

Research article

Interesting, oftentimes even trendy! Attitudes of medical students regarding spa medicine

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Abstract: The popularity of balneology and medical climatology among medical students has scarcely been investigated but may represent a pertinent topic for the field. **Methods:** A survey was conducted among 53 German medical students (80% female; mean age 22.5 years; 39% pre-clinical stage) on attitudes and interest in spa medicine, their associations with the German terms 'Kur' (cure) and 'Kurortmedizin' (spa medicine; health resort medicine) and their own health behaviour. Associations with cures were recorded using a visual analogue scale (vas). **Results:** A majority (72%) of the sample indicated support for the inclusion of more information about spa medicine in university curricula. Spa medicine is associated with older individuals, but with less association to overweight and psychiatric patients. The data for the statements "a spa treatment is up-to-date" and "spa treatment is effective" exhibited a normal distribution in the sample. A significant proportion of respondents reported practicing thermal baths, healthy nutrition, sauna, and Kneipp medicine themselves. **Implications:** The majority of medical students classified spa medicine as interesting and relevant and do not see it as old-fashioned. This interest should be encouraged in university teaching. Interesting points of reference also arise in relation to predictors of career choice among future physicians.

Keywords: hydrotherapy, student education, medical students, medical climatology, complementary Medicine, Kneipp Medicine, alternative Medicine, teaching; medical School, student health

1. Introduction

Balneology and medical climatology with their medical treatment in traditional Spas and health resorts represent a timely and sustainable branch of medicine [1]. Spa medicine has a long historical tradition and is constantly undergoing further empirical and scientific validation of its methods [2-8]. Still, this does not insulate the discipline from the challenges encountered by other medical specialities such as dearth of specialists or adequate reimbursement by statutory insurance companies.

Medical specialties benefit considerably from the favourable attitudes of medical students towards their respective disciplines [9-12]. A positive attitude among young and emerging colleagues has the potential to address recruitment challenges [13], but it can also influence the long-term viability of a specialty as a whole [14-17]. Moreover, future colleagues will have an influence on the future flow of patients. It is therefore of professional interest for spa medicine, balneology, hydrology and medical climatology to consider the interest and image of spa medicine among medical students [18]. However, it has scarcely been investigated. The research on attitudes of medical students towards their subjects encompasses a plethora of studies on complementary medicine [10, 19, 20] and naturopathy [21, 22]. However, only limited work examines medical students attitudes towards spa medicine or balneology.

The objective of this pilot study is to provide an initial description of the image of spa medicine and an assessment of interest among German medical students including the popularity of spa medicine. It was our intention to ascertain whether the terms 'cure' and 'spa medicine' may evoke primary non-medical, psychiatric or historically negative associations and whether the term is perceived as modern. Additionally, we aimed to address whether medical students themselves engage in the practice of spa medicine treatments such as Kneipp, sauna, and thermal baths. Further, our aim was to evaluate the desire of medical students to learn more about these health resort medicine during their academic pursuits.

2. Materials and Methods

A total of 53 German medical students, predominantly from the University of Tübingen, a small university town in the southwestern region of Germany, were surveyed. The survey was conducted on a voluntary and anonymous basis. It was not possible to trace back the responses. The mean age of the participants was 22.5 years (standard deviation 5.7 years). The German medical degree programme is structured into two distinct phases: the pre-clinical and the clinical. 39% were in the preclinical phase, while 61% of the study subjects were in the clinical study phase. The gender distribution was 80% female and 20% male, with no significant difference between the preclinical and clinical university phases.

Interest in spa medicine (original German term: Kurortmedizin) was first employed with two dichotomous yes-or-no questions. The first inquired whether the respondent would like to learn more about the topic of spa medicine, with the answer options being "yes" and "no." The second question asked whether the respondent considered prevention to be important to them personally, with the same two answer options.

The questionnaire also included questions pertaining to personal health behaviours. The section on health behaviours comprised five behaviours typically employed in spa medicine (thermal baths, sauna, Kneipp therapy, healthy nutrition and Nordic walking) and five less directly related health behaviours (jogging, mountain biking, meditation, relaxation techniques and walking).

Attitudes towards cure (German: „Kur“, spa or health resort treatment) and spa medicine („Kurortmedizin“) were then evaluated on a visual analogue scale, with scores ranging from 0 („totally disagree) to 100 („Agree totally“). Four statements were posed to the respondents: (1) "A cure is trendy." (2) "Spa medicine' sounds old-fashioned'. (3) "Spa medicine' is an effective medical treatment. (4) "Spa medicine' is up-to-date.

