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Motivation and academic performance of ethnic minority medical students

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1

General introduction

Due to global migration the general population is becoming increasingly diverse and diversity in physicians remains underrepresented, which influences the extent to which health care needs of the patient population are met. In order to ensure equitable healthcare, ethnic minority groups should be adequately represented in the medical workforce. Diversity in the medical workforce is essential for an adequate provision of culturally competent care to ethnic minority patients and to meet the needs of a diverse population^[1]. An example of such culturally competent care can be seen in shared decision making. When providing the possibility of shared decision making to patients of some ethnic minority groups (mainly from collectivistic cultures) family plays a great role in their healthcare and they believe that their family should be involved in decision making about their treatment^[2, 3].

Currently, medical students from ethnic minorities experiences difficulties in successfully completing the medical study. They underperform compared to the majority group^[4, 5]. They achieve lower scores on knowledge and skills assessments, which is unexpected because students enter medical schools through selection procedures and with comparable credentials and levels of academic performance, regardless of their ethnicity. Phenomena such as examiner bias^[6] and stereotype threat^[7, 8], have been investigated as factors that influence the performance of ethnic minority students. However, these do not explain all underperformance. A large part of the variance in underperformance remains yet unexplained and the underlying reasons are not fully understood. Furthermore, ethnic minority students underrepresented in medicine experience barriers in competing successfully for residency programs and entering academic careers. Motivation is an essential factor for learning and academic performance of medical students^[9-11] and insight into ethnic minority students' motivation during medical study may be helpful in explaining their underperformance.

The studies in this thesis are conducted in the Netherlands. The percentage of medical students with an ethnic minority background is around 27% (CBS, <https://opendata.cbs.nl/statline/#/CBS/nl/dataset/83538NED/table?ts=1561639060003>). However, this ethnic diversity is not represented in the medical staff^[4, 12]. To close this gap and to ensure the success of medical students from ethnic minorities, the factors influencing their motivation and (indirectly) leading to their underperformance, including the underlying mechanisms, need to be identified. Thus, this thesis aims to explore the factors and experiences influencing the motivation and academic performance of ethnic minority students, and how motivation influences their academic performance.

Underperformance among ethnic minority students

Research has shown that ethnic minority students underperform compared to the ethnic majority students in educational settings^[4, 5, 13-17].

Despite equal performances of students from ethnic majority and minority at the beginning of their education^[15], performance differences arise during elementary school^[18] and increase over time^[15]. Varying from elementary school to higher education, ethnic minority students exhibit lower grades, achieve fewer credits, have 2.5 times more chance to fail for examinations and have 2 times more chance to have a study delay compared to the ethnic majority students^[5, 13-17]. Moreover, in tracked educational systems ethnic minority students are underrepresented in higher education, and overrepresented in vocational or lower education tracks^[14, 16, 18].

In medical education, ethnic minority students also underperform. They score lower on knowledge and skills assessments in preclinical and clinical education^[4, 5]. Moreover, research suggests that for ethnic minority students, small differences in assessed performance lead to larger differences in grades than for ethnic majority students^[19]. They also have problems in acquiring a post-graduate placement^[20].

Factors related to stereotype threat^[7, 8], feelings of belongingness^[21], and socioeconomic status^[4, 18] can lead to the underperformance of ethnic minority students. However, these factors do not explain this underperformance entirely.

Motivation of ethnic minority students

Motivation is an important factor in deep learning and academic success^[9-11]. In addition, motivation can be influenced by different factors in the environment^[22]. For example, factors like stereotype threat could negatively influence students' motivation^[23]. Insight into factors that negatively influence motivation and their mechanisms can inform interventions for reducing these influences. Furthermore, how motivation influences the performance of ethnic minority students is still unexplored. Medical students are an ideal group for studying this phenomenon because it is known that (the quality of) their motivation can be considered good^[24, 25]. Nevertheless, they underperform compared to the majority students. The expectation is that the motivation of ethnic minority students is also quite good, and if we can determine the factors influencing their motivation negatively, these factors can be expected to be highly important. For ethnic minority medical students that

are less motivated, these factors might demotivate them even more. Moreover, medical education is a dynamic setting with continuous interaction between medical students, medical staff and patients. This makes the medical student population an interesting group to see how and why factors affect their motivation and their academic performance.

Self-Determination Theory as framework

The Self-Determination Theory (SDT) was applied as the framework in this thesis. SDT describes the quality of motivation with different types of motivation along a continuum (see figure 1):

- amotivation - a lack of motivation;
- extrinsic motivation - motivation originating from external factors;
- intrinsic motivation – motivation originating from genuine interest.

Extrinsic motivation can be divided into three subtypes:

- external regulation - behaviour to satisfy an external demand, behaviour to avoid a punishment or obtain a reward;
- introjected regulation – behaviour to satisfy an internal demand, behaviour to avoid internal pressure or feelings of guilt or shame;
- identified regulation - valuing a behavioural goal as personally important.

