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## Motivation and academic performance of ethnic minority medical students

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# 7

## General discussion

A diverse medical workforce is crucial for providing adequate culturally competent care to ethnic minority patients and to meet the needs of a diverse population <sup>[1]</sup>. However, ethnic minority medical students have difficulties to complete their medical study successfully. Globally, ethnic minority students underperform compared to the ethnic majority students, e.g. they score lower grades and obtain fewer credits <sup>[2-8]</sup>. Students' motivation appears to be an important factor in student learning and academic performance <sup>[9-11]</sup>. By determining the factors that influence students' academic motivation and (indirectly) their academic performance, interventions aimed at facilitating the ethnic minority students during their education can be developed. The aim of this thesis was therefore to investigate these factors, as well as the mechanisms behind them to reach a better understanding.

We started this research with a systematic review considering all school-going ethnic minority students to identify factors influencing their academic motivation. The empirical studies that followed focused on medical students. We focused on this group because all medical students are generally highly motivated <sup>[12, 13]</sup>; despite this, medical students from ethnic minorities underperform compared to the ethnic majority students, making them a suitable sample to investigate this phenomenon to see whether there is change in their motivation and how it influences their academic performance, and to investigate whether other factors influence their academic performance and education. Table 1 gives an overview of the main findings of the studies conducted in this thesis.

In this general discussion, the main findings of this thesis are placed in light of the literature and structured under the following headings: factors influencing ethnic minority students' motivation, motivation and performance of ethnic minority medical students compared to ethnic majority students, factors influencing ethnic minority medical students' motivation. Additionally, we discuss the strength and limitations, implications for practice, and future research.

**Table 1.** Chapter, type of study, aims and main findings of this thesis.

Chapter in the thesis and type of study	Aim	Main findings
<b>2: systematic review</b>	To explore factors influencing ethnic minority students' motivation across the educational continuum	<ul style="list-style-type: none"> <li>• Especially ethnicity/discrimination-related factors and a limited knowledge of the majority language in a particular country seems to be specific to ethnic minority students</li> <li>• Only eight out of 45 studies were conducted in higher education</li> <li>• There is a gap in medical education literature on this topic</li> </ul>
<b>3: quantitative study</b>	To compare the type of motivation of ethnic minority and majority medical students, and its association with academic performance	<ul style="list-style-type: none"> <li>• Autonomous motivation of non-Western minority medical students was higher than that of Dutch majority medical students in preclinical and clinical education</li> <li>• Controlled motivation of Western minority medical students was higher than that of Dutch majority medical students in preclinical education</li> <li>• Ethnic minority medical students seemed to perform equally in comparison with ethnic majority medical students</li> </ul>
<b>4: quantitative study</b>	To examine whether study strategy is a mediator between motivation and academic performance, and whether these relations are different for the different ethnic groups in medical education	<ul style="list-style-type: none"> <li>• Achieving strategy was found as a mediator between autonomous motivation and grade point average (GPA) for Dutch majority medical students only</li> <li>• Other factors seem to play a role in the motivation of ethnic minority medical students (Non-Western minority and Western minority)</li> </ul>
<b>5: qualitative study</b>	To explore how educational experiences play a role in the motivation and performance of ethnic minority medical students	<ul style="list-style-type: none"> <li>• Medical students seem to have negative influences on their motivation at a particular moment (situational motivation), however in the long term, they learn to cope with it and that's why the motivation for their education and their ultimate goal of becoming a doctor (contextual motivation) remains intact</li> <li>• Ethnic minority medical students seem to experience multiple factors that influence their education, motivation and academic performance, e.g. a lack of role models and being 'the other' due to their ethnic background. These findings were categorized as follows: (1) the role of autonomy in the formation of motivation, (2) interactions and othering in practice, (3) interactions and othering in the learning environment, (4) influences on academic performance, and (5) intersections with culture and gender</li> </ul>

Table 1 continued.

