Mitigating Discrimination's Health Impact Among Muslims: A Mixed-Methods Study on Neighborhood Factors and Policy Strategies That Make a Difference

Dani Abdoellakhan (737522)

Date of completion: June 13, 2025

Words: 11,917

Supervisor: Dr. Asya Pisarevskaya

Second reader: Dr. Maria Schiller

Abstract

Discrimination against Muslims is a pressing concern in the Netherlands and beyond, yet its health impacts remain underexplored in the Dutch context. Another knowledge gap concerns the influence of local contexts in shaping the discrimination-health link. While literature shows that neighborhood factors may buffer the health impacts of perceived discrimination, this potential remains understudied among Dutch Muslims.

Therefore, this mixed-methods research aimed to investigate the association between perceived discrimination (everyday and major forms) and self-assessed health and mental wellbeing among Muslims living in the neighborhoods Feijenoord and Schiebroek in Rotterdam. Using a self-designed "Protective Factors Framework," I also examined how neighborhood factors - cohesion and intergroup contact - might buffer the health impacts of perceived discrimination. These relations were tested through a quantitative survey (n=152).

Thereafter, a qualitative focus group was conducted, involving Muslims of both neighborhoods (n=5). This method enriched the quantitative findings, and aimed to identify additional local strategies or policies (not measured in the survey), that could also protect Muslims against adverse discrimination effects. This participatory approach aligns with calls for co-creation and responsiveness in public governance. Through this mixed-methods design, the study produced findings that are both empirically grounded and policy-relevant.

Results generally showed that perceived discrimination was negatively associated with health outcomes, with the negative effect of everyday discrimination being more pronounced. However, everyday discrimination effects were mitigated by neighborhood factors. Perceived neighborhood cohesion buffered the negative impact of everyday discrimination on mental wellbeing in both neighborhoods, while quality of intergroup contact showed a protective effect specifically in Schiebroek. Similar buffering effects were not observed for the effect of major discrimination on health outcomes.

The focus group revealed feelings of exclusion from policymaking and reluctance to seek mental and legal support after having experienced discrimination. Participants emphasized the value of sustained contact with non-Muslims for reducing prejudice and improving wellbeing. Finally, Muslims shared strategies to strengthen police-youth relations, echoing survey findings on police-related discrimination. This novel, mixed-methods study led to actionable policy recommendations, discussed at the end of this research paper.

Keywords: Everyday discrimination; major discrimination; mental wellbeing; self-assessed health; cohesion; intergroup contact; local governance; mixed-methods; Muslims; Rotterdam

Introduction

Discrimination against Muslims is a pressing concern across Europe. Nearly one in two Muslims (47%) in the EU report experiencing discrimination in their daily lives, according to the 2024 report by the European Union Agency for Fundamental Rights (FRA). This marks a strong increase compared to 2016 (39%), highlighting a worrying surge in anti-Muslim discrimination (Kassam, 2024). In the Netherlands, these numbers are even higher, with 55% of surveyed Muslims reporting discrimination. These experiences range from labor market discrimination to ethnic profiling, leading to feelings of marginalization, reduced institutional trust, and alienation from society (Andriessen et al., 2020).

While commentators argue that perceived discrimination does not always reflect *objective acts* of discrimination (Ellian, 2024), research underscores the importance of studying perceived discrimination, as it strongly affects individuals' health and mental wellbeing (Small & Pager, 2020). A meta-analysis of 134 studies demonstrated that perceived discrimination is significantly associated with poorer health and mental wellbeing (Pascoe & Richman, 2009). This holds for both "everyday discrimination," which involves discriminatory encounters in daily life, such as receiving poorer service, and "major discrimination," which is more institutional in nature, like being rejected for a job (Small & Pager, 2020). Adverse health effects include psychological distress, self-reported poor health, depression, and increased participation in unhealthy behaviors (Bennett et al., 2005; Richman et al., 2016; Williams et al., 2003; Williams & Mohammed, 2008). These health consequences may extend to other life domains, influencing employment prospects and contributing to societal or political disengagement (Andriessen et al., 2020). Despite the high prevalence of perceived discrimination among Dutch Muslims, research specifically examining its health consequences remains limited. Moreover, the meta-analysis of Pascoe and Richman (2009) did not include studies focusing specifically on Muslim discrimination. Therefore, the current study addresses this first knowledge gap.