Intrinsic motivation, together with identified regulation forms autonomous motivation ^[26-28]. Introjected regulation, together with external regulation forms controlled motivation. Autonomous motivation is more desirable than controlled motivation because it shows good associations with deep learning, better academic performance, and less exhaustion ^[9]. Three basic psychological needs have to be satisfied to be motivated:

- need for autonomy - feeling of choice in an action;
- need for competence - feeling capable of doing something;
- need for relatedness - sense of belonging to others.

Fulfilling these needs in a learning environment can move a student from controlled motivation towards autonomous motivation, and vice versa.

Moreover, SDT describes a hierarchical model of motivation with three levels: global, contextual and situational ^[29]. The global level concerns a global motivational orientation within which the individual interacts either intrinsically, extrinsically or amotivated (lack of motivation) with his environment ^[26, 29, 30]. Contextual motivation refers to the motivational orientation related to the life context of the individual, for example, education or work.

Situational motivation refers to the motivation pertaining to a particular time and place, and it can be influenced by social factors.

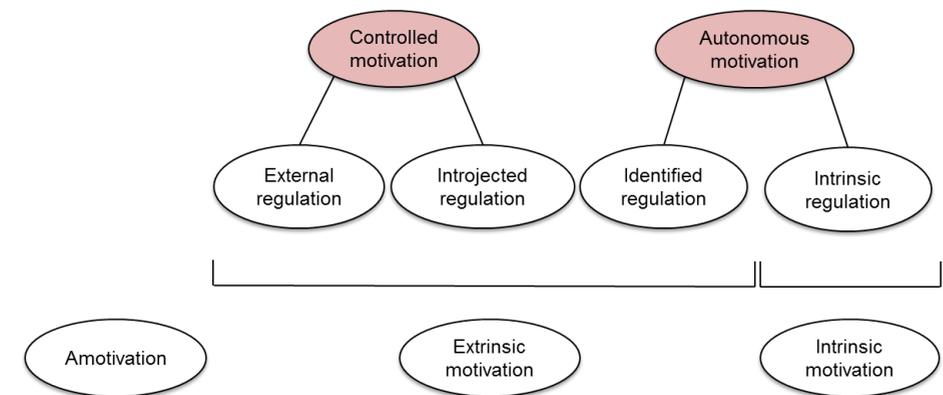


Figure 1. The Self-Determination Theory continuum (Adapted from Ryan and Deci, 2000 ^[10]).

Ethnic majority and minority groups in the Netherlands

The Netherlands, the setting in which the studies of this thesis are conducted, has an ethnically very diverse population. In January 2018, there were 197 non-Dutch nationalities in the Netherlands (<https://opendata.cbs.nl/statline/#/CBS/nl/dataset/03743/table?fromstatweb>). The Netherlands has a history with a lot of immigrants. The biggest migration to the Netherlands was between 1960 and 1970 because of the increasing welfare and employment in the country, mainly from Turkey, Morocco and Spain.

According to the Statistics Bureau of the Netherlands an ethnic minority is defined as “a person with at least one parent born outside the Netherlands”. Ethnic minority students are divided into the following five ethnic minority groups: ‘Turkish/Moroccan/African’, ‘Surinamese/Antillean’, ‘Asian’ (including Chinese), ‘Western’ (including European, North American and Oceanian, Indonesian, and Japanese), and ‘Other’ ^[4]. Ethnic minorities from Indonesia are classified as ‘Western’, because of their socioeconomic and socio-cultural position (<https://www.cbs.nl/>). Their families are mainly people born in former Dutch East Indies. Further, the minority groups can be clustered into ‘Western’ and ‘non-Western’. The Western minority group includes European and North American. The non-Western minority group includes ‘Turkish/Moroccan/African’, ‘Surinamese/Antillean’, ‘Asian’ and ‘Other’. These divisions are standardized for use in the Netherlands. The population in the Netherlands in 2018, divided into the groups Dutch majority, Non-Western minority, and

Western minority, is depicted in figure 2.

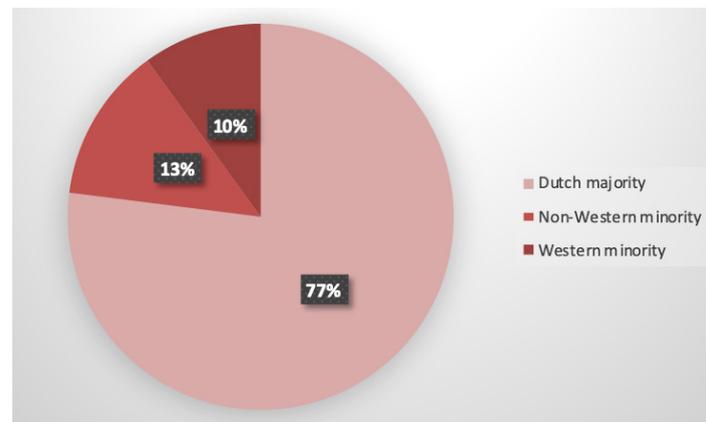


Figure 2. Population of the Netherlands divided into three ethnic groups.

