Oponentský posudek disertační práce [Ph.D. Thesis Review]

Název: Zdravotní gramotnost uživatelů návykových látek. [Health literacy among drug users]. Praha, 2021. 128 s. Školitel: doc. Mgr. Roman Gabrhelík, Ph.D.

Autor práce: Mgr. Gabriela Rolová

Obor: Adiktologie

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Thereotical background

The thesis focuses generally on health literacy. This topic is well-established in public health research, although studied predominantly in the USA. It has been shown that health literacy plays important role in health promotion, which makes it worthy of investigating from practical (clinical) point of view. At the same time, the concept itself seems to be rather complex and not sufficiently described in the current literature, which makes it worthy of studying from the scientific perspective as well. In the Introduction, the author argued for the relevance of examining health literacy in relation to substance use; namely she claimed (1) that the lower sociodemographic background of most people with SUD (substance use disorder) posted the well-known risk factor for low health literacy, and (2) people with SUD have poor health (as a result of SUD) and thus their need for the high health literacy is higher than in general population. In addition, the author claimed that the majority of people with SUD is getting suboptimal healthcare. The relevance of the studied topic/research questions is well established.

Minor issues:
- Although the prevalence of suboptimal healthcare in Czech people with SUD is alarmingly high (77–93%), it is not clear how health literacy could affect this situation. I would appreciate more elaborated description of study aims and more explicit explanation how the study can address problems raised within Introduction.

Literature review provided by the author is of high quality. It covers all important aspects relevant for the studied topic, e.g., the various conceptualizations and current state of research on health literacy, the effects of health literacy on health behavior, and the known associations between health literacy and number of factors including substance use. I appreciate the author's sensitivity toward differences in definitions (and components) of health literacy and the understanding of the effect of these differences on the comparability of currently available findings. Literature review is based mostly on recent academic articles

published in English. In sum, the author cited 157 sources. I have just a few comments. In key chapters on the associations between health literacy and SUDs (1.8 and 1.9), I would appreciate more argumentative and analytical approach. The chapters are too descriptive given the fact, that the findings presented here are most closely related to the author's research questions and at the same time rather counter-intuitive (or at least inconclusive). It seems that the prevalence of low health literacy in Czechia is generally high (i.e., 60%) compared to other European countries and – more importantly – not associated with alcohol/tobacco use (p. 24). Moreover, some foreign studies showed that SUD is positively associated with **higher** health literacy (p. 25). Similarly, in some SUD populations, the prevalence of low health literacy was rather low (22%) (p. 27). Basically, the only study that found the high prevalence of low health literacy in SUD population was the one of Degan et al. (2018) (p.27). I believe that these findings would require thorough analysis. In addition, I missed the summary of findings that would bridge the theoretical and empirical part of the thesis. From what I understood, the most stable correlates of the low health literacy are low education and older age. Are there any other important factors? Maybe mental illness (other than SUD)? How these factors/conditions relate to SUD?

Minor issues:
- The use of terms was sometimes confusing, e.g., on the page 12, the author probably used two terms "medical literacy and health literacy" for the same concept; or on the page 14: Does "the public health approach to health literacy (a model of Nutbeam, 2000)" equal to "multidimensional health literacy"?
- In some health outcomes of health literacy (chapter 1.4) it seemed to me that these outcomes are rather "components" of health literacy (e.g., worse ability to understand medical materials and health-related information, p. 17). I would appreciate if the author would reflect on this.
- I noticed few cases in which a newer reference would be needed to support the argument, e.g., on the page 18: "However, the causal pathways linking health literacy to health outcomes are not fully understood yet (Berkman et al., 2011; Paasche-Orlow & Wolf, 2007)."
- The reporting of the results of previous studies was sometimes confusing, e.g., "limited health literacy was associated with a **poor** self-perceived health ($r = -.27$)…, higher frequency of doctor visits ($r = -.11$)…, **lower** physical activity ($r = -.19$)" (p.23) – it was difficult to say when the negative correlation really meant the negative association with a listed variable and when not.

