Introduction: Mentoring has been defined as a process whereby the mentor guides the mentee in personal or professional development. Few mentoring programs are available to prepare the qualified and scientifically trained administrators required to manage the rapidly expanding national health services in the Kingdom of Saudi Arabia. We wanted to measure the attitude and knowledge of the students of the Master’s Program in Health and Hospital Administration toward mentoring.

Materials and methods: This is a cross-sectional survey, design study, conducted at King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia. The participants were students enrolled in the master’s program. The dimensions of the questionnaire were demographics, knowledge about mentoring, understanding of mentoring, perception toward mentoring, attitude toward mentoring, experience with mentoring, and the need of mentoring. A Likert scale was used to measure responses.

Results: Among 120 students, the response rate was 85%. In the domain of attitude toward mentoring, 92% of the respondents stated that mentoring is an effective method of developing their potential. The mean age was 30±4 years, 75.5% were female, 36% had finished at least two semesters, and 92% expressed a strong need for mentoring in the master program.

Conclusion: Mentorship is considered an important underutilized educational tool, which has great potential if implemented properly. Our university masters’ students demonstrated a need for mentoring that we believe is a good platform to plan future development of mentorship programs.

Keywords: mentor, student knowledge, higher education

Introduction
Mentoring is considered to be an important developmental process that has been widely used in the workplace, and is well recognized as an important part in academia.1–3 Over the years, mentoring has been proven to be an important career-advancement tool.4–7 Mentoring has been defined as “a process whereby an experienced, highly regarded, empathic person (the mentor) guides another usually younger individual (the mentee) in the development and re-examination of their own ideas, learning and personal or professional development”2. Other definitions for mentorship cited from the literature include “a dynamic, reciprocal relationship in a work environment between an advanced career incumbent (mentor) and a beginner (protégé), aimed at promoting the development of both”.2 Adams defined mentorship as “a process of integrated approach to advising, coaching and nurturing, focused on creating a viable relationship to enhance individual career, personal, professional growth and development”.1–3,8 Cory Matthews defined
mentoring as “an administrative context, which involves a person who is active, dynamic, visionary, knowledgeable and skilled with a committed philosophy that keeps the teaching and learning of students in focus; and who guides other leaders to be similarly active and dynamic”.1

The impact of mentoring on the attitude and behavior of students has been noticed and studied to some extent among secondary school/high school students, showing lower risk of school failure and dropping out. A published study about youth9 indicated that having a mentor appears to have a positive effect on youth at risk of academic failure. Other studies have shown that the primary cause for hindering career development, research publishing, and progression in academic medicine is a lack of mentoring.2,9,10 In a survey of 24 American medical schools, faculty who were assigned to mentors had greater career-satisfaction scores than those who were not assigned to mentors.2,7,11,12

There appears to be value in having the guidance of an intelligent, dedicated, encouraging, and genuine mentor. Participants in mentoring programs develop a sense of personal transformation and empowerment. Additionally, an effective mentor takes pride in the growth and accomplishments of the mentee. As such, there is a need for quantitative assessment of the need for and benefit of mentoring programs. Therefore, we wanted to measure the attitude and knowledge of the students of the Master’s Program in Health and Hospital Administration at King Saud bin Abdulaziz University for Health Sciences toward mentoring.

Materials and methods
This was a cross-sectional survey, design study. The participants were students enrolled in the Master of Health and Hospital Administration at King Saud bin Abdulaziz University. A purposive sample technique was used in selecting the participants. Given the nature of the study, a waiver was granted by the institutional review board at our institution. Inclusion was voluntary for all students.

We adapted a previously studied tool called Mentoring Interest Survey from http://mentoringanalysis.com. We piloted the survey questionnaire by distributing it to ten students and two professors. These students were excluded from the final analysis.

An introductory session about the study and all dimensions of the questionnaire was held for participants. The paper version of the questionnaires were handed over directly to the male students. An electronic version was emailed to the female students. In Saudi Arabia, we do not have coeducation for cultural reasons, and as such we did not have direct access to the female students.

Definitions
“Mentor” was defined as an experienced person in a company or educational institution who trains and counsels new employees or students. “Student” was defined as a person who is studying at a university or other place of higher education.

Study population and sample size
A total of 120 questionnaires were distributed to and self-administered by each participant. The dimensions of the questionnaire were demographics, knowledge about mentoring, understanding of mentoring, perception toward mentoring, attitude toward mentoring, experience with mentoring, and the need for mentoring. The questionnaire contained closed-ended questions.

A Likert scale was used in two dimensions of the questionnaire, in addition to closed yes and no questions. The scale had a range between low of 1 and high of 5. Confidentiality was assured to all participants, in that no names would be disclosed at any time during and after the study. The questionnaire was stored in a secure place, only able to be accessed by the author as the sole investigator. The study posed no risk to participants.

Statistical analysis
Continuous variables are reported as means with standard deviation. Categorical variables are reported as proportions and percentages.

Results
Among 120 students, 102 responded, a response rate of 85%. The mean age of the participants was 30.32 ± 3.98 years. Female respondents were 72.5%; 36.4% of the students had completed at least two semesters, 53.9% from the parallel program (Table 1); 91% of the students stated that mentoring is an effective method of developing their potential. A senior professional mentored 58% of students, and 92% of the students answered that there is a strong need for mentoring in the master’s program.

