REVIEW

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**Re: Defence of a dissertation for the award of an educational and a scientific degree of “Doctor” in the field of higher education
7. "Healthcare and Sports", professional field
7.4 "Public Health"**

Topic of the dissertation:

"UNVEILING PLACEBO POTENTIAL: A PUBLIC HEALTH APPROACH TO UNDERSTANDING AND HARNESSING LOW BACK PAIN RESPONSES IN ISRAEL”

Author: AIHAM GOTANI

According to Order No. P-109-504 /10.12.2025 of the Rector of the Medical University of Varna, I am included as an internal member of the Scientific Jury. According to Protocol No. 1 of 16.12.2025 of the first meeting of the Scientific Jury, I am assigned to prepare a review on the procedure for acquiring the educational and scientific degree of "Doctor" by Aiham Gotani, a doctoral student in the independent form of study in the Doctoral Program "Public Health Management", Professional field 7.4 Public Health, at the Department of Social Medicine and Health Care Organization, Faculty of Public Health, Medical University "Prof. Dr. P. Stoyanov", Varna.

I. Career development of the doctoral student

Aiham Gotani completed his secondary education in 2011 at Masadeh High School in the Golan Heights, after which he continued his higher education at a college in Safed, Israel, where he obtained a bachelor's degree in Nursing in 2017. In 2018, he continued his higher education at the University of Haifa, where he obtained a master's degree in health administration (with distinction).

Since 2023, he was enrolled as a doctoral student in an independent form of study in the Doctoral Program "Public Health Management" at the Department of "Social Medicine and Healthcare Organization" at the Medical University of Varna.

Aiham Gotani 's professional development is in his main field of expertise – nursing. For over eight years, he worked as a “registered nurse” in the emergency department at the Safed / Tzfat Medical Center in Israel. He has extensive practical experience with a focus on research and interests in the field of public health. There he participates in teaching courses related to emergency medicine and public health. He works as a research coordinator and develops new educational programs for healthcare professionals.

He speaks Arabic, Hebrew and English.

2. Relevance of the topic

The topic of the presented dissertation adresses a significant public health problem – living with chronic lower back pain (LBP) , integrating the importance of the placebo phenomenon for pain management with an interdisciplinary public health approach in a specific local context - Israel.

Low back pain is one of the most common chronic conditions, leading to reduced work capacity, long-lasting suffering and significant economic and social costs for the patient, family and the healthcare system. Specifically, for Israel, low back pain is the cause of the highest disease burden in 2023 (1161 DALYs per 100,000 people) according to the Global Burden of Disease Study 2023. Effective management of LBP has the potential to improve the quality of life of a large number of people, reduce healthcare costs, and support the sustainability of the country 's healthcare system.

The focus on the “placebo potential” for pain management implies a desire to identify effective non-clinical strategies that can influence patients' cognitive and emotional responses to pain.

The public health approach to optimizing care outlined in the title, draws attention to the role of systemic, cultural and institutional determinants of the placebo potential, beyond specific clinical interventions, which is particularly relevant in the multicultural context of the Israeli society.

The interdisciplinary combination of communication, healthcare and public health creates the conditions for the significance and practical applicability of the results in real practice and health policy.

3. Understanding the problem

An in-depth examination of the specifics of the problem under study is provided in the literature review, which is presented in 50 pages – slightly more than a quarter of the total volume of the work. The literature review is comprehensive, based on 206 sources, over half of which are from the last 10 years, which testifies to the topicality of the subject and the doctoral student’s knowledge. A number of inaccuracies were identified in the process of citing the literature.

The review begins with a current analysis of the epidemiology of LBP. A trend of increasing incidence of the problem on a global scale is outlined. This part of the review refers to studies after 2020 and, although no detailed data for Israel is presented, the importance of LBP for public health in the country is highlighted, with consequences, that go beyond the individual level and include economic and social effects for society.