Additionally, while the negative health effects of perceived discrimination are acknowledged in research, far less is known about the role of local contexts in shaping these effects. Some studies suggest that neighborhood factors can either exacerbate or mitigate these effects. For instance, Yang et al. (2016) found that in U.S. neighborhoods, higher concentrations of racial minorities buffered the health impacts of discrimination, whereas neighborhoods with higher housing values intensified them. Similarly, better perceptions of neighborhood cohesion were found to alleviate discrimination's negative health effects among racial and sexual minorities (Saleem et al., 2018; Tran, 2015). Despite these insights, little is

known about how local neighborhood variations affect the discrimination-health link among Muslims in the Netherlands. Bridging this second gap is vital to understand how neighborhood factors influence discrimination's health impact. Understanding these dynamics is also crucial for policymakers, as it potentially highlights opportunities for neighborhood-based strategies that could mitigate adverse health effects of discrimination.

Therefore, this study aims to investigate the association between perceived discrimination and self-assessed health and mental wellbeing among Muslims in two distinct Rotterdam neighborhoods - Feijenoord and Schiebroek - which provide a compelling comparison. Their contrasting demographic and socio-economic contexts create distinct social environments. Feijenoord, characterized by lower average incomes and a higher concentration of Turkish and Moroccan residents, contrasts with Schiebroek's relatively affluent and more Western-European population (Allecijfers, 2025). These differences are not only relevant for identifying potential variations in perceived discrimination, but also for exploring how neighborhood characteristics may buffer or amplify its health impacts.

The following research question will be answered: How is perceived discrimination (i.e., everyday and major forms) associated with the self-assessed health and mental wellbeing of Muslims residing in Feijenoord and Schiebroek? Subquestions include: (1) How do everyday and major forms of perceived discrimination *individually* relate to self-assessed health and mental wellbeing among Muslim residents in the two neighborhoods?; (2) How do perceptions of social cohesion and intergroup contact differ between Feijenoord and Schiebroek, and in what ways do these neighborhood factors moderate the discrimination-health relation?; and (3) How do Muslim residents perceive the (potential) role of local strategies, policies, and neighborhood-level interventions in mitigating the negative health effects of discrimination?

This research contributes in three ways to the academic literature. First, it advances the study of local-level differences in the discrimination-health link, an area that has received little attention in existing scholarship. I will propose a novel theoretical framework, suggesting that certain neighborhood features can serve as "protective factors," alleviating the negative effects of perceived discrimination on health. As this research is focused on *experiences,* subjective neighborhood perceptions (i.e. of neighborhood cohesion and quality of intergroup contact) will be central to this framework. Second, this study employs a mixed-methods approach, combining quantitative and qualitative research methods, which is largely absent in this specific field in the Netherlands and beyond. Specifically, a quantitative survey will be conducted among Muslims living in the two different neighborhoods, after

which a joint focus group will be organized including respondents from each neighborhood. This design ensures robust, first-person insights into the discrimination-health association, and provides an in-depth understanding of the role of neighborhood factors in shaping the discrimination experience. Finally, I draw an important distinction between "everyday" and "major" discrimination. Although everyday discrimination may seem minor in nature, research suggests that it can have equally, if not more, severe health effects than major forms of discrimination (Small & Pager, 2020; Williams et al., 1997). Using separate scales strengthens the measurement of perceived discrimination.

Beyond its academic contributions, this research holds important societal relevance. First, the findings are beneficial for (Islamic) schools, community centers, Mosques, and the health care sector, as they can better understand the impacts of discrimination and develop tailored interventions to support affected individuals. This can foster more inclusive environments, improve mental health resources, and promote overall wellbeing within Muslim communities. Second, by examining how perceived discrimination affects health across two distinct local contexts, and identifying neighborhood factors and strategies that can mitigate this impact, this study provides actionable insights for policymakers seeking to promote inclusivity. Notably, the focus group will not only deepen the topics of this study, but will also identify protective factors not specifically measured in the survey. It explores broader local strategies and initiatives that could (also) mitigate the adverse health effects of discrimination. This participatory approach resonates with public administration literature emphasizing co-creation and inclusive governance as essential for navigating complex local challenges (Baldwin, 2019; Vivier & Sanchez-Betancourt, 2023). Consequently, the findings are especially relevant to public administration where reducing local health inequalities is a persistent challenge (Rydin et al., 2012).

The next section presents the theoretical framework, followed by an explanation of the research design. Then, I present the quantitative survey findings, followed by qualitative insights from the focus group. Finally, conclusions and recommendations will be discussed.

