Career support in medicine: experiences with a mentoring program for junior physicians at a university hospital

Nachwuchsförderung in der Medizin: Erfahrungen mit einem Mentoring-Programm für Ärztinnen und Ärzte an einem Universitätsklinikum

Abstract

Purpose: Until now, mentoring has hardly been used by the medical profession in German-speaking countries as a means of supporting junior physicians in their careers. The aim of the mentoring project described here was to obtain information for promoting and developing future mentoring programs at a university hospital.

Method: A new integrated mentoring model was developed and implemented over a 12-month period. Peer groups were advised on the mentoring process by mentors and program managers. A total of eight mentoring groups (40 peers) from four departments of a university hospital took part in the project: four voluntarily, and four on a compulsory basis. The evaluation was carried out using qualitative methods for analysis of the group protocols and the focus group interviews with the participants.

Results: Group discussions revealed that individual mentees, young female physicians in particular, developed concrete career plans and initiated further career-relevant steps. Some mentees - again more women than men - were promoted to senior physician posts. Further measurable career steps were increased research and publishing activity, and research fellowships abroad. The group process developed in five typical phases (forming, storming, norming, performing, and finalizing), which differed according to whether the groups had been formed on a voluntary or compulsory basis. In the evaluation interviews, mentees emphasized the following as effective mentoring factors: Concrete definition of own career goals; exchange of experiences within the peer groups; support and motivation from the mentors; and fostering of the group process by the program managers.

Conclusion: Participation in mentoring programs has to be voluntary. Mentees are motivated, autonomous, goal-oriented and prepared to take action. Mentors serve as examples and advisers. They derive satisfaction from being held in high esteem, as well as from the advancement of their own careers. Program managers have experience in systems theory and group dynamics, structure the group processes, and evaluate the quality of the results. Hospital management should regard mentoring as a business strategy and a means of staff development and quality management, and provide the necessary resources. The mentoring program presented here is being extended to other departments of the hospital on the basis of the positive experiences it has offered.

Zusammenfassung

Zielsetzung: Mentoring als Instrument zur Nachwuchsförderung von ÄrztInnen wird in der Medizin in deutschsprachigen Ländern bisher kaum eingesetzt. Das dargestellte Mentoring-Projekt ist Bestandteil gezielter Fördermassnahmen zur „Gleichberechtigten Nachwuchsförderung von Ärztinnen und Ärzten“ an einem Universitätsklinikum. Ziel war,
Informationen für die Weiterentwicklung und Professionalisierung künftiger Mentoring-Programme zu erhalten.

**Methodik:** Es wurde ein neues integriertes Mentoring-Modell entwickelt und während einer 12monatigen Laufzeit erprobt. Die Peer-Gruppen wurden im Mentoring-Prozess von MentorInnen und Programm-ManagerInnen beraten und in der Umsetzung von Karriereschritten konkret unterstützt. Insgesamt nahmen 8 Mentoring Gruppen (40 Peers) von 4 Departementen eines Universitätsklinikums am Projekt teil: vier Gruppen auf freiwilliger, vier auf obligatorischer Basis. Die Evaluation erfolgte mittels qualitativer Analysen der Gruppenprotokolle und Fokusgruppen-Interviews mit den Teilnehmenden.

**Ergebnisse:** Die Gruppendiskussionen zeigten, dass die einzelnen Mentees, besonders die jungen Ärztinnen, konkrete Karrierepläne entwickelten und weitere Karriereschritte initiierten. Einige Mentees, wiederum mehr Frauen als Männer, wurden zu OberärztInnen befördert. Weitere messbare Karriereschritte waren: Zusatzqualifikationen, speditivere Weiterbildung, Steigerung der Forschungs- und Publikationsaktivitäten sowie Forschungsaufenthalte im Ausland. Der Gruppenprozess entwickelte sich in fünf Phasen („forming“, „storming“, „norming“, „performing“ und „finalizing“), welche unterschiedlich verliefen je nachdem, ob sich die Gruppen auf freiwilliger oder obligatorischer Basis formiert hatten. In den Evaluationsinterviews nannten die Mentees als Wirkfaktoren des Mentoring: Konkretisierung eigener Karriereziele, Erfahrungsaustausch innerhalb der Peer-Gruppen, Unterstützung und Motivierung durch die MentorInnen, Strukturierung des Gruppenprozesses durch die Programm-ManagerInnen.