Finally, respondents were asked to indicate whether they possessed specialised knowledge in this area by selecting either "yes" or "no." The questions were as follows:

1. Is a cure the same as rehabilitation? (no).
2. In Germany, are all people with health insurance entitled to a cure at the expense of the health insurance fund? (Yes in Germany).

3. Results

A total of 72% of students indicated 'I would like to learn more about the topic of spa medicine during my studies'. 'Prevention is important to me personally' was affirmed by 98% of participants.

Table 1 depicts the health-related behaviours of the students in the sample. The highest proportion of medical students were found to engage in walking in the fresh air and healthy nutrition. Approximately a third of the students attend classes or practise sauna. Kneipp medicine, which is an world cultural heritage in Germany, is practised by 13% of students.

%	% this study	Approx.% In German population	literature
Health behaviours related to Spa medicine / health resort medicine			
Thermal bath / mineral bath	32,6	32	[23]
Sauna	32,6	31	[24]
Kneipp Medicine (e.g. cold water, dew walking, alternating showers, ...)	13	21	[25]
Healthy nutrition	89,1	69	[26]
Nordic walking	6,5	10	[27]
<i>% with at least one mention</i>	89,1		
Other health behaviours			
Mountainbiking	17,8	19	[29]
Meditation	28,3	48	[30]
Jogging	63	27	[31]
Relaxation techniques	52,2	20	[32]
Walking in fresh air	91,3	56	[23]
<i>% with at least one mention</i>	90		

Table 1. Health behaviours of the 53 participants in the sample, expressed as a percentage of participants who reported engaging in the behaviour in question. The data in the right-hand column represent estimated figures for the German general population derived from survey studies, which are reported in the right column. In the case of surveys reporting amounts in millions, it was assumed that the population size in Germany was 83.8 million

%	not at all	disagree somewhat	neutral	agree somewhat	agree totally
I think about a certain spa town	13,2	18,9	9,4	39,6	18,9
I think about anabolics and gyms	77,4	13,2	5,7	3,8	-
I think about the elderly	3,8	21,2	15,4	51,9	7,7
I think about overweight people	26,9	46,2	9,6	17,3	-
Cure =euphemism for psychiatric ward	76,9	11,5	7,7	3,8	34,5
I think about my personal mental wellbeing		1,7	13,8	39,7	34,5

Table 2. Assoziations with „cure“ („Kur“) and “spa medicine” in the sample. „When I think about cure/spa medicine....“ (% of respondents)

Table 2 shows the answers to the questions on associations with the German terms 'Kur' (cure) and 'Kurortmedizin' (Spa medicine).

Attitudes towards Kur resulted in a mean value of 45.2 (standard deviation 27.8) for the item 'a cure is trendy' and 54.9 (standard deviation 27.0) for 'a cure is up-to-date'. Male students rated a spa medicine significantly more as "up to date" (mean 70.6 (SD 24.1)) vs 50.3 (SD 26.5) for female subjects), $p=0.042$; ANOVA), while the values for 'a spa is trendy' were similar for both genders. The study section (preclinical versus clinical) had no significant influence. Figure 1 shows the histogram for the values of the sample.

