Author's response to reviews

Title: Career-Success Scale - a new instrument to assess young physicians' academic career steps

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Author's response to reviews: see over
Answers to the reviewers

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Submission of the manuscript: “Career-Success Scale – a new instrument to assess physicians’ academic career steps” by Buddeberg-Fischer, Stamm, Buddeberg, Klaghofer

Dear Editor-in-Chief

We want to resubmit the above mentioned manuscript in the revised version. We thank the reviewers for their important comments which helped to improve the paper.

We have revised the paper as suggested by the reviewers. The revised sections are highlighted in blue. In the following we answered the reviewers’ comments point-by-point.

We would be glad, if the manuscript could be accepted for publication after the second review process.

Kind regards

Prof. Barbara Buddeberg-Fischer, M.D.
Answers to Reviewer 1: Sharon E. Straus

In our paper we used the term “Career” in the narrow sense of a career to a prestigious position in the professional field of medicine, mainly in hospital medicine and/or in academics. Thus the term “career” is not used for physicians aspiring to and running a private practice. This definition of “career” corresponds to the common meaning of career in German speaking countries.

1. This scale is a short, reliable and valid instrument to measure career achievements in an objective way. It is broader and more differentiating than looking at the single aspects of research grants and publications. It is especially suitable for physicians at the beginning of their career.

2. In Switzerland, as in the other German speaking countries, physicians who aspire to a hospital or academic career have to be successful researchers, also those who are mainly clinicians. I.e. they have to fulfill the conditions for a habilitation (that means: at least 20 papers published as original papers in peer-reviewed journals with high impact factors in the field, English language papers, being first author in at least half of the numbers of papers, also some book chapters and papers in other journals).

Only at the Zurich medical school, very experienced clinicians who have been medical educators for at least 5 years, can apply for the title of a “Clinical Educator” (“Klinischer Dozent”). Beside the teaching requirements they have to publish at least some papers addressing issues of clinical relevance.

Usually medical educators are senior physicians, who have already passed the tenure track; i.e. medical educators are also researchers and advanced in their academic career.

3. we made the suggested corrections

4. Based on the study design of a cohort study, all the participants have almost the same seniority at this stage of their career. I.e. they have the same position (residents) and salary.

5. We made the suggested correction

6. The expert meeting consisted of clinicians and academics in function of mentors and mentees, residency program directors, medical sociologist, with equal gender distribution. There were no physicians from private practices included.

7. The items of the CSS were generated by the representatives of the expert meeting, but also based on criteria formulated for tenure track, scholarships, funding, and requirements of chief positions. In the literature we did not find other scales measuring objectively assessed career success in young physicians in the sense of preconditions of a prestigious career.

8. This issue is already answered at point 2.

9. We added the introducing question to the Career Success Scale in the section “Instruments”: ….the participants were asked: “Looking at your career, what career steps have you made until now?”

10. We analysed whether children had an influence on career success in men and women; we have described the results in the result section, page 9: Only very few participants already have children (see also description of the study sample page 5). Having children did not have a significant influence on the career success, independent of gender (regression analysis).

11. As described in the instrument section we also included mentoring / supervision / professional network described in the “Mentor-Protégé Relationship Questionnaire”, Scale Mentoring-Experience. As shown in table 4 (multiple regression analysis) mentoring has a significant influence on career success.

12. If trainees and mentors regularly assess the career progress, i.e. in yearly intervals, they get an objective view of the career progress and can explore if there are some barriers which have to be discussed.

13. We did not conduct a check in the Medline whether the self-reported data are correct. Up to date we have no doubts about the honesty of the participants’ answers. Furthermore, to ensure participants’ anonymity, the returned questionnaires were only identified by a code. The respondents sent their addresses to an independent address-administration office, allowing for follow-up. We added this explanation in the Method section, page 5.

Thank you and kind regards
Barbara Buddeberg-Fischer
Questions to reviewer 2: Olaf G Aasland

1. In Switzerland physicians who want to choose an academic career have to start this at an early stage of their postgraduate training, because grants and scholarships often have an age limit, i.e. less than 32 or 35 years of age. Also for special research professorship applicants must be less than 35 years of age. Also those who pursue a hospital career aspiring to a chief position at a great county hospital have to pass tenure track, i.e. they have to combine clinical work and clinical research.

2. Most of young physicians aspiring to an academic career combine clinical work with research activities. Usually it is possible to switch from clinical work to mainly research and back again for a year or two. Unfortunately, there are only few clinical posts at university hospitals where trainees can do 80% clinical work and 20% research during their residency.

3. Re: labour market for academic positions: There are indeed not as many academic posts at university institutions. However, as mentioned in point 1, to get a prestigious chief position at a county hospital, people also have to have conducted a lot of research and passed tenure track.

4. The reviewer is right, the distribution of the CSS is skewed. The assumption for parametric statistical procedures is normal distribution of dependent variables in analyses of variance and normal distribution of dependent and independent variables in multiple linear regression. According to Box (1954), Bortz (2004) and Tabachnik & Fidell (2001) the violation of this assumption can be tolerated if sample size is sufficient. This is in analysis of variance minimum n = 10 per group (demands met); in multiple linear regression if n > (8/f^2) + (m-1) where m is the number of dependent variables and f^2 the expected effect (f^2 = 0.05 for a small to medium effect). That means a minimum sample size of n = 172 in our study (demands met). As the reviewer suggested, we also analysed data by Kruskal-Wallis H-test and achieved the same results for main effects as in analysis of variance. Unfortunately the interesting hypothesis of an interaction between gender and career aspired to cannot be tested by nonparametric procedures. The dichotomisation of the CSS seems to be very arbitrary and there is no reasonable cut-off value. Additionally, the dichotomisation leads to a statistical lack of information.

5. A reconstruction of the CSS would mean to construct and evaluate a new scale. A logarithmic transformation of the CSS values would produce more parametric properties, but this would certainly make it much less appealing.

Thank you and kind regards
Barbara Buddeberg-Fischer
Answers to reviewer 3: Molly Carnes

In our paper we used the term “Career” in the narrow sense of a career to a prestigious position in the professional field of medicine, mainly in hospital medicine and/or in academics. Thus the term “career” is not used for physicians aspiring to and running a private practice. This definition of “career” corresponds to the common meaning of career in German speaking countries.

1. The aim of the study was to develop an instrument for career success to measure young physicians’ academic career steps. The items used are objective criteria which are used to measure career success in academia and prestigious clinical institutions in Switzerland. It is true that trainees who intend to run a private practice and achieve this goal will subjectively assess their career as being successful. But these criteria are not those applied for hospital or academic careers.

2. We think that the Career Success Scale is very specific for measuring career steps in academia. It was not the aim to assess whether a person has achieved what she/he aspired to as an individual career goal (see limitations page 10).

3. The first extracted factor in factor analysis explains 50% of variance. The 7 Items of the CSS are based on one underlying factor which we call “career success”. In other words, the 7 items operationalise the theoretical construct “career success”. The factor loadings of the items shown in table 1 indicate how well the item fits the factor.

Thank you and kind regards
Barbara Buddeberg-Fischer