The next section focuses on the profile of the patients with LBP, cultural differences in pain perception, and the approaches used to treat patients with LBP in Israel. The author correctly notes that the traditional therapeutic approach includes pharmacological treatment (including NSAIDs), physiotherapy, surgical interventions, and cognitive-behavioral therapy in addition to standard care. It is mentioned that verbal placebo interventions are poorly studied, but are potentially important strategies in chronic LBP management in Israel.

The next part of the literature review is dedicated to a theoretical overview of the challenges in pain assessment, the subjective perception of pain and its chronicity, the mechanisms of pain modulation, and the role of communication in pain modulation.

The remaining third of the review is devoted to placebo/ nocebo effects, placebo analgesia, the role of non-clinical supportive communication, emotional support, empathy, clinical dialogue, the role of psycho-cognitive factors and context in the communication process in pain mediation.

At the end of the literature review there is no synthesis summary integrating the presented literature data, clearly outlining the gaps in the research to date, and arguing for the need for further research. This weakens the logical connection between the theoretical framework and the formulation of the research questions.

3. Purpose and objectives of the dissertation

The goal, objectives, hypotheses, results and conclusions are among the mandatory elements of each dissertation work according to Art. 61 (3) of the Regulations for the Development of Academic Staff of the Medical University of Varna.

The structure of this thesis follows an international model, in which after the introduction to the topic, the main and additional research question are formulated, all of them rationalized with research objectives. This structural positioning of the goal and tasks does not pose a problem for the quality of the dissertation work.

In this case, I consider the main research question as the main objective of the dissertation, and the so-called objectives (pp . 15-16) as specific research tasks that need to be accomplished.

The research question formulated as "To what extent are non-clinical communication strategies—such as verbal placebo, empathy, and trust—applied by Israeli healthcare professionals in the management of LBP and how do patients perceive their impact?" reflects the title, and sets a two-way direction for the research. On the one hand, the focus is on the application of verbal placebo techniques, empathy, and trust by Israeli healthcare professionals, and on the other hand, there is a question of how patients with pain perceive the effect of these non-clinical approaches.

The main question is detailed by eight (too many) additional questions. The first three of them are aimed at the knowledge, attitudes and practices of Israeli health professionals in applying different aspects of the "placebo" phenomenon in the management of low back pain. The fourth aims to reveal the barriers to the application of placebo by the subject – Israeli health professionals. The next 4 questions focus on a comparative study of the role of different health professions, the role of training, cultural and institutional factors for the systematic integration of verbal placebo and empathic communication in clinical practice.

There is a certain discrepancy between the main and the additional research questions. If the main question has two subjects – health professionals in Israel and patients with low back pain, the second subject is obviously omitted in the additional questions. It also does not appear in the formulation of the subsequent objectives, which should operationalize the main research question (in Bulgarian dissertations these are the tasks). Objectives 1-3 are logically aimed at studying the knowledge, attitudes and practices of Israeli health professionals in applying non-clinical communication

strategies. Objectives 4 to 7 provide for a study of the factors that hinder or stimulate health professionals in the application of verbal placebo, empathetic communication and trust building in their work; studying the professional background and training on the knowledge, attitudes and practices of applying verbal placebo; identifying gaps in training related to communication skills and the application of verbal placebo.

The tasks are even narrower and are entirely dedicated to healthcare professionals, their training, the extent to which they apply the so-called verbal placebo and non-clinical communication techniques for managing lower back/low back pain.

The question remains open as to why are patients included in the main research question, since it is clear from the very beginning of the dissertation that this aspect will not be studied?

4. Research methodology

The research methodology is presented on 26 pages and in certain aspects is very thorough and detailed, but in others, there are significant omissions.

The introduction to the methodology informs the readers that quantitative methods will be used to test whether a structured educational intervention based on biopsychosocial model and the principles of patient-centered care will improve various aspects of clinicians ' communication behavior.

It is reported that the design of the planned study is a “two-wave pre–post design with a planned three-month follow-up to assess retention of the effect”.

This formulation does not accurately reflect the design of the actual study. It indirectly becomes clear that the researcher plans to conduct **an intervention study**, measuring knowledge, attitudes and practices of pain management among health professionals before and after an educational intervention. Not only is the design not precisely formulated, but it also does not allow for an answer to the research questions and the fulfillment of the objectives as formulated at the beginning of the dissertation.