**Schlussfolgerung:** Die Teilnahme an Mentoring-Programmen muss auf freiwilliger Basis erfolgen. Die Mentees sollten motiviert, eigenverantwortlich, zielorientiert und handlungsbereit sein. MentorInnen dienen als Vorbild und BeraterInnen. Sie erhalten Gratifikation durch Wertschätzung und Förderung ihrer eigenen Karriere. Die Programm-ManagerInnen haben Erfahrungen in Systemtheorie und Gruppendynamik, strukturieren die Gruppenprozesse und evaluieren die Ergebnisqualität. Klinikleitungen betrachten Mentoring als Unternehmensstrategie und Instrument zur Personalentwicklung und des Qualitätsmanagements. Sie stellen die erforderlichen Ressourcen bereit. Das vorgestellte Mentoring-Programm wird auf Grund der positiven Erfahrungen auf weitere interessierte Kliniken ausgeweitet.

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**Introduction**

Mentoring was developed in the USA in the 1970s in large private-sector corporations as a means of supporting junior staff [1]. Since the 1990s, mentoring programs have been introduced as a means of providing academic support to junior staff in the medical profession [2], [3], [4], [5], [6]. Women in particular benefit from structured mentoring programs for their scientific careers, in that the programs provide them with easier access to professional networks [2], [7], [8], [9]. Most recently, mentoring programs have been created in individual countries especially for female physicians [10], [11], [12], [13]. To our knowledge, the mentoring programs in German-speaking countries are for medical students only [14]. The majority of papers published to date on mentoring programs in medicine are progress reports. There is a lack of descriptions of actual programs, and only a few of them have been evaluated, in a rudimentary fashion at that [5], [6], [8], [15].

A stocktaking exercise regarding the support of academic junior staff was carried out at the University Hospital Zurich in the year 2000 with a study entitled Gleichberechtigte Nachwuchsförderung von Ärztinnen und Ärzten (“Equal entitlement of female and male physicians to junior staff support”) [16]. It turned out that career support in the individual clinics and institutes was not institutionalized and was less transparent, and that female physicians received fewer career offers than their male colleagues. As a consequence of the stocktaking, in 2001 the hospital management assigned the authors the task of creating a mentoring program for junior physicians of both sexes, and testing its acceptance and efficacy over a 12-month pilot phase.

**Definition of terms and forms of mentoring**

The terms "mentor" and "mentoring" are derived from Greek mythology. During a fairly long period of absence,
Odysseus entrusted his friend Mentor with the instruction and support of his son Telemachos. Mentoring represents the structured promotion of individuals within a professional group with the aim of optimally supporting their professional careers as well as their personal development. Mentoring group discussions should focus on the following subject areas:

- Providing information on career opportunities;
- Development of career ideas and plans;
- Focusing on career goals;
- Implementing career steps;
- Evaluating career successes [17].

There are different mentoring models for career support: on the one hand, the dyadic mentor-mentee model, in which an experienced specialist (mentor) e.g. advises and supports individual junior physicians (mentees) with respect to their professional careers; on the other hand, the peer-mentoring model, in which junior physicians (peers) mutually support each other in their career endeavors. Experience with both models has shown that in medicine, especially in large and complex systems such as university clinics, a combination of these two model approaches is advantageous: each peer group chooses a mentor, and each mentor-mentee system is also accompanied and advised in the mentoring process by a program manager (Figure 1).