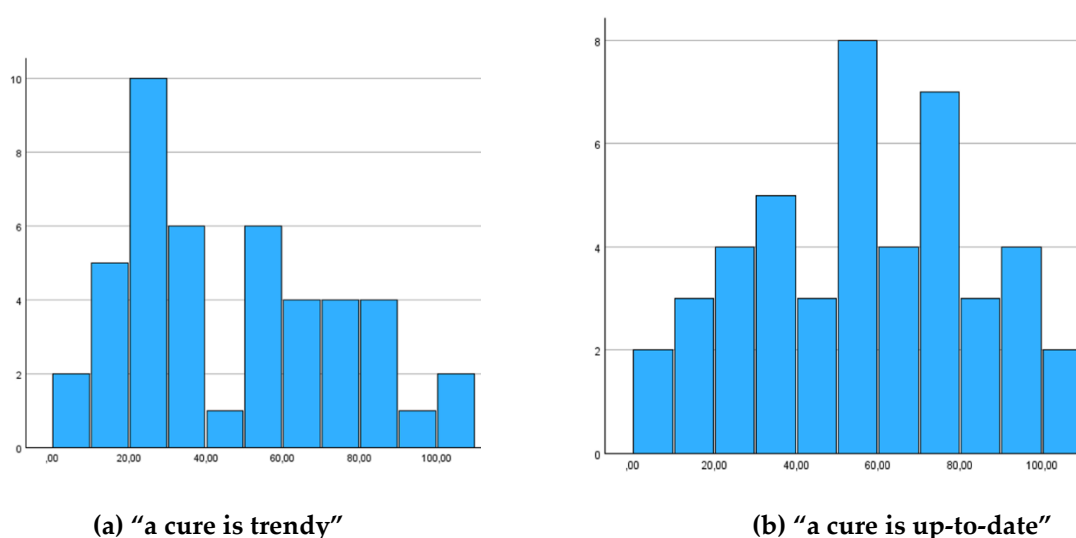


Figure 1. Histograms for the attitude towards the term 'cure' in the statements (a) 'a cure is trendy' and (b) 'a cure is up-to-date'. A visual analogue scale was used with '0' corresponding to 'do not agree at all' to 100 'fully agree'. mean value of 45.2 (standard deviation 27.8) for (a) 'a Kur is trendy' and 54.9 (standard deviation 27.0) for (b) 'a Kur is up-to-date'

Attitudes towards spa medicine showed mean values of 57.8 (SD: 33) for 'Spa medicine sounds old-fashioned' and 72.3 (SD: 20.5) for 'A spa is an effective medical treatment for me'. There were no significant relationships with study phase and gender. Figure 2 shows the histogram for the values of the sample.

The data for the statements 'a spa treatment is trendy' (asymptotic significance kolmogorov-smirnov $p=0.20$) and 'a spa treatment is effective' (asymptotic significance kolmogorov-smirnov $p=0.20$) exhibited a normal distribution in the sample.

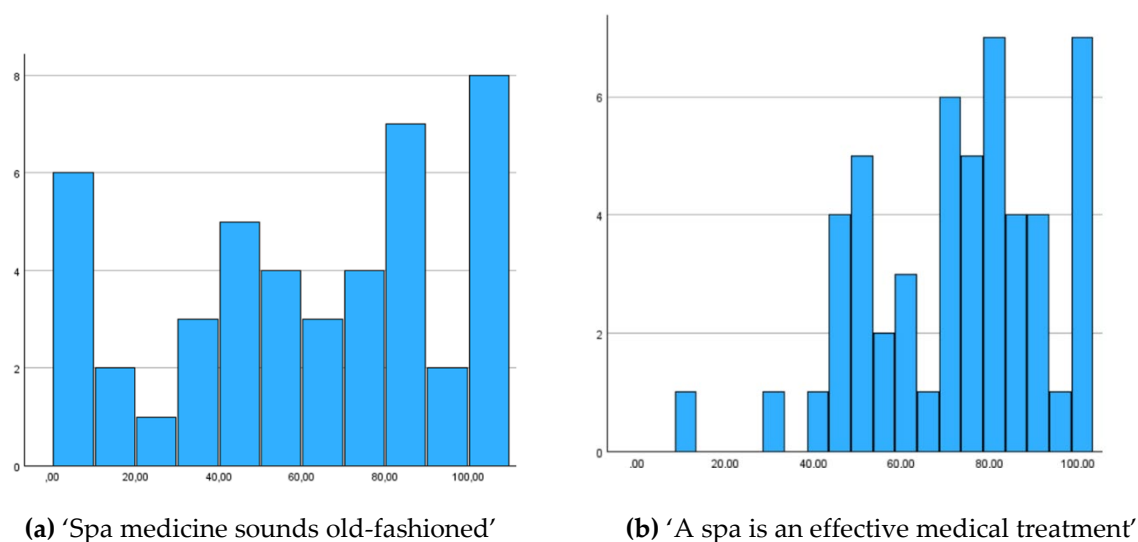


Figure 2. Histograms for the attitude towards Spa Medicine. A visual analogue scale was used with '0' corresponding to 'do not agree at all' to 100 'fully agree'.