Chapter in the thesis and type of study	Aim	Main findings
6: qualitative study	To gain insight into what medical students from ethnic minorities experience during their education and what they need to become or stay motivated and to perform to their full potential	<ul style="list-style-type: none"> <li>Ethnic minority students face various situations that influence their motivation and education: the effect of discrimination, a lack of representation of ethnic minority role models, no sense of belonging, a lack of medical network, differences and difficulties in cultural communication and language, and examiner bias in clinical assessments</li> <li>Ethnic minority students' support needs were categorized as follows: (1) creating more awareness about diversity and other religions, and a support group, (2) having visible ethnic minority role models (3) understanding for each other (ethnic minorities and ethnic majorities), (4) facilitating support in networking, (5) providing guidance in communication skills and overcoming language barriers, (6) having timely communication about students' performance, and (7) changing the clerkship grading</li> </ul>

### Factors influencing ethnic minority students' academic motivation

In the 45 papers included in the systematic review (chapter 2), factors influencing the academic motivation of ethnic minority students were considered. The factors that were found to positively and/or negatively influence their motivation could be classified as follows: individual factors (e.g. well-being and emotions related to learning), family-related factors (e.g. family support and obligations), school-related factors (e.g. school and teacher support and academic achievement), and social factors (e.g. discrimination, racism, and peer support). Some of these results might be applicable to all students, regardless of their ethnic background. Therefore we compared our findings with other general studies (not specifically among ethnic minorities) [14-24]. Based on this comparison we can conclude that especially ethnicity/discrimination-related factors and a limited knowledge of the majority language in a particular country might be specific to ethnic minority students. The other factors could apply to both ethnic majority and ethnic minority groups. Only a few (eight) studies were conducted in higher education and there was no research conducted in medical education at all.

### Motivation and performance of ethnic minority medical students compared to ethnic majority students

To explore the academic motivation and academic performance of ethnic minority medical students we considered their type of motivation (autonomous and controlled; using Self-Determination Theory as a framework) and academic performance and compared it with

ethnic majority students (chapter 3). The autonomous motivation of Non-Western minority students was significantly higher than of Dutch majority students. The controlled motivation of Western students was significantly higher than of Dutch majority students. Moreover, autonomous motivation positively influenced the academic performance of Dutch majority and Western minority students. However, autonomous and controlled motivation did not directly influence the academic performance of non-Western minority students. It seems that these students' academic performance is not directly influenced by motivation, but that other mediating factors, such as study strategy [10] or support of family and friends [25] play a role.

Further, our findings revealed that ethnic minority students do not underperform (measured as grade point average and clerkship performance grades) compared to the ethnic majority students. This contradicts previously reported findings among medical students in a systematic review and meta-analysis in the UK, and a longitudinal study in the Netherlands [5, 8]. To understand our findings, the motivational profiles (contextual motivation) of the ethnic groups were also considered; most students were in 'high autonomous-low controlled' (33%) and 'moderate autonomous-low controlled' motivation profiles (29%). The percentage of students in the 'high autonomous-low controlled' motivation profile is higher than in a previous study (26.1%) [10] and the response rate was only 38.6%. So, an explanation for our findings could be that the more motivated and better performing students participated or reported their ethnic background in this study. These findings showed that the autonomous (contextual) motivation of the students was relatively high and ethnic minority students did not underperform compared to the majority students. However, in general, studies have reported that ethnic minority students underperform compared to the majority students, including in medical education in the Netherlands. Moreover, ethnic minority students seem to experience more difficulties in their education than the majority students [26], which may influence their motivation at the situational level. Because this had not been previously investigated, we considered their situational motivation in qualitative studies to gain better understanding of minority students' experiences which may put them at risk for underperformance.

### Factors and experiences influencing ethnic minority medical students' academic motivation and education (chapter 4, 5, and 6)

Motivation is dynamic and can be influenced by different factors in the environment [17]. Chapter 4 investigates the factor study strategy as a mediator between the motivation and academic performance of ethnic minority medical students, and chapter 5 and 6 investigate the experiences influencing the motivation, academic performance and education of these students. Our earlier study showed that there was no association between the type of