**Figure 1: Organizational structure of the mentoring program**

Mentoring Program at the University Hospital Zurich

A mentoring project with the structures outlined in Figure 1 was launched by the authors at four clinics in early 2002, and evaluated after a running period of 12 months. The aim of the pilot project was to collect experiences for the further development and professionalization of a mentoring program for the entire clinical center. The following issues were examined: (1) What career goals and expectations are held by interested junior physicians in a university clinical center mentoring program? (2) What group processes take place in mentoring groups? Can typical stages be observed in the group process? (3) How do mentees, mentors and clinic directors rate the professional, institutional or personal gain from a mentoring project? and (4) What tips and recommendations can be gleaned from the pilot study for future mentoring programs?

**Methods**

**Study procedure and sample**

Four departments (anesthesiology, OBY/GYN, ENT, radiology) took part in the project. After the clinic director in each case was informed as to the aims of the project, the mentoring program was explained to the physicians at a clinic meeting. Interested members of staff were able to voluntarily form peer groups of approx. 5 junior physicians each. Each group chose a mentor, generally a senior physician in their clinic and their specialty. In addition, they could choose the first author or the last author as program manager of their group. The project as a whole was run by the first author.

Eight mentoring groups were formed with a total of 40 junior physicians, 17 women and 23 men, group size 3-6 mentees, mentored by one mentor each (4 women and 4 men). In one clinic, the director recommended participation in the mentoring program for all junior physicians. In this clinic, four groups were formed with a high proportion of men (15 out of a total of 23 male physicians taking part in the project were in these four groups). This is why men are over-represented in the project as a whole. In each of the other three clinics, more female than male junior physicians were interested in the program: the gender ratio was 4 female physicians to 1 male physician. On average, participants had graduated from medical school 4-5 years previously. The junior physicians met up about once a month in their peer groups, and every two months with their mentor. The program manager was present at all group meetings (peer group and mentor-mentees group) in an advisory capacity. During the course
of the project phase, each group held an average of 8 meetings (range 7-12). The group discussions took place either during the lunch break or in the evening after work in a group space in the clinical center, lasted approx. 90-120 minutes, and were minuted by the program manager in question according to the following roster: group atmosphere, discussion content, goal orientation, concrete steps taken, satisfaction with institutional framework conditions.

Evaluation

Before the start of the project, a voluntary, anonymized questionnaire survey on expectations of the mentoring program and on individual career goals was carried out. Out of the 40 mentees, only 32 (80%) returned a questionnaire that could be evaluated. Eight mentees in the clinic in which all junior physicians took part in the program did not want to fill out a questionnaire. The group process was documented and evaluated by the program managers via the process of "participatory observation" [18] according to action research criteria [19]. In addition, semi-structured group- and individual interviews were carried out after the one-year pilot project concluded. In these, mentees, mentors and clinic directors were meant to express themselves on the following subject areas: experiences in the group discussions, cooperation between peers and mentees, implementation of concrete career steps by mentees, effects of the mentoring project on the clinic.

Methodological Peculiarities

A methodological approach with quantitative pre- and post-testing and a control group did not appear suitable for understanding and examining the group processes, deemed to be of central importance. A control design is unfeasible in the case of a mentoring program, since participation is voluntary and there is no standardized program as in the case of a specialist graduate studies curriculum. A further peculiarity of the pilot project was that the program manager was both group leader and participating observer in terms of process research [18]. Sociopsychological literature contains various phase models developed for different groups (learning, training, therapy or self-discovery groups). The 5-phase model described by Wellhöfer [20] (forming, storming, norming, performing and finalizing) was used by the program managers as a guide to observing and describing the mentoring process.

Statistical Evaluation

The statements on personal career goals and expectations of the mentoring program were descriptively statistically evaluated. The qualitative data (initial and final interviews) were evaluated according to the qualitative content analysis method described by Mayring [21] (paraphrasing and standardizing by means of categories inductively gathered from the material). The minutes of the group were evaluated according to the above-mentioned roster.