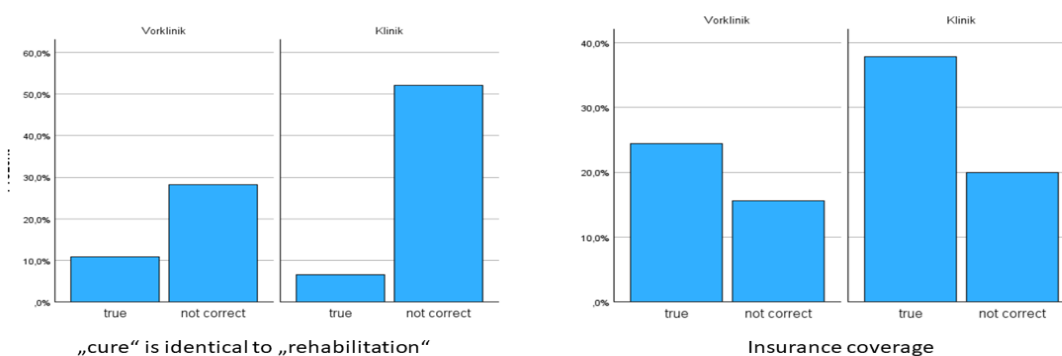


Figure 3. Answers to the knowledge questions broken down by study section (preclinical versus clinical study phase).

Figure 3 shows the answers to the knowledge questions broken down by study section. 75.5% of the sample answered correctly that a cure is not the same as rehabilitation treatment. There was a significant difference between pre-clinical and clinical students (Pearson Chi square 6.1; $p=0.047$). 64.6% responded correctly that in Germany they are entitled to cost coverage by health insurance, with no significant difference between the groups (Pearson Chi square 0.6; $p=0.723$).

4. Discussion

We analysed the image and attitudes of medical students at a university in southern Germany towards spa and health resort medicine. The medical students showed a high level of interest in spa medicine. More than 70% agreed upon interest to learn more about spa medicine during their studies. This was true for both genders and did not depend on semester levels. However, as expected, there were remarkable differences between the participants.

Spa medicine is clearly attributed as effective (Figure 2b), but the attributions as to whether it sounds modern (Figure 2a) or even trendy (Figure 1a) are much more heterogeneous. Both in terms of their interest and their own behaviour (Table 1), the

attitudes of the study tend to reflect an image of spa medicine that is comparable to that of the general population, rather than medical students dismissing spa medicine as 'unmedical', ineffective or therefore uninteresting. This attitude may further legitimise efforts to promote the role of medical hydrology and spa medicine in student education [18, 33, 34].

As previously stated in the introduction, a limited number of studies have been conducted to examine the attitudes of medical students towards spa medicine. In a study of 212 German medical students, Reitz [35] similarly identified a predominantly positive image of spa medicine, with no significant differences observed in comparison to conventional rehabilitation outside of health resorts. Münstedt and colleagues [36] conducted a study to analyse attitudes towards predominantly complementary medical therapies among 217 medical students and an equally large group of doctors. In comparison to numerous complementary medical procedures, hydrotherapy was met with significantly less rejection from both students and doctors, with their own expertise in hydrotherapy being rated comparatively highly. The study, therefore, also indicates a favourable perception of spa medicine procedures. Falkenbach and colleagues [37, 38] employed a similar approach with German medical students, with the objective of prospectively enhancing the attitudes of medical students towards spa medicine. The students were asked to evaluate the perceived effectiveness and positive image of spa medicine both before and after a one-day [37] or five-day [38] excursion to a health resort as part of their medical studies. The excursions demonstrated a clear positive effect, which was however dependent on the health resort [37]. The authors recommend that such excursions be incorporated into the curriculum during the course of the medical degree programme, as their data indicate that this would have an outstandingly positive impact on the students' learning experience. Currently, spa medicine is taught as part of the "cross-sectional Querschnittsbereich 12"[39].

In a recent review of the factors influencing medical students' career choices, Querido and colleagues [9] identified several key considerations. It is evident that a significant proportion of medical students can be influenced during these study phases. The results of our study indicate that, at least in a subgroup of the sample, two such key predictors, namely perceived attractiveness and personal preference, exhibited satisfactory values. It is also noteworthy that the speciality of balneology performs well in other predictors not investigated in this study, including quality of life at the place of work, work-life balance, positive attitude towards patients and workload[9]. According to Querido's model, however, the factors of personal perception of the speciality in the curriculum and personal experience play a role. An investigation of these factors would represent an interesting area for future studies. It may be beneficial to emphasise the positive characteristics of spa medicine, such as a comparatively stress-free working environment, proximity to nature and favourable characteristics in relation to stress, to students.

We are aware of several relevant limitations of our study. The sample size was limited and exclusively comprised German medical students. It would be beneficial to have comparative data from other European and non-European countries. The study focused on the perceived attractiveness of spa medicine. As previously stated, this is only one of several factors that influence career choices, therefore further research must replicate our results. In this study, we opted for a compact questionnaire; however, many other influencing factors were not considered. Aspects of attractiveness should be investigated in more detail in future studies. Longitudinal studies or studies in other cultural groups would also be beneficial

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