In this part of the methodology, after re-presenting the theoretical framework once developed at the beginning of the dissertation (before the literature review) and justifying the quantitative approach, the doctoral student changes the research question. He does not recall and operationalize , but changes the essence of the research question and poses new "additional research questions", and these actions are not based on the literature review.

I consider this approach of reformulating the aim and objectives inappropriate, because with the change of the research question and objectives, the literature review remains aside from the newly formulated research questions. In the presented review - the level of knowledge, attitudes and practices of health professionals related to the management of LBP, as well as the role of placebo and nocebo effect, in particular verbal placebo, are not considered. There is no review of the preferred methodological approaches for measuring knowledge, attitudes and practices regarding patient-centered LBP care in other studies. There is also no review of educational interventions to improve knowledge and practices regarding the different aspects of the verbal placebo effect and the different aspects of communication.

In this context, the sample is defined, which should include doctors and nurses from a single medical center in Tzfat, Northern Israel. There is no comment on why the sample does not include other important groups of respondents such as: physiotherapists, rehabilitators, kinesitherapists, since physiotherapy is part of the routine care of LBP in Israel.

The next element of the methodology is devoted to determining the sample size, a mandatory element of the planning process of any empirical study. The conditions set in this process are adequate power of 80%, average effect size before and after the intervention. The determination of the required sample size is based on the desire to identify differences in the knowledge, attitudes and practices of health professionals before and after the intervention, but does not assume a sample size that would allow generalization or assessment of knowledge, attitudes and practices of all healthcare professionals from which the sample is recruited (which is part of the tasks, specifically tasks 2 and 3): "Task 2. To evaluate the level of knowledge and attitudes of healthcare specialists in Israel regarding verbal placebo and others relevant non-clinical communication strategies. 3. To analyze the extent, in which these strategies are applied in clinical practice in the treatment of low back pain" or the main research question on page 96: To what degree the Israelis healthcare professionals apply non-clinical communication strategies — empathetic communication, trust building, SDM,cultural adaptation and expectation – enhancing messages , (" verbal placebo ") – in the management of LBP and to what extent does structured educational interventions improve these practices from baseline to post- intervention (and at 3 month follow up, when available)? With this omission in sample planning, a significant part of the objectives of the study become unachievable.

With regard the presentation of the tool used to assess knowledge, attitudes and practices – the tool is not presented, the total number of questions, nor their distribution acress the individual elements of the questionnaire was indicated. It is stated that the tool includes a total of 4 constructs: empathy, trust, shared decision-making, cultural competence and a demographic component. There are no details about - verbal placebo, there is no assessment of factors that influence communication. Regarding the construct empathy and shared decision-making, baseline scales used as a basis for the tool in the study are indicated, but it is not clear to what extent they were applied. At the end of the methodology, it is stated that completing the questionnaire takes between 8 and 12 minutes, which points to a limited total number of questions and therefore a superficial assessment of the various constructs.

The educational intervention is not presented in sufficient details. It is clear that it includes one lecture-presentation (prepared by the doctoral student, but not attached, therefore an assessment of the content is not possible), one illustrative video (not attached, it is not clear who the author is and what its duration is) and 2–3 weekly messages via WhatsApp, containing practical examples, short tips and key messages that emphasize the importance of the topic under consideration. The content of these messages is not presented. Screenshots are shown in Hebrew, but not in English. It is not clear how many lectures and messages each participant received. It is marked that each topic is 25 minutes long, but there is no information on how many topics were covered in total. The duration of the intervention in its entirety is indicated as 1-2 months (there is a 2-fold difference between 1 and 2 months of training?).

In summary, the presentation of the methodology in the dissertation has some positive aspects – e.g. the use of validated international scales as a basis for the instruments and the choice of statistical methods. There are also serious shortcomings and inaccuracies, e.g. in the definition and justification of the chosen design, the presentation of the intervention and the instrument for collecting information.