Results

Career goals aspired to by the participants

Of the female physicians, 50% wanted to pursue a hospital career; the remaining 50% had not yet decided where to go for their professional career. Of the male physicians, however, only 28% had not yet decided on their aspired career path; 45% wanted to pursue a hospital career and 22% an academic career. Two-thirds of all junior physicians had agreed specialist training goals at their current training clinic; only one-third, however, also received advice on implementing their career goals.

Junior physicians' expectations of the mentoring project

Mentees’ expectations of the mentoring project (Table 1) focused primarily on the concretization of their own career plans and support in implementing their career goals. Importance was also attached to the exchange of experiences with colleagues.

Career goals for the next 12 months

The participating junior physicians were asked to name three career goals they aspired to in the coming 12 months (Table 2). Two-thirds of the mentions referred either to speedier progress or the conclusion of their specialist training. An additional one-third of the career goals mentioned were geared to an advancement-oriented (scientific) career.

Phases in the Group Process

Various typical phases can be observed in the mentoring group process [20]. These are illustrated ideal-typically in Figure 2 and described below.

Initial or orientation phase ("forming"): In this phase, there prevails a degree of uncertainty regarding the goals of the group work and anxiety about exposing oneself by speaking of one’s career fantasies and plans. These anxieties can be alleviated by objective, detailed information on concrete career opportunities (depending on the specialist field and training institution). The mentees are motivated to develop their own career fantasies and take stock of potential obstacles to their realization. This phase proceeded quite differently in the individual groups.

Dispute phase ("storming"): The individual members seek their place in the relationship framework of the group. They express their career fantasies and wishes, and report on difficulties and obstacles to be expected in their realization. Not infrequently, a degree of rivalry for group positions and over individual wishes develops in this phase. In some groups, a "speaker" for the mentees took on the function of organizing the group, or, in the event of desire for institutional changes, of seeking to speak with the Clinic Director. In other groups, a flat peer-group hierarchy prevailed. There was at first uncertainty in all the groups as to the role of the mentor. Particularly in the first few
Table 1: Mentees' Expectations of the Mentoring Project: n = 30 mentions

| Categories                        | Female physicians (n=14) mentions | Male physicians (n=18) Mentions | Total (n=32) mentions |
|-----------------------------------|----------------------------------|--------------------------------|-----------------------|
| Information on career opportunities | 1                                | -                              | 1                     |
| Interest in the mentoring project  | 2                                | 3                              | 5                     |
| Concretizing own career goals      | 7                                | 9                              | 16                    |
| Exchanging experiences with peers  | 5                                | 2                              | 7                     |
| Job-family area of tension         | 1                                | -                              | 1                     |
| **Total**                         | **16**                           | **14**                         | **30**                |

Table 2: Professional goals aspired to in the next 12 months (n = 68 mentions, multiple mentions possible)

| Categories                        | Female physicians (n=14) mentions | Male physicians (n=18) Mentions | Total (n=32) mentions |
|-----------------------------------|----------------------------------|--------------------------------|-----------------------|
| Progress of specialist training   | 9                                | 14                             | 23                    |
| Specialist examination            | 6                                | 6                              | 12                    |
| Dissertation                      | 2                                | 4                              | 6                     |
| Scientific activity               | 9                                | 7                              | 16                    |
| Additional qualification          | 1                                | 2                              | 3                     |
| Career planning                   | 3                                | 3                              | 6                     |
| Commitment to teaching            | -                                | 1                              | 1                     |
| Extraprofessional concerns (Reduction of working hours) | 1 | - | 1 |
| **Total**                         | **31**                           | **37**                         | **68**                |

Figure 2: Phases in the mentoring program
meetings, the mentors were confronted with the expectation that they would eliminate certain institutional difficulties or initiate specific career steps for the mentees. It was necessary to explain that, while the mentor offered professional advice, it behooved individual mentees to use their own initiative and commitment to implement these career advancement steps. 