motivation and academic performance (GPA), meaning that other mediating factors could be playing a role (chapter 3). Moreover, a previous study reported on the relationship between motivation, study strategy, and the academic performance of medical students<sup>[10]</sup>. Motivation had a positive influence on academic performance of medical students through deep study strategy (looking for meaning or to maximize meaning in the study materials)<sup>[10]</sup>. Achieving strategy (the effective use of time and space to achieve a good grade) was found as a mediator between autonomous motivation and GPA for only Dutch majority students, meaning that factors other than these play a role. The conclusion of this study was that qualitative research is needed to identify other factors that influence academic performance among ethnic minority students, and what these students experience during their education, to acquire a better understanding about when and where they need intervention and support. To follow-up this research, two qualitative studies using focus groups (chapter 5) and interviews (chapter 6) were conducted among medical students from ethnic minorities to gain an understanding of the factors that could play a role in the motivation, academic performance and education of ethnic minority students. These qualitative studies showed an overlap between factors and experiences influencing both their motivation and academic performance. Some students expressed that their motivation and performance were interrelated, so we did not distinguish between those two variables in our findings. The following themes emerged from the focus groups: (1) the role of autonomy in the formation of motivation, including their own study choice and the role of the family; (2) interactions and othering in a practice, like not fitting into the department team; (3) interactions and othering in the learning environment, such as standing up for yourself; (4) influences on academic performance, such as the role of family; and (5) intersections of culture and gender, such as being 'the other' on the basis of both ethnicity and gender.

Students' own motivation was integrated with the motivation that is driven by the expectations of family. On the one hand, they want to fulfil the expectations of their family. On the other hand, ethnic minority students have a desire to make their own decisions. This paradox of autonomy shows how students from ethnic minorities are influenced by growing up within two cultures: the minority culture, which is usually more collectivistic in orientation, and the majority culture which is more individualistic in orientation. Earlier research has also shown the importance of family relations in ethnic minority groups within a collectivistic culture<sup>[27]</sup>. The students in our research seem to respect both conditions; one student illustrated how he integrated both his/her cultures in a hybrid form by saying that 'luckily for my family, I also wanted to study medicine', showing that students' decisions can be context-dependent. In addition, the students' experiences showed that they could experience negative influences on their motivation at a particular moment (situational motivation)<sup>[28]</sup>,

however in the long term, they learned to cope with it and that's why the motivation for their education and their ultimate goal of becoming a doctor (contextual motivation) remains intact<sup>[28]</sup>. This is a crucial finding because there may be students who cannot cope with recurring situational experiences influencing their motivation negatively, which might be piling up, and become demotivated in the long term, which could influence their motivation to continue their education (contextual motivation). Further, experiences related to their ethnicity and culture play a great role in the learning and practical environments of ethnic minority students. A surprising finding was that while students usually described negative experiences, and expressed that these could negatively influence the motivation of others, they claimed that they did not let such negative experiences influence their own motivation. However, as an ethnic minority, they had the feeling that they needed to work twice as hard to prove themselves in comparison to the majority students. Moreover, experiences influencing their motivation negatively, like discrimination and stereotypical threats, were generally given a positive twist and the student just kept going. It might be that students from ethnic minorities have acquired resilience based on their cultural experiences that seems to protect them from becoming discouraged in this particular setting. It may even boost their motivation. Another explanation could be that they internalise the individualistic norm. They normalise the norm on how to be professional, like being emotionally detached and highly ambitious, and they learn to remain silent about their insecurities<sup>[29, 30]</sup>, giving the impression that students want to adopt to the prevailing culture.

Moreover, ethnic minority students had the feeling that they are the 'other', and feel excluded. Because of their minority background they felt that they did not fit into the student or department team. Some reasons for feeling like the 'other' were that they do not engage in activities that are typical for the majority, such as drinking beer and going on skiing holidays, or because they wear a headscarf, and are in line with findings from earlier studies<sup>[29, 31]</sup>. It has previously been suggested that such experiences of cultural differences may cause difficulties for ethnic minority students and physicians in putting themselves forward in a positive way and in networking successfully<sup>[29, 32-34]</sup>. However, in our study we found that the experiences of ethnic minority students, e.g. remarks about being a Muslim or wearing a headscarf, are a process of growing awareness for them. Students hardly expressed feelings like anger. An explanation could be that they remain silent about their uncertainties and emotions, and do not let them influence their motivation because this is seen as 'being professional'<sup>[30]</sup>, this additionally to their other negative experiences. This gives the impression that ethnic minority students try to adopt to the prevailing culture.

Our last study was a qualitative study and aimed to gain insight into what medical students from ethnic minorities experience during their education and what they need to become

or stay motivated and to perform to their full potential (chapter 6). The following factors emerged from the interviews with the ethnic minority students: 1) the effect of discrimination, (2) a lack of representation of ethnic minority role models, (3) no sense of belonging, (4) a lack of medical network, (5) differences and difficulties in cultural communication and language, and (6) examiner bias in clinical assessments. In addition, the following support needs, belonging to the identified factors, emerged from the interviews: (1) creating more awareness about diversity and other religions, and a support group, (2) visible ethnic minority role models (3) understanding for each other (ethnic minorities and ethnic majorities), (4) support in networking, (5) guidance in communication skills and overcoming language barriers, (6) timely communication about students' performance, and (7) change in clerkship grading.