Theory

In this section, scientific theory, academic discussions, and empirical findings will be presented. First, I will introduce the key concepts of discrimination used in this study, discussing the academic debates surrounding "major" and "everyday" discrimination, and highlighting the value of incorporating both concepts. Second, I will define the two health concepts central to this study, and explain how everyday and major discrimination (slightly differently) relate to these health outcomes. Third, local-level protective factors that may buffer adverse health effects in the wake of discrimination will be explored, providing valuable insights for policies and governance. These factors are then integrated into my self-designed "Protective Factors Framework" (PFF), which suggests that neighborhood conditions are key in alleviating discrimination's adverse health effects. The final part elaborates on the qualitative focus group, which aims to identify other neighborhood factors and local strategies (beyond those measured in the survey), that could mitigate the adverse health effects of discrimination. The part explains how this participatory governance approach could help navigate complex policy issues.

Perceived discrimination: considering everyday and major forms

Perceived discrimination can be defined as "an individual's perception of being treated unfairly by other people due to some personal attribute" (Ayalon & Gum, 2011, p.587). Traditionally, scholars focused on major experiences of discrimination and their effects on health outcomes. Major discrimination refers to significant, often life-altering instances of unfair treatment that typically occur in institutional or economic domains, such as employment, education, housing, or interactions with law enforcement (Small & Pager, 2020; Williams & Mohammed, 2008). Examples include being rejected for housing, a job, or being harassed by the police (Sternthal et al., 2011).

However, critical scholars argued that this overwhelming focus on major discrimination left the consequences of everyday discrimination underexplored (Essed, 1991; Harnois et al., 2019). Whilst major discrimination experiences concern events in the past, possibly years ago, that were often detrimental to one's economic outcomes, everyday discrimination refers to frequent, subtle, interpersonal forms of discrimination occurring repeatedly over the (daily) life-course (Small & Pager, 2020; Williams et al., 1997). Examples include receiving poorer service or being treated with less courtesy, also warranting empirical attention (Ayalon & Gum, 2011; Small & Pager, 2020).

After groundbreaking research on the nature of everyday racism and discrimination

by Essed (1991), as well as the introduction of the Everyday Discrimination Scale (Williams et al. (1997), the awareness of its empirical and societal importance increased. For example, it was found that everyday discrimination was more prevalent than major discrimination. Among socially disadvantaged groups in the United States, it was found that 33.5% of the respondents reported major lifetime discrimination while 60.9% reported day-to-day discrimination (Kessler et al., 1999). Based on these findings and discussions, this study will address major *and* everyday discrimination among the Muslim population specifically, which has thus far been underaddressed in the literature.

How discrimination relates to self-assessed health and mental wellbeing

In investigating the health consequences of everyday and major discrimination, this study focuses on two health outcomes: self-assessed health and mental wellbeing. Self-assessed health refers to an individual's subjective evaluation of their overall health status, a concept widely used in previous research (Bombak, 2013). Based on Tennant et al. (2007), mental wellbeing refers to a state of positive psychological functioning characterized by emotional resilience, life satisfaction, and the ability to maintain fulfilling relationships. By distinguishing these concepts, the study ensures greater precision in understanding the effects of perceived discrimination on different health dimensions. This aligns with broader research indicating that discrimination can influence multiple health aspects, necessitating this multidimensional approach (Pascoe & Richman, 2009).

A well-established body of research has demonstrated that perceived discrimination negatively affects self-assessed health and mental wellbeing (see Pascoe & Richman, 2009 for an overview). This association is particularly well-studied in the United States, where discrimination is often analyzed in the context of racial health disparities. Scholars have identified mechanisms through which discrimination contributes to adverse health outcomes. Discrimination acts as a stressor, leading to psychological distress and reduced self-esteem, which in turn negatively affects health (Williams & Collins, 1995). Studies have linked discrimination to higher levels of depression and anxiety, and lower life satisfaction (Araujo & Borrell, 2006; Pascoe & Richman, 2009). Although not this study’s focus, some evidence suggests that perceived discrimination may also contribute to physical health problems, including elevated blood pressure. However, these findings remain less consistent compared to the better documented effects on psychological health (Todorova et al., 2010).

Importantly, research suggests that everyday discrimination may have a more substantial negative effect on health outcomes than major discrimination (Small & Pager,

2020). This is likely due to the cumulative nature of everyday discriminatory encounters, which create prolonged stress exposure over time (Ayalon & Gum, 2011; Small & Pager, 2020). While major discrimination events, such as being denied a house, can be life-altering, they often occur less frequently. Thus, the persistent, routine nature of everyday discrimination can compound over time, gradually eroding mental wellbeing and overall health (Small & Pager, 2020). These findings reinforce the importance of considering both discrimination forms when examining health outcomes, as done in this study.