**Bonding and familiarity phase (“norming”):** The groups reach this phase after about three meetings. Behavioral rules are developed, such as e.g. the commitment to regular participation and the keeping of confidences. This allows an “us” feeling to develop. This basis of trust encourages the mentees to openly bring up their individual career ideas and goals and discuss them in the group. Many junior physicians stated that concrete career planning and support would be useful from around the second year of specialist training, i.e. when the initial difficulties in the specialist field have been put behind them. Mentors are particularly called for in this phase, since on the basis of their own experience they can challenge mentees’ unrealistic ideas and goals, and help concretize achievable seeming goals.

**Differentiation phase (“performing”):** After about 4-5 meetings, an individual career curriculum for a period of 1-2 years is worked out for each mentee. Counseling takes place with regard to concrete career steps such as e.g. drawing up project outlines, applying for research grants, carrying out circumscribed research projects, writing papers, organizing additional specialist qualifications or research fellowships abroad. In the following meetings, participants are questioned very specifically as to the practical implementation of the career steps discussed. In groups where trust develops between the participants, and mentees are actively supported in their career plans by their mentor and clinic director, an atmosphere of creative competition spreads as the mentoring work progresses. Some mentees only became aware of their own career goals through exchanging experiences with their colleagues; in some cases, interest in a scientific job was also sparked. After about six months of joint group work, the peers begin to mentor one another and are less dependent on the mentor’s support, i.e. they deal with the implementation of individual career steps independently and determinedly. A constructive working atmosphere prevails in most groups during the performing phase. At the same time, personal bonds between the mentees, mentor, and program manager are also strengthened.

**Concluding phase (“Finalizing”):** This phase takes highly varied forms in the individual groups. In one group, the mentees had all initiated the aspired-to career steps, were in the implementation phase, and had established their professional network to such an extent that they were able to push ahead with their future careers on their own initiative. For this reason, the group ended its formal group work after one year. The relationships struck up during the course of the mentoring program needed no further institutional framework. Four other groups also ended their group work. Several junior physicians sought a one-to-one mentoring relationship with an experienced specialist colleague. Other participants asked their former program manager to moderate meetings of the junior physicians in their clinic, which virtually organized itself as one big peer group. A further three groups modified the performing phase by taking new members into their group and continuing the formal and institutionalized mentoring work. In the current expansion phase, these three groups form the basis for the establishment of new mentoring groups in other clinics.

**Evaluation of the Group Minutes**

The group meetings were minuted by the program managers according to the following roster: group atmosphere, discussion content, goal orientation, implementation steps, and satisfaction with institutional framework conditions. **Atmosphere:** Here, we observed that, in the four groups from the clinic in which all the junior physicians had been asked to take part in the program, a degree of mistrust vis-à-vis other mentees and the mentor persisted throughout the entire phase. In terms of content, group discussions revolved around the following subjects: opportunities, obstacles, wishes, goals, concrete steps and progressive career successes. In one clinic, mentoring, “prescribed” as compulsory, was seen as an instrument of control, rather than of support. In the other four groups, which had come together on the participants’ own initiative, an atmosphere of trust and mutual personal and professional support developed. Here, individual career plans were to the fore of the discussion, mostly from the onset. **Goal orientation:** During the course of the project, the female mentees in particular became clearer on the career goals they aspired to (50% had initially stated that they were still undecided). Only a few wanted to complete their specialist training as quickly as possible and set up their own practice. Most female physicians aspired to a clinical career in the longer term, in some cases with an additional subspecialty. In any case, three decided to pursue an academic career. The mentoring process had given them the courage to stand by their ambitious career goals and to pursue them with greater determination. Through the support of their (female) mentor, one female and two male mentees decided on a scientific career, and planned stays abroad. In the group discussions, the program managers in particular made sure that individual career plans and goals were pondered on and concretized. **Implementation steps:** Mentees who in the course of the mentoring process became clearer on their career goals and/or pursued an academic career benefited the most from the program. **Satisfaction with institutional framework conditions:** The clearest differences between the individual groups were revealed here. It was only through the group discussions that the structural shortcomings in their individual clinics became really clear to both mentees and mentors: above all, these were a lack of rotation planning for the specialist training curriculum, or too little opportunity and time for research activity. In the clinics where support of junior staff was an important
Evaluation of the Pilot Project from the Participants' Viewpoint

