherence for patients with glaucoma. In order to conduct my research I need a research instrument, well-grounded and justifiable, to give me trustworthy evidence about the level of adherence in that group of patients. However, there is a gap in the literature for medication adherence instruments especially for patients with glaucoma. So I decided to contact Dr Suhonen, an experienced academic to discuss further my concerns and to increase my knowledge in research methodology and practice so I can 'judge' if an existing instrument is appropriate (methodologically) for my research and if not, to be qualified enough to develop my own.

DESCRIPTION OF WORK CARRIED OUT DURING THE STSMS

(max.500 words)

As far as the work carried out during the STSM was as planned, according the program.

More specific on day one (Monday, 14/1/19) we analyzed the concepts of instrument and measurement. We clarified that instrumentation is a component of measurement and an instrument is selected to examine specific variables in a study whereas measurement, 'provides the fundamental connection between empirical observation and mathematical expression of quantitative relationships'. with other words is the way of assigning numbers to objects.

On day two, we talked about the different types of instruments measuring health and dimensions of health. We discussed how health (as a continuum) can be measured with different instruments· for example, health as quality of life, health and happiness, health as a behavior, etc. It's funny that such a 'simple' word can have so complicated meaning.

On day three, maybe the most interesting day for me, we talked about the methods for locating existing instruments and how to design questionnaires and scales. We 'surfed' in websites such as US National Library of Medicine, Mapi Research Trust, eprovide to get familiar with these platforms. Also, we discussed about strategies for designing measurement tools and about ways to evaluate existing tools based on these principles.

On day four (the most difficult day for me) we talked about validity and reliability testing. We analyzed the criteria we must have in mind during the overall quality judgement of an instrument.

Also, Dr Suhonen informed me about the background work required in order to select or develop an instrument. She mentioned that a typical mistake that the most students do is to choose an instrument, assuming that is valid and well functioning only because it has been used a lot in the literature. She continued saying that the development of an instrument is a long term procedure which must be based on a theoretical

model, in order, fuzzy concepts can be measured, empirically and quantitatively (operationalization). Her examples (by using the Individualised Care Scale) helped me understand the procedure but honestly, I can't write down all the useful things I have learned that day (testing the instrument: reliability, internal consistency, validity, face validity, content validity etc), there is not enough space in this paper to list them.

On day five we continued with construct validity and factor analysis. To be more specific, we discussed on how to use factor analysis in an instrument development process. In addition, the use of an existing instrument in different cultures/languages has been also discussed. Dr Suhonen explained what Equivalence means and how important is to ensure the 5 dimensions: Content, Semantic, Technical, Criterion and Conceptual Equivalence. To do so, different techniques in translating instruments have mentioned (such as forward-back-translation, bilingual techniques, committee approach and pre-test). We concluded that none of these is perfect.

Finally, on day six (Monday, 21/1/19), we summarized the whole week and I had the opportunity to ask my last questions.

DESCRIPTION OF THE MAIN RESULTS OBTAINED

During my visit to the Department of Nursing Science in the University of Turku due to the STSM I have to admit that my knowledge on research methodology and practice have increased.

Honestly, I can't write down all the usefull things I have learned that week. Dr Suhonen is such an experienced academic. We discussed a lot about the background work required in order to select or develop an instrument. I must say that I feel more confident now to continue with my PhD thesis (which is in accordance to the RANCARE Action objectives), as I know either how to evaluate existing tools or what strategies are needed for designing new ones. I feel more confident because I am able to judge the existing instruments and capable enough to develop my own, if is necessary.

I can summarize the whole week by saying that my knowledge and skills in developing, evaluating and implementing instruments into scientific research have improved a lot. and as an early career researcher, is a very important achievement for me!

FUTURE COLLABORATIONS (if applicable)

I don't know if I will have any future collaborations with Dr Suhonen or the University in general, but, I can say for sure that It will be my honor.

Anyway, I am very grateful I have had the opportunity to attend to the University of Turku which is a center of excellence in research and to meet Dr Suhonen. she really inspired me!