While the discrimination-health link is recognized, research on Muslim populations specifically remains underdeveloped. However, available studies indicate that Muslims report higher levels of perceived discrimination than other religious groups (Lindemann & Stolz, 2020). A recent Scandinavian study found that Muslims with an immigrant background were significantly more likely to report discrimination than non-Muslims, with these experiences linked to poorer health outcomes (Ishaq et al., 2024). Furthermore, a literature review synthesizing findings from 15 studies confirmed a link between perceived discrimination and negative health outcomes among Muslims in Western societies (Bolouri, 2022). These findings highlight the urgent need for research on the health consequences of discrimination among Muslims, particularly within the Dutch context where such studies remain scarce.

Based on the reviewed literature on perceived discrimination and its relation to health outcomes, two hypotheses can be formulated:

> **H1:** There is a negative association between perceived discrimination (i.e. major and everyday forms) and the self-assessed health and mental wellbeing of Muslims.
>
> **H2:** The negative association between perceived discrimination and the self-assessed health and mental wellbeing of Muslims is stronger for everyday discrimination compared to major discrimination.

Local protective factors in the discrimination-health relation

Dutch research on the perceived discrimination-health link among Muslims has not yet examined local factors that might buffer discrimination's negative health effects. This represents a missed opportunity as studies have shown positive relations between perceived neighborhood quality and physical and mental health (e.g. Aneshensel & Sucoff, 1996; Dalgard & Tambs, 1997; Macintyre & Ellaway, 2003). For example, subjective ratings of the physical, social and service environments of a neighborhood had a significant positive effect on self-rated health measures among middle-aged and older adults in the U.S. (Wen et al.,

2006; Weden et al., 2008).

Though research in this area is limited, studies among disadvantaged groups suggest that neighborhood factors can buffer the health effects of discrimination. For example, higher minority density has been linked to weaker discrimination-health associations (Yang et al., 2016), and neighborhood cohesion has shown protective effects among LGB[1] adults (Tran, 2015). These findings show the potential of neighborhood factors, acting as "protective factors" in the perceived discrimination-health relation. For local governance, this indicates that investing in neighborhood factors may help mitigate the health impacts of discrimination, an opportunity underexplored among Muslim communities.

Introducing protective factors: neighborhood social cohesion and quality of intergroup contact

Building on the scholarly work in the previous paragraph, this study introduces two protective factors that could mitigate the adverse health effects of major and everyday discrimination. This provides the basis for my self-designed Protective Factors Framework (PFF).

Perceived neighborhood social cohesion

"Social cohesion is often considered a group-level construct that refers to the extent of connectedness and solidarity among groups in a society" (Cail et al., 2024, p. 1079). Neighborhoods with high social cohesion foster a sense of belonging, providing a supportive environment that helps residents cope with stressors from within and beyond the neighborhood (Bateman et al., 2017; Ross & Mirowsky, 2001; Sampson et al., 1997). Research has demonstrated that better perceptions of neighborhood cohesion may help prevent negative health effects (Hailu et al., 2021; Stockdale et al., 2007). For example, in the United States it has been found that residents of neighborhoods with higher social cohesion were less likely to suffer from hypertension (Mujahid et al., 2008). Furthermore, better neighborhood cohesion perceptions were found to mitigate the negative effect of racial discrimination on depressive symptoms among African American adolescents (Saleem et al., 2018). Other compelling evidence comes from a recent 17-year follow-up study of Dutch adults, which found that individuals with higher perceived neighborhood cohesion reported better health (Cail et al., 2024).

[1]LGB stands for Lesbian, Gay and Bisexual individuals

Based on these findings, it can be theorized that individuals in neighborhoods with high cohesion may adopt effective coping strategies to handle discrimination or other social adversities, reducing their negative health effects. Notably, most studies measuring the potential of neighborhood social cohesion were conducted among racialized or ethnically disadvantaged groups. Among Muslim populations specifically, this potential has been underexplored in the Netherlands and beyond. However, as several studies find that neighborhood cohesion could improve health outcomes, or could mitigate adverse health effects in the wake of adversities, I will hypothesize that this can be applied to the Muslim population.

> **H3a:** The association between perceived discrimination (i.e., major and everyday forms) and the self-assessed health and mental wellbeing of Muslims is weakened by better perceptions of neighborhood social cohesion.

