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## Diagnostically fit for the future? The students' perspective.

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### Abstract

**Objectives:** Medical students training incorporates learning how to take a medical history with an increasing focus on professional bedside manner and communication training. This study examined students' evaluation of the communication training classes at the Medical University of Vienna.

**Methods:** A survey based on a self-administered questionnaire with 16 questions about five main categories: social skills and communication, demeanour, expertise, ability to combine communicative and expert skills/knowledge was sent to students in their third, fourth, fifth and sixth academic year.

**Results:** The majority of students rated the communication classes positively, especially, they felt their communicative and social skills improved much. However, large deficits were pointed out in the transfer of expertise and the lack of improvement in the ability to combine communicative and expert skills/knowledge.

**Conclusions:** This data indicates the need for re-evaluation of the training of social and communicative skills at medical universities, especially we propose the integration of field specific history taking and communication frameworks.

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**Keywords:** Medical history taking, communicative training, medical students, physician-patient-communication, communicative skills, social skills.

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## 1. Introduction

A physician takes 120.000 to 180.000 medical histories on average through the course of his career (Lipkin 1995). Taking a medical history is a crucial skill, as during initial patient contact up to 76% percent of diagnosis have been shown to be made (Peterson et al. 1992). Literatures show that there is a correlation between quality of physicians' communication with the patient and patients' satisfaction (Van Dulmen et al. 1997; Goehuys 1998; Mallinger et al. 2005; Wilkinson et al. 2008; Venetis et al. 2009) and adherence to advices and prescriptions (Bultman, Svarstad 2000) the prevention of somatic fixation (Verhaak, Tjihuis 1994) and diminishing of incorrect medical treatments (Chen et al. 2008) or malpractice suits (Levinson et al. 1997; Tamblyn et al. 2007). Furthermore good and patient centred communication has an impact on the level of psychological distress and improvement of patients' health and functional status (Stewart et al. 2000; Kaplan et al. 1989; Chassany et al. 2006; Del Canale et al. 2012) and prevent of physicians' burnout (Graham et al. 1976; Travado et al. 2005).

Training these skills was historically taught implicitly, and were not automatically part of medical education curricula and even clinical training until more recent years (Kurtz 2009). They can and should however be taught and improved upon (Langewitz et al. 1998). Expert consensus currently advocates communication training as a core element of medical education (Makoul 2001).

The Medical University of Vienna (MUV) saw recent widespread curricular restructuring, especially in bedside teaching and communication training (Merl et al. 2000). During the second and third year students use roleplaying situations in group seminars, called *Ärztliche Gesprächsführung A und B* (ÄGF A and ÄGF B), to learn and practice general medical history taking. The goal is to learn to take a complete and well-structured anamnesis in an empathic and patient-centred way. During the fourth year, training focuses (ÄGF C) on challenges in communicating with patients in a psychiatric setting. Front lectures and textbooks provide background. Afterwards group seminars with simulated patient contact require students to successfully take mental states. The main aim is to learn to integrate theoretical knowledge in the communication and to manage the special setting with psychiatric patients.

In this study we want to evaluate the classes at MUV for communicative skills ÄGF A,B and C by asking the students after successful participation of them. In detail we want to find out whether, in the students' opinion, the given aims of each class can be achieved.

## 2. Method

For this study a self-administered questionnaire was developed. The statements given in the questionnaire were rated on a Likert-scale of -2 to 2, where -2 is "disagree strongly" and 2 is "agree strongly" or a scale of Grade A [1 - Very good], Grade B [2 - Good], Grade C [3 - Satisfactory], Grade D [4 - Sufficient] Grade E [5 - Insufficient].

The questionnaire included 14 questions about each ÄGF A/B and ÄGF C classified in 5 main categories (see Table 1). Furthermore two additional questions about ÄGF-C were asked.

Table 1.: Questionnaire with five main categories.

1.In General
In general, I liked ÄGF A/B or C.
2.Social Skills and Communication
Due to ÄGF A/B or C I learnt
to act in an ethically correct way.
to act in a polite way.
to act in an empathetic way
to allow the patient sufficient time.
to show interest in the patient.

to build a basis of trust.  
 to adapt to each patient, and different levels of understanding.  
 to handle difficult situations (e.g. aggressive behaviour).

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### 3. Demeanour

Due to ÄGF A/B or C I learnt  
 to embody the role as physician well

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### 4. Expertise

Due to ÄGF A/B or C I learnt  
 to make a complete anamnesis  
 to structure well and perform a target-orientated anamnesis  
 to integrate interdisciplinary knowledge during medical history taking  
 to take medical history in special settings (e.g. an emergency, with children)

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### 5. Ability to combine communicative and expert skills/knowledge

Due to ÄGF A/B or C I learnt to combine my social and communicative skills with my theoretical knowledge.

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Students (n=3014, range: 744-763 per study year) of the MUV were contacted by email and provided with a link to the online questionnaire with a concise unbiased explanation of the survey topic. The questionnaire was kept anonymous to maintain confidentiality of the participants. It was approved by data protection commission. Only third, fourth, fifth and final year medical students were included in this study.

#### 2.1. Aim

Students assessment of ÄGF A/B and ÄGF C were determined. Median values from the 5 categories expertise and ability to combine communicative and the respective sub-items with best and worst value were calculated. Any correlations and influence of age and sex between median values were examined.