Of the 40 participating junior physicians, 6 left their institution during the course of the project, thereby resigning early from their respective mentoring groups.

Measurable career steps of the mentees

The following concrete career steps were achieved by the 17 female mentees: Promotion to senior physician (1); Job rotation to another university clinic, in order to specialize further there (1); Promise of a senior physician position in a subspecialty after completion of specialist training (1); Completion of various papers for publication (5); Initiation of research projects (5); Rotation to a research post (1); two-year scholarship for a research stay in the USA (1). Of the 20 male mentees, one received a research grant for a rather large research project (1); others were invited to give lectures (2) and completed papers after a research year (2).

Evaluation of the pilot project from the participants' viewpoint

For the evaluation of the project, focus-group interviews were carried out in the eight peer groups with all mentees who were still taking part at the end of the pilot phase (a total of 34), as well as in the group of eight mentors.

In the overall assessment of the mentoring program, the mentees most frequently mentioned the concretizing of their own career goals, as well as the promotion of personal initiative and determination. In addition, exchanging experiences with peers was an important and stimulating experience. Several also mentioned the boosting of self-confidence. In the evaluation of group discussions, peer loyalty, solidarity, and above all, mutual mentoring were described as the three most influential factors. Some groups experienced the trust and openness as positive; in others, fear of being left out of the charmed circle of the group was also expressed. As regards experience with the mentors, the support of concrete career steps was the most important factor, followed by the mentor's role-model function. The commitment of the mentors earned different ratings. Some rather wished for a stronger commitment; mentors who were themselves active in research were rated as especially committed. In the rating of the program manager, counseling vis-à-vis concrete career steps and the structuring of the group discussions were mentioned as the most important elements, followed by motivation and the creation of an atmosphere of trust. The challenge to one's personal initiative was also valued; a number might even have wished for more stress to have been laid on this.

Evaluation from the mentors' viewpoint: The mentors were sensitized to the career concerns of their junior physicians, and benefited from the exchange among themselves as to how younger colleagues could be supported. A few were inspired to reflect on their own career plans and goals. The mentors moreover appreciated that they themselves were predominantly responsible for professional advice, and the program manager for structuring the group discussions.

Evaluation from the clinic directors' viewpoint: The first author conducted personal interviews with the directors of the participating clinics. They rated the project as positive throughout. The mentoring group activities meant that the subject of career advancement was discussed more intensively in the clinics. Mentees sought to speak with the clinic director at an earlier stage in their careers. They particularly wanted early information on career opportunities open to them after qualifying as specialists, and obtained advice and support with regard to further career steps. The clinic directors also viewed this proactive professional commitment as useful for medium-term job planning in their clinic.

Discussion

Framework conditions: These were beneficial for the project to the extent that their implementation was supported and financed by the hospital management. For the mentoring groups, four clinics were chosen whose directors were interested in the project and motivated their staff to apply for the peer groups and as mentors. According to our experience, a positive attitude and willingness to finance the program are vital requirements for a mentoring project.

Below, we first discuss the issue what career goals are held by the participating junior physicians, dependent on gender. In a second step, we point out the differences of the group processes with regard of whether the peer groups have formed voluntarily or on a compulsory basis. Thirdly the evaluation of the program is addressed. Finally, recommendations for implementing mentoring programs in large clinics are formulated.