Previous studies also showed that there is a lack of ethnic minority role models <sup>[35-37]</sup>. Receiving help with improving the skills to build and maintain networks, and seeing ethnic minority role models from early in their education could help ethnic minority students to reduce the educational and professional gap between ethnic majority and minority students and to prevent this gap in the future. Ethnic minority role models are essential as their influence is through the hidden curriculum rather than the formal curriculum. Visible ethnic minority role models, could help ethnic minority students realize that their dream and goal of becoming a doctor is feasible <sup>[38]</sup>.

Language barriers and communication differences also negatively influenced ethnic minority students' education. Usually it is about not being assertive and being misunderstood. There is awareness among ethnic minority students that they should be assertive <sup>[34]</sup>, but being assertive can be difficult for ethnic minorities because of the influence of their own culture which usually does not encourage assertiveness <sup>[29, 35]</sup>. Moreover, being uncertain about their proficiency of the majority language can explain why interactions with other students or teachers are hampered (e.g. not daring to ask questions) and play a role in understanding the learning material and being able to follow the lessons <sup>[34]</sup>. These findings indicate that it is crucial that medical schools train students early in their education in assertiveness and offer help in majority language to prevent these problems later.

Further, examiner bias in clinical assessments was mentioned. Subjectivity in clinical assessments might be reduced especially in ethnic minority students by changing the clerkship grading system from a '0-10' scale into 'pass-fail'. Earlier research has identified the subjectivity among assessors in which students' ethnicity played a role. Using several assessments by different assessors at different moments decreased the variation in clinical grades based on students' ethnicity <sup>[39]</sup>.

## Strengths and limitations

The strengths of this thesis are as follows:

- This thesis adds to the existing literature on motivation and medical education by investigating the motivation of medical students with an ethnic minority background. Self-Determination Theory, which measures the quality of motivation, was used as a basis to design our studies. SDT helped us in gaining a better understanding in (the formation of) ethnic minority students' motivation.
- We started with a systematic literature review considering factors influencing the academic motivation of all school-going ethnic minorities in order to get an overview and to not miss any relevant factors that might influence the motivation of medical students from ethnic minorities.
- The multi-method approach strengthened this thesis. Qualitative research methods were used to further investigate the quantitative research findings. This allowed us to explore mechanisms involved in factors influencing the motivation, performance and education of medical students from ethnic minorities.
- All interviews and focus groups (qualitative studies) were conducted by a researcher with an ethnic minority background. The participants reported ease and openness in sharing their experiences. The researcher experienced a better understanding of their experiences because of her background. This has earlier been reported by Rifi (2014).
- Recommendations for support in medical education came from within the target community, i.e. ethnic minority students.

The limitations of this thesis are as follows:

- The quantitative studies (chapter 3 and 4) had a low response rate (of ethnic minority students), i.e. 38.6%. The response rate of ethnic minority groups (14.3% non-Western, 8.4% Western) was also low compared to the majority group (77.3%). In the beginning of the study year, in which the data was gathered, 69.5% Dutch majority, 20.9% non-Western, and 9.6% Western medical students were enrolled. Apparently, the participants with an ethnic minority background are not representative of the whole ethnic minority medical student population. Moreover, response bias might have influenced the findings in this thesis, mainly findings related to motivation; it seems that more motivated students were likely to be more willing to participate in the studies.
- The fact that the studies in this thesis were conducted at one university in the Netherlands, VUmc School of Medical Sciences Amsterdam, is a weakness of this thesis. However, this particular medical school has inclusivity in its mission and has been recognized by the accreditation board for its efforts. This medical school is well-

known for its diverse population and culture of diversity and therefore the findings (negatively) influencing the motivation and performance of ethnic minority students might be even more relevant for ethnic minorities students in other universities. Further research is needed to investigate this.