#### 2.2. Statistics

The mean value, standard deviation (SD) and variance ( $\sigma$ ) were computed in the five categories. A two-tailed paired t-test was conducted to calculate the probability level (p-value) to see a potential difference of the median given value at ÄGF A/B and C. If the result was significant, the test value (t), degree of freedom (df) and the p-value were given.

Spearman's correlation coefficient was used to measure the strength of the association between age and median given value at the 5 main categories.

As standard (in social science) we assumed a correlation coefficient of r 0-0.2 for a very weak, 0.2-0.4 for a medium, 0.4-0.7 for a strong and above 0.7 for a very strong correlation.

To explore the influence of gender, a t-test was conducted.

A 5% level of significance was used for all tests and the analysis was performed using IBM SPSS Statistics for Windows version 20.0.

### 3. Results

A total of  $n=243$  medical students participated in the study (response rate: 8.63%). The age of the participants ranged from 20 to 42 years (mean: 24-25 years). 56.7% (139) of the participants were females, 42.3% (104) male.

The majority of participants (52.5% and 57.5%) evaluated ÄGF A/B as “Very good” or “Good”. ÄGF A/B (mean: 2.3) was rated a little bit worse than ÄGF C (mean: 2.2).

The mean given value for the aspect Social Skills and Communication at ÄGF A/B was 0.91 ( $SD=0.91$ ,  $\sigma=0.83$ ) and at ÄGF C 0.5 ( $SD=0.97$ ,  $\sigma=0.95$ ). A very significant difference could be shown ( $t=7.66$ ,  $df=243$ ,  $p<0.0001$ ). The worst rated item in both ÄGF A/B and ÄGF C was “I learnt to act in an ethically correct way”, the best in ÄGF A/B “I learnt to act in a polite way” and in ÄGF C “I learnt to act in an empathetic way”.

The mean given value for the aspect Demeanour at ÄGF A/B was 0.23 ( $SD=1.13$ ,  $\sigma=1.11$ ) and at ÄGF C 0.13 ( $SD=1.18$ ,  $\sigma=1.38$ ). No significant difference could be shown ( $p=1.71$ ).

The mean given value for the aspect Expertise at ÄGF A/B was -0.0395 ( $SD=0.98$ ,  $\sigma=0.92$ ) and at ÄGF C 0.11 ( $SD=1.07$ ,  $\sigma=1.15$ ). A significant difference could be shown ( $t=-2.12$ ,  $df=176$ ,  $p=0.035$ ). The worst rated item in ÄGF C was “I learnt to make a complete anamnesis” and the best “I learnt to take medical history in special settings (e.g. an emergency, with children)”.

The mean given value for the aspect Ability to combine communicative and expert skills/knowledge at ÄGF A/B was 0.22 ( $SD=1.12413$ ,  $\sigma=1.25$ ) and at ÄGF C 0.37 ( $SD=1.14$ ,  $\sigma=1.3$ ). No significant difference could be shown ( $p=0.062$ ).

The median values of the 5 categories were not influenced by age or gender.

The majority (57.2%) of the questioned students appreciated the concept of ÄGF C in which expertise and communicative skills were taught together. 70.4% even want more classes like that in the future.

### 4. Discussion

On the one hand, the results of our study are pleasant, because ÄGF A, B and C were rated positively by the students. They stated that in ÄGF A/B they learn more communicative and social skills than in ÄGF C and more to integrate expertise in ÄGF C than in ÄGF A/B. This is in accordance to the planned goals of each seminar.

However, the results also point out some deficits. The worst rated category in both ÄGF A/B and ÄGF C was expertise. Furthermore students did not feel better taught in ÄGF C compared to ÄGF A/B to combine communicative and expert skills/knowledge which ought to be one of the main aims.

Following these results, we were examining the performance of students of the MUV during taking medical history within the framework of two studies (Seitz et al. 2015a; Seitz et al. 2015b). In the first one we performed structured interviews with supervising physicians at ten hospitals in Vienna and the surrounding area with subsequent qualitative content analysis. 70% criticize the students “lack of structure and incompleteness”, whereby 70% of them believe the reason for this may be insufficient knowledge of specific disease, therefore not knowing which questions are important to ask. Some even claim that the students are not able to sufficiently integrate and apply knowledge of social and communication protocols and of the specific disease during history taking. In the second one, students were asked to self-evaluate their communicative skills: They estimated their social and communicative skills as sufficient but felt not ready to integrate the theoretical knowledge or taking a medical history in special settings, for example with children or patients with psychic problems. The data of these two studies showed clearly the presence of deficits in the students’ ability to integrate theoretical knowledge.

We propose that the integration of medical field-specific communication courses at university leads to a transfer from students’ declarative to associative and procedural knowledge. For example, the training might start with the transmission of declarative knowledge with frontal lectures, group seminars and textbooks, followed by e-learning programs and simulated patient contact. Similar case-based blended learning (CBBL) paradigms (Turk et al. 2015, Wadowsky et al 2015) have shown not only high acceptance at the students, especially due to the high flexibility (Seitz et al, 2015c), but also an increased transfer from declarative to procedural knowledge, which may enable students to integrate and apply high standards of disease specific social and communication protocols during history taking. Regular progress tests should give the student feedback about his/her progress and possible deficits and motivate.

In this study we could demonstrate the need to rework the curricula, especially we recommend the integration of field specific history taking and communication frameworks as, we could show in this study, is wished by majority of the students.

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