Career goals aspired to: While most of the male trainees were already clear on their career goals such as their own practice, subspecialization, and a clinical and/or academic career, the career ideas and goals of half of the female mentees were not particularly developed or concrete. As a consequence, most of the male physicians had also already planned, and in some cases initiated, further career steps. In the discussions at the beginning of the mentoring process, young female physicians in particular showed a high degree of ambivalence toward the pursuit of a career. This phenomenon has already been observed and described by Buddeberg et al. [22] in focus-group interviews with medical school graduates. Female physicians stated that the reason for delaying their decision was that the pursuit of an advancement-oriented career under the present general structural conditions would have far-reaching consequences for them in the personal realm (missing out on having a live-in partner/husband and family). This interdependence of career and domestic circumstances has been examined in several studies [23], [24]. For female physicians, the very wish to perhaps
start a family in future acts as an internal career barrier [25].

**Group processes in mentoring:** The described group-process phases are ideal-typical [20]. Nevertheless, they are a useful guide for mentors and program managers. If the progress of a group process differs too greatly from the described phases, mentors and program managers should look for possible causes. In the eight mentoring groups taking part in the program, discussions in the four "compulsorily" established groups differed sharply from the group processes in the four voluntarily formed groups. Even in phase 1, "forming", although information on possible career paths was discussed, individual career plans were expressed only hesitantly. In phase 2, "storming", mentees confronted mentors primarily with expectations vis-à-vis structural changes, and the discussion did not touch on opportunities for implementing individual career steps. Consequently, no group trust developed either ("norming"). Since no career steps were planned, there could be no further support of their implementation through the mentoring process ("performing"). The initial conditions militating against the mentoring process were discussed with the clinic director, the mentors, and the mentees. An important realization was that mentoring can only be implemented voluntarily, and is not equally useful for all trainees. The processes in the other four groups differed inter alia in that detailed discussions were held on how many mentees wished to aspire to an academic or demanding clinical career. In these groups, both peer mentoring and the concrete support of the mentee by the mentor assumed a greater importance. Three groups whose participants took decisive steps in pursuit of their careers also continued their work after the conclusion of the pilot phase. This phenomenon of "the more successful the mentees with respect to their careers, the more consistently and long-term they want to continue the mentoring program", is also described by other authors [26].

Further knowledge gained from the group processes is as follows: Program managers must be trained and experienced in group psychology and group management. Mentors should be trained for their task before taking on a mentorship role [11]. This was not the case in our project. Mentors acquired the basic elements of group dynamics and important aspects of their specific mentoring function indirectly through the guidance and example of the program manager.

**Evaluation of the project from the participants' viewpoint:** The exchange of experiences among the mentees, and above all the professional and personal advice of an older, experienced mentor helped individuals think concretely about their own career goals and to take first steps even while pursuing their specialty training. These expectations, expressed at the beginning of the project, were fulfilled in all the groups. In conjunction with the mentoring activities, some mentees were able to complete their specialist training more quickly, or achieve important steps with regard to their careers in the institution (senior physician posts) or their scientific qualification (resources for research projects and research stays). As described by other authors [2], [3], [4], [6], [7], [8], female mentees benefited more from the mentoring with regard to their careers than their male counterparts. This was particularly the case with three female trainees who already had a firm scientific grounding, but had never admitted openly to themselves that they aspired to an academic career. For this reason, they also hesitated to discuss their plans with the clinic director. Encouraged by the clarification they achieved in their mentoring group, they were able to take the necessary steps. It was an important experience for them to be supported in their career efforts by their female and male colleagues, rather than branded as "careerists" and excluded.

The mentors also benefited. They gained important experience in supporting junior physicians, which they were also able to list as "credit points" in their achievement record [27]. Some of the mentors included mentees in their research group, thus initiating a cooperative venture extending beyond the project [28].