- A limitation of the qualitative studies is how we defined ethnic minority (our study population). The definition of the Statistics Bureau of the Netherlands (CBS) is used ([www.cbs.nl](http://www.cbs.nl)): ‘a person with at least one parent born outside the Netherlands’. We might have excluded potential participants who do feel that they are from an ethnic minority but were not included in the CBS definition.
- Because of the sensitivity of the study topic in our qualitative studies snowball sampling was used to gather students <sup>[40]</sup>. This might have led to the inclusion of more resilient or motivated ethnic minority students, who may feel more comfortable with their ethnicity in particular situations than the majority of ethnic minority students. Nevertheless, a number of factors influencing motivation negatively and negatively influencing experiences were still identified. These experiences may even have more impact on the motivation of those ethnic minority students who are less resilient and motivated.

## Practical Implications

Several practical implications arise from the studies in this thesis:

- Medical schools should offer medical students and staff cultural competency training, e.g. to create more awareness about diversity and other religions. This could reduce for example remarks about ethnic minority students’ accents. Moreover, miscommunication, judgements and negative feedback about students from ethnic minorities not being assertive (enough) could be avoided.
- Support groups with other ethnic (minority) students should be stimulated. This would help the students to share their negative experiences with other ethnic (minority) students, and learn from each other in how to handle with difficult situations.
- Medical schools should give students doing their clerkship more clarity about what is expected of them. Students’ ethnic backgrounds need to be taken into account. This would help to prevent misunderstandings based on cultural differences, e.g. regarding the expectations based on assertiveness.
- An open and safe culture, in which ethnic and cultural differences could be discussed, should be created. Medical students and staff would benefit from the development of a culture in the learning environment in which these differences and prejudices among each other’s culture can be openly discussed.

- An environment in which ethnic minority students can have a sense of belonging should be created, e.g. conducting activities during introduction days which are attractive for all students. This would contribute to their feeling of relatedness.
- Ethnic minority students have the need for ethnic minority role models and a medical network. There should be more visible ethnic minority role models, like specialists with an ethnic minority background in teaching, tutoring and mentoring roles throughout the educational continuum. Moreover, opportunities should be created to build and maintain networks, e.g. involving students more in research related to their ethnicity to have the possibilities to create a network.
- A ‘low threshold’ system should be generated where ethnic minority students can easily report incidents of discrimination and insult (such as, “Are you carrying a bomb?”). This would show that such behaviour will not be tolerated and the problem will be addressed.
- Communication and interaction are very important in the medical setting. Medical schools should provide training in communication and language skills. In addition, an assertiveness training should be offered.
- Assessors should communicate better and timely with students about their performance in order to prevent failures on account of miscommunication about expectations.
- A change in the clerkship grading from a ‘0-10’ scale into ‘pass-fail’ is recommended, this could reduce subjectivity of the clinical assessment (e.g. based on students’ ethnicity).

Wherever possible, the above mentioned interventions should be offered to and aimed at the whole student population in order to not to increase separation between ethnic groups.

## Future research

The findings in this thesis reveal opportunities for future research:

- The findings of this thesis are based on a small proportion of medical students from ethnic minorities. Further research aimed at the generalizability of the findings is needed.
- This thesis indicates that students from ethnic minorities still have the need for support in their education. Follow-up research on the effects of such support programs in practice should be conducted to establish their usefulness in medical education, e.g. the effects of assertiveness training on medical students from ethnic minorities and the effects of culturally competency trainings, e.g. to create more awareness about

diversity and other religions, on medical students and staff should be explored. Future research comparing the effects of clerkship assessments graded with a scale '0-10' with 'pass-fail' is necessary to determine whether ethnicity plays a role in the assessments.

- The perspective of majority students was not included, future qualitative research should include majority students to generate more (and deeper) insights, to validate the qualitative findings, and to determine how the perspectives of ethnic minority and majority students compare.

## Conclusion

Ethnic minority students experience various factors and experiences that influence their motivation, academic performance, and education during their whole educational continuum, varying from lack of ethnic minority role models to experiencing discrimination and cultural distance. The students who participated in our research generally know how to cope with these recurring negative experiences which might be piling up, and their earlier experiences seem to protect them from having a negative influence on their (contextual) academic motivation and their ultimate goal of becoming a doctor in the long term. Nevertheless, the negative factors could still stop them from performing to their full potential. Ethnic minority medical students indicated support needs that could help ethnic minority medical students further in their education. If medical schools (medical staff and teachers, medical curriculum developers, medical students) focus on the implementation of the practical implications of this thesis to support ethnic minority students in their education, this may lead to optimal learning environment for ethnic minority students in which they can perform to their full potential.

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