Reflection on the role of principal investigator in the research

Before starting my PhD I was aware of the sensitive topic of my PhD-trajectory and my own position with regard to the study population (ethnic minorities). However, my motivation for studying this research topic is mainly because of my own ethnic minority background. As a researcher, especially in qualitative research, reflexivity is an important aspect. On the one hand, it felt good and motivating to conduct studies that might help ethnic minority students be successful throughout the educational continuum. On the other hand, I sometimes felt uncomfortable, being an ethnic minority, to distinguish people based on their ethnicity and to consider them as a separate group, for example by explicitly asking them to participate in my research because of their ethnic background. Further, my own ethnic minority background as a researcher on this research topic enabled a better understanding of the participants^[31]. While listening to the stories of the students, I recognized their experiences, and I could empathize with them. This strengthened my role as a researcher. Furthermore, it may have contributed to the participants feeling more comfortable and being more open in sharing their feelings^[31]. However, I was aware that my ethnic minority background may also be a pitfall. Being aware that sharing my own experiences that I might have in common with the participants might influence the data collection, e.g. during the interviews, I aimed to use my background and own experiences merely as a lens to obtain understanding of participants' experiences^[32]. A few participants were interested in my own experiences as an ethnic minority student, and at times it was quite hard for me to withhold my own experiences. In these occasions, after the interview

I took time to share it with the respective participant. Moreover, the collected data and findings were regularly discussed within a research team with researchers from ethnic majority and minorities. This helped me to consider the data and findings from another perspective. This diverse team encouraged reflexivity and strengthened the (qualitative) studies to come to a holistic picture of the sensitive topic of this thesis.

Broad research questions in this thesis

- What are the factors that influence the motivation of the ethnic minority students? What are the mechanisms?
- How does motivation influence their academic performance?

Specific research questions in this thesis

- Which factors influence the academic motivation of ethnic minority students? In what ways do such factors influence the academic motivation of ethnic minority students? (Chapter 2)
- Do autonomous and controlled motivation, and academic performance (including professional behaviour) differ between ethnic majority and minority students in preclinical and clinical education? What are the associations between autonomous motivation, controlled motivation and academic performance of majority and minority students in preclinical and clinical education? (Chapter 3)
- What is the relationship between the type of motivation (autonomous and controlled motivation), study strategy (surface strategy, deep strategy, and achieving strategy), and academic performance (grade point average and clerkship performance) for different ethnic groups (Dutch majority, Non-Western minority, and Western minority)? (Chapter 4)
- How do ethnic minority students experience factors that may play a role in their motivation, academic performance and education? (Chapter 5)
- How do experiences of medical students from ethnic minorities influence their motivation and academic performance? What are the supporting factors that can be applied in the medical curriculum according to medical students from ethnic minorities and how? (Chapter 6)

The aim and outline of this thesis

The broad aim of this thesis was to investigate the factors influencing ethnic minority students' motivation and (indirectly) academic performance, and their underlying mechanisms. Quantitative and qualitative research methods were used to study this.

Chapter 2 includes a systematic review that was conducted in order to create a comprehensive overview of factors that may influence motivation of ethnic minority students. In this study, general academic motivation or school-related motivation of students (from elementary school onward) was considered, regardless of which motivation theory had been used as a framework. This allowed for a comprehensive overview of factors that may influence the academic motivation of ethnic minority students.

Chapter 3 addresses the autonomous and controlled motivation of ethnic minority (Western and non-Western) and majority (Dutch) students, and their association with academic performance. In this cross-sectional study, all students of a Dutch medical school were invited to complete a survey including the Academic Self-Regulation Questionnaire, which measures autonomous and controlled motivation.

Chapter 4 reports whether study strategy (surface, achieving, and deep) is a mediator between the type of motivation (autonomous and controlled motivation) and academic performance (GPA and clerkship performance), and whether these relations are different for students from different ethnic groups. This provided a better understanding of the needed intervention/support in the curriculum. All students of a Dutch medical school were invited to complete a survey including the Study Process Questionnaire (SPQ) measuring surface strategy, deep strategy, and achieving strategy.

Chapter 5 reports a qualitative study using focus groups which was conducted to investigate how educational experiences play a role in the motivation and academic performance of ethnic minority students. By including experiences affecting the motivation of ethnic minority students in the medical curriculum, this study builds on the study described in chapter 3. The underlying mechanisms of the experiences and interactions uncovered other factors influencing motivation, academic performance and education.

Chapter 6 describes an interview study aimed at gaining insight into what medical students from ethnic minorities need in their education to become/stay motivated and to perform well/better. This chapter provides recommendations from the perspective of the ethnic minority students.

Chapter 7 is the general discussion chapter, in which the findings with regard to motivation and academic performance of medical students from ethnic minorities are considered in light of the existing literature. It includes a reflection on the strengths and limitations of this thesis, as well as practical implications and suggestions for further research arising from this thesis.

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