The clinic directors also perceived positive effects of the mentoring project. They recognized that organized, well-trained junior physicians work with greater motivation, that they will probably remain with the institution for a longer period, and that the "investment" in the career of a junior physician is therefore a worthwhile one. As we proved in a survey of clinic directors in German-speaking Switzerland [29], support of junior staff is often informal and unstructured, and then frequently shows no lasting effect. It was therefore important to the clinic directors to realize that mentoring activities do not "deprive" them of their own job of supporting junior staff; to the contrary, the participating mentees turn to the clinic directors earlier on, and with concrete questions. In summary, we can say that formal mentoring can be an important component in the support of junior staff, and should be offered in a clinical center in addition to other career-support endeavors.

**Conclusions**

**Recommendations for Mentoring Programs at Large Clinics**

What conclusions can be drawn from the pilot project for future mentoring programs? As we have partly learned from other authors [5], [8], but particularly from our own experience, the success of mentoring programs is dependent on certain conditions (Figure 3):

**Institutional framework conditions:** Commitment, i.e. that a clinical center recognizes mentoring as an essential component of its corporate strategy and regards it as a criterion for staff development and quality management. This also includes the provision of resources such as spaces for group meetings, financial resources for project management and program managers, and not least of all the opportunity of making such projects known inside and outside the clinical center. The clinic directors are
also responsible for the success of mentoring activities. Only when they become involved in the process can the goal of a mentoring program - provision of optimal support for young colleagues in their professional and personal careers - be achieved.

Conveniently, the project heads and project managers have experience in systems theory and in leading groups. They should be able to recognize and guide group processes, assess the effects of the group work on the different levels of the clinical system, note positive and negative feedback processes, and behave in a non-partisan fashion with respect to the various subsystems. Moreover, they should have the ability to keep the participants in the mentoring process motivated. Knowledge of the formal framework conditions and informal rules for a career in medicine is also important. While the mentor advises the mentees on professional matters, the program manager notes the group process and the systemic aspect of the work, i.e. he/she takes responsibility for the process quality and structural quality of the mentoring.

Voluntariness is also an important prerequisite for a mentoring program, i.e. both mentors and mentees should participate through choice. In addition, mentees should be able to choose their mentor freely, but mentors should also feel free to accept or turn down a mentorship.

The mentors should not be the senior physicians awarding the specialist qualification to the mentees, and should behave loyally to the mentees and observe discretion towards the clinic directors. Because of their professional knowledge, their position within the clinic, and their personal integrity, they can contribute to the institutional establishment of career advancement. Their ideas are sought after and their professional guidance is necessary in the implementation of the individual career steps. Moreover, they support their younger colleagues in striking up important contacts in the scientific community. The constant remotivation of mentees in the event of setbacks or difficulties in implementing career plans is also the mentors’ task. Last but not least, the personal example set by a mentor is of great importance. The mentors should receive gratification through recognition, i.e. individual and institutional appreciation and acknowledgement of their mentoring activities, and reward for their own career. The time and commitment they bring to mentoring could be counted on their performance record in a similar manner to a published paper.

The mentees should demonstrate a willingness to be open, personal responsibility, goal-orientedness and a readiness to act. Personal development is also an important part of the mentoring process. The fairly long-term success of mentoring calls for a broadly supported acceptance of such support programs in medical institutions [8]. In our opinion, it does not prove useful in medicine to form different-sex groups when supporting junior physicians. There is the danger that segregation of the sexes will reinforce mutual prejudices and stoke feelings of rivalry, which in turn indirectly bring exclusion mechanisms into play. Instead, talented and committed junior staff should be guided in mixed-sex groups to support each other and jointly develop strategies for building a professional career. It turns out, however, that female doctors feel more affected by a mentoring program. They also seem to benefit more from it [2]. Men more often have access to informal mentoring, such as e.g. the so-called "old boys' network" [30]. They are also more likely to have a personal mentor [31]. When it comes to their careers, male physicians tend to be "lone
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