Methods and study design
The aims of the study were both **explorative**, i.e., to assess the (scores of) health literacy and its sociodemographic correlates in patients treated for SUD, and **confirmative**, i.e., to test the hypothetical causal model with health literacy as a predictor of self-reported health indicators in the same population. The secondary objective was to compare AUD (alcohol use disorder) patients with other SUDs patients, which can be important for a clinical practice.
The study design was a cross-sectional survey, which is very appropriate for the explorative aims, but not optimal for the testing of the causal relationships between health literacy and health indicators. Prospective observation of patients would be the better way to assess the

causal effects of health literacy. However, it should be noted, that the author tried to overcome this limitation via proposing of a clear causal model (depicted on the page 38) and via adopting corresponding statistical analysis (SEM, hierarchical logistic regression). In my opinion, some possible causal links are missing from the model (e.g., the link from substance use behavior "back" to some sociodemographic variables and mental health conditions), but I understand, that the model could not be overly complicated to allow statistical testing. In addition, I would argue for using the more explorative methods for assessing the proposed causal relationships (e.g., path analysis), but the statistical analyses adopted by the author are also appropriate. The study methods are described very well, with all necessary details and in coherent and well-arranged manner. I appreciate, that the author paid a lot of attention to the (description of) operationalization of variables, which is very important for the sake of comparability with other studies especially within topics with no predominant theory/conceptualization and/or measurement such as health literacy.

Minor issues:
- p. 34: I would suggest not to use the term "independent (predictor, explanatory) variable" for self-reported health indicators and quality of life, while these variables state as dependent (outcome) variables in the causal model.
- Statistical Analysis: The author has chosen simple linear regression to examine correlates of health literacy. This is not very usual; typically, while examining associations (without ambition to presume causality), correlation coefficients are being reported.

Results
I highly appreciate the whole Results section. It is very well structured, clear, coherent and comprehensive. All tables and figures are excellent – informative and easy to read. There is a lot of descriptive results in the thesis, which I find very useful. It should be emphasized, that the author managed to acquire data from relatively large sample of specific population (patients with SUD in residential treatment). Moreover, given the inconclusiveness of findings on the prevalence of low health literacy among population with SUD, these (descriptive) results are the important contribution for the field.

Minor issues:
- p.57: I found the way of reporting associations between health literacy and health indicators a bit confusing (in terms of what is presumed predictor and outcome). Given the causality in the proposed model (and analysis reported in chapter 3.4), I would expect the opposite logic of reporting results (i.e., what meant increase in health literacy for the health indicators and not the other way around).
- I wonder why "Physical condition" was included as a predictor of health status – isn't it rather a part of health status (Table 3.15).

Discussion
The whole discussion is of high quality. It is well structured, very clear, coherent and concise and it addressed most questions raised by previous studies and by the results of the current study. I appreciate that the author was able to discuss even rather counter-intuitive findings, e.g., the relatively low prevalence of limited health literacy within the sample of SUD patients in comparison with the estimated prevalence in general Czech population; or the

fact, that the current study did not find the significant effects of age and education attainment, the two most important and consistent predictors of health literacy according to previous studies. My only concerns are related to the testing of the causal model assessing the effect of health literacy on health indicators. The author claimed that increasing health literacy should lead to the improvement of health in patients treated for SUD (p.79). I do not believe this conclusion is fully supported by the results of current study. A randomized control trial or at least prospective observation would be needed to make such strong claim. But it must be noted that the author acknowledged the limitation of cross-sectional design in the first paragraph of Limitations (chapter 4.5). In general, the chapter on limitations indicated that the author fully understood the advantages and disadvantages of different research designs in the field of addiction science.

Summary:

The main objectives of the thesis have been fulfilled. The results of the thesis are relevant to current needs of the scientific community and are important for the further development of the field of addiction science and public health. Mgr. Gabriela Rolová, the author of the thesis, proved the ability to conduct research and to achieve scientific results. **I recommend the thesis for presentation with the aim of receiving the Degree of Ph.D.**

Praha, 15. září 2021   Mgr. Kateřina Lukavská, Ph.D.
                                                            Katedra psychologie Pedagogické fakulty UK

Questions:

1. As for study design/methods: Completing survey required literacy. Does the author think this fact could influence study findings? In what way?

2. The author suggested that the relatively low prevalence of limited health literacy in treated SUD patients could be a result of the increased medical attention given to them. Could the author propose how to verify this hypothesis?

3. You argued that health literacy does not seem to be related to substance use patterns. Could you elaborate this conclusion and/or try to analyze the limits that you study could have to be able to support/disprove this particular link between substance use and health literacy?