There was a strong positive correlation between age and people who felt the need for mentoring from university (r=0.21, 95% confidence interval [CI] 0.01–0.39; P<0.05) and those who felt mentors can offer advice and council to those who need it (r=0.20, 95% CI 0–0.38; P<0.05).

There was no correlation between sex difference and need for mentoring. There was a strong positive correlation between grade point average and people who felt the need for mentoring from a number of people inside our university who could be considered role models (r=0.24, 95% CI 0.02–0.46; P=0.05).
We found a positive correlation between people who had heard about mentoring and those who felt that there was a need for mentoring because there were a number of people in our university who could be role models (95% CI 0.01–0.39, *P*=0.05), and between people who had been mentored and those who felt that there was a need for mentoring by a number of people in our university who could be role models (95% CI 0.17–0.51, *P*<0.05). However, there was a negative correlation between those who had heard about mentoring and those who thought that peers were the best source of help and information (95% CI −0.39 to −0.01, *P*=0.05).

## Discussion

In this study, females were predominant in number, mostly from the parallel program. More than 90% of the students stated that there was a strong need for a mentoring program, and 60% of students have a positive attitude toward mentoring. A sporadic response about the knowledge of mentoring was observed. Seventy percent of students ranked their understanding of mentoring from moderate to very good.

There were no sex differences across the participants in terms of knowledge or perception toward mentoring; also, sex differences had no impact on understanding or attitude toward developing a mentorship program in the master’s program.

There are many structured mentoring programs in the literature that have been designed over the last few decades for health professionals. Specific attention toward sex and mentoring is a particularly sensitive issue. The literature cites topics on the area of sex and mentor relationship and sex and inequality, but little is known about male and female attitudes and their impact on mentoring in the medical field, and this will need further study to grasp the impact of mentoring across the sexes.1–3

Mentorship involves the formation of a unique relationship between the mentor and mentee. The aim of a mentoring relationship depends on the needs of the mentee, and is open to change over time. The literature shows that mentors and mentees, as well as their organization, have profited from establishing a mentoring program.3

My personal experience in this study was similar to those mentioned in the literature, in which personal experiences are imperative for a successful mentorship program. Mentors share and disseminate their experience with junior members; they expand their professional networks, and gain a sense of satisfaction. Additionally, I found a significant difference in personal experience among the surveyed students.

Given the fact that over 60% of the students had no mentors in the program, developing a mentorship program is imperative in the academic setting to improve professionalism. Current trends focus on establishing mentorship in academic programs, which try to create suitable models of mentoring.

To date, there are no formally structured mentoring programs for improving physician clinical skills or professionalism in universities in the Kingdom of Saudi Arabia. In this study, we looked into four views of improvement, and found that of the participants, 10% perceived a need for mentoring to improve professionalism, 30% needed it for research skills, 20% in academic promotion, and 10% for professional support. Mentoring has been well known to be a catalyst for career achievement, selection, and productivity in the workplace.9 Being a good mentor and effective role model/supervisor requires one to have the necessary knowledge, wisdom, and experience.

In this study, we surveyed attitudes toward developing a mentorship program and if it was an effective method for developing personal, professional, social, and career-potential development, and found that >90% of participants agreed on this concept. Mentoring programs have been shown to have a profound impact on personal, professional, and social development; therefore, having less collegial support for teaching and scholarly activities hinders faculty productivity.

Mentorship is considered an important underutilized educational tool, and has great potential if implemented properly. It develops leaders in institutions, promotes faculty development and retention, and increases collegiality and collaboration, and should be considered for all students in any academic venue. The students’ knowledge and attitude toward mentoring is a great background to plan for mentorship-program development.

This study has several limitations. The sample size was small, and the students were all from one university. As such, the results may be generalized to similar centers only. Furthermore, we did not evaluate the differences between those who responded to the survey and those who did not. This may have introduced bias into the study findings.

### Table 1 Demographics

<table>
<thead>
<tr>
<th>Variable (n=102)</th>
<th>Age (years), mean ± SD</th>
<th>Male sex, n (%)</th>
<th>Female sex, n (%)</th>
<th>Number of semesters, n (%)</th>
<th>Program, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>30.32±3.98</td>
<td>28 (27.50)</td>
<td>74 (72.5)</td>
<td>1–2: 37 (36.4)</td>
<td>Parallel 55 (53.9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2–3: 20 (19.6)</td>
<td>Regular 47 (46.1)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>3–4: 19 (18.6)</td>
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<td></td>
<td></td>
<td></td>
<td>4–5: 6 (5.9)</td>
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</tbody>
</table>

**Abbreviation:** SD, standard deviation.
Conclusion
There was a positive correlation between student age, grade point average, experience with mentorship, and the need for mentoring. Mentorship was considered an important underutilized educational tool, which has great potential if implemented properly. Our master's students demonstrated a need for mentoring, which we believe is a good platform to plan future development of a mentorship program.

Disclosure
The author reports no conflicts of interest in this work.

References