The limitations of the design are discussed in the methodology, but potential strategies and attempts to overcome them are not. This shows that the doctoral student clearly understands the limitations of his chosen methodology, but does nothing to overcome them.

5. Characterization and evaluation of the results and contributions of the dissertation work

The presentation of the results begins with a general description of the individuals studied, and at this stage a comparison between the two professional groups studied is omitted – e.g. in terms of gender, age and professional experience, which should have an impact on communication with the patients.

This is followed by an assessment of the manifestation of empathy, trust-building practices, shared decision-making, and cultural sensitivity before conducting an intervention.

Statistically significant differences were reported between nurses and physicians on all four measures, with nurses consistently outperforming in various aspects of empathy. Similar differences were found in trust-building practices, with the exception of discussing placebo mechanisms, where physicians were more active. No significant differences were found in shared decision-making, but nurses again outperformed in cultural competence .

Pre- and post-intervention comparisons show significant effectiveness in three of the four groups of indicators – empathy, trust building and shared decision-making. However, these cannot be automatically attributed to the educational intervention due to the lack of a control group and the lack of control for any confounding factors.

In conclusion, a single-group intervention study was conducted among a small sample of doctors and nurses, which can be defined as a pilot study. Its results do not allow us to discuss the question of the level of knowledge, attitudes and practices regarding pain management with various communication techniques among health professionals in Israel. Without control for potential confounding factors, in the absence of a control group and blinding, conclusions about the effectiveness of the implemented intervention remain theoretically probable, but also highly speculative.

The design used and the results obtained do not allow for a satisfactory answer to the research question and the tasks set.

A major shortcoming of the dissertation work is the lack of clearly formulated conclusions on the tasks set and the formulated hypotheses.

6. Publications in connection with the dissertation work

In connection with the dissertation work, the doctoral candidate presents two articles and one full-text report from an international conference. The first of the articles is in a journal with an impact factor, with the first author – the scientific supervisor, which probably reflects the degree of participation in the work on the publication. The article defined the design of the presented study as cross-sectional, because results were reported only from the initial assessment of the subjects. In this case, too, it is a descriptive survey study, which cannot claim to be representative.

In the second article, the doctoral student is an independent author, which fulfills the minimum requirements of the Regulations of the Medical University of Varna for scientific activity for the acquisition of the ONS "Doctor".

A third full-text report has been presented –from an international conference in which the doctoral student is the first author.

7. Thesis abstract

The abstract accurately reflects the content of the dissertation. For this reason, the inaccuracies in the cited literature and shortcomings in the formulation of the aim, objectives, and design of the study, as well as the lack of conclusions, indicated in the dissertation, are also visible in the abstract.

CONCLUSION

The presented dissertation is on an important topic, significant for healthcare professionals providing care for patients with LBP, and is original in nature.

The analysis identified serious problems and incompleteness in the presentation of the methodology, as well as deviations from the requirements for the content of a dissertation according to the Regulations for the Development of Academic Staff of the Medical University of Varna (Art. 61 (3)).

Despite all the weaknesses outlined, the doctoral student demonstrated an ability to plan and independently conduct a pilot intervention study, with which he tested a tool for assessing knowledge, attitudes and practices, as well as a potential intervention for their improvement. The data analysis is based on properly selected and applied statistical methods. The results have practical significance and the potential to stimulate subsequent intervention study.

Based on the presented positive assessment of the doctoral student's work by the scientific supervisor, confirmed by the Department Council of the Department of Social Medicine, the results of the doctoral minimum exams, the ability to independently conduct research, collect and process data, present results, proven by publication in a in an IF journal, I accept that the objectives of the training have been achieved, and the requirements of the Law for the Development of the Academic staff of the Republic of Bulgaria and the Regulations for its implementation have been met.

The above gives me reason to give ***a positive evaluation*** of the presented dissertation work and ***propose to the scientific jury to award the educational and scientific degree "Doctor"*** to Aiham Gotani in the doctoral program in " Public Health

Management" in the field on higher education 7. Health and sports, professional field 7.4. Public health.

6.03.2026 Prepared the opinion

Prof. Dr. Klara Dokova, MD, MPH PhD