Quality of intergroup contact

Based on intergroup contact literature, this protective factor refers to the quality of interactions with Dutch non-Muslims, assessing trust, support, and comfort in social settings (Pettigrew & Tropp, 2006). Positive intergroup contact has long been recognized as a crucial factor in reducing prejudice and fostering mutual understanding (Allport, 1954). This "contact effect" occurs via several mechanisms. Research has shown that intergroup contact could diminish feelings of anxiety and increase intergroup trust. Another contributing factor is that contact could increase knowledge about other groups, which could help in reducing perceived threat (Pettigrew & Tropp, 2006). Conversely, when intergroup encounters are experienced as rather negative, existing stereotypes could be enhanced, deteriorating intergroup trust or even leading to outgroup avoidance (Graf et al., 2014; Meleady & Forder, 2018).

In the context of Muslims living in non-Muslim majority neighborhoods, it can be theorized that *positive* contact with non-Muslims could be beneficial to reduce strict group boundaries and to increase feelings of belonging. Positive intergroup contact, characterized by respect and mutual acceptance, may help mitigate the stress caused by discriminatory experiences, thereby alleviating their adverse health outcomes. Conversely, the *absence* of positive intergroup contact could exacerbate the health effects of discrimination, as individuals may lack cross-group support and experience social exclusion.

H3b: The association between perceived discrimination (i.e., major and everyday forms) and the self-assessed health and mental wellbeing of Muslims is weakened by positive intergroup contact.

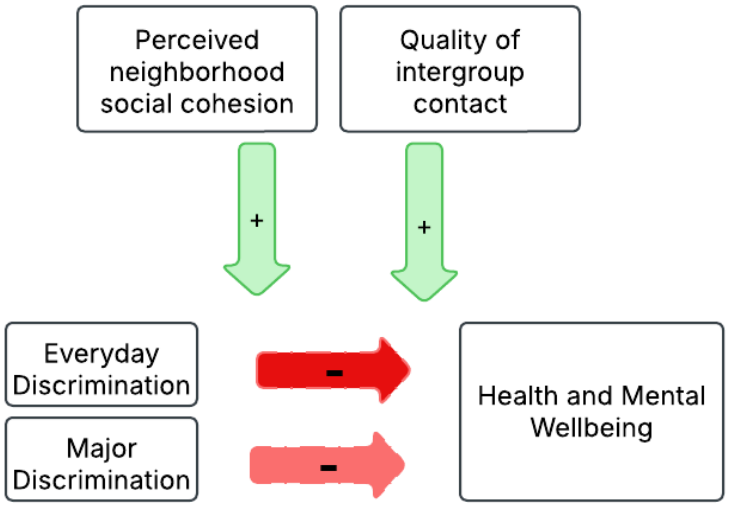
Proposing the "Protective Factors Framework" (PFF)

Drawing on existing literature while introducing a new analytical perspective, I have developed the Protective Factors Framework (PFF), which provides a structured approach to examining how local-level conditions influence health outcomes for Muslim residents facing discrimination. The PFF integrates findings on discrimination and health while clearly emphasizing the role of subjective neighborhood factors as potential buffers, an aspect that is understudied. This framework adds to the scholarly work which reinforced the idea that governance at the local level can contribute to enhancing public health outcomes through targeted interventions (Arcaya et al., 2024; Dam et al., 2023; Roux, 2016). The PFF can provide insights into which factors at the local level could be invested in to mitigate adverse health effects in the wake of discrimination.

Thus, existing research has not examined how subjective neighborhood factors may buffer the health effects of perceived discrimination among Muslims in the Netherlands. The PFF (see Figure 1) addresses this gap by offering a novel, integrated framework that can be applied to other local contexts.

Figure 1

Protective Factors Framework (PFF)



The figure conceptualizes the interplay between perceived discrimination, health outcomes, and neighborhood-level protective factors. It hypothesizes a negative association between perceived discrimination and health and mental wellbeing of Muslims (H1). For everyday discrimination, this negative association is expected to be stronger (H2). The framework then introduces two factors as potential buffers, positing that they can mitigate adverse health effects of discrimination: perceived neighborhood social cohesion (H3a) and quality of intergroup contact (H3b).

Local strategies, policies or initiatives that could mitigate adverse discrimination effects

As mentioned earlier, this study adopts a mixed-methods approach. The quantitative survey statistically tests the Protective Factors Framework (PFF), examining whether quality of intergroup contact and perceived neighborhood cohesion can buffer the (hypothesized) negative health effects of perceived discrimination. The qualitative focus group extends beyond these predefined factors by exploring additional local strategies, policies, or initiatives that may help Muslim residents cope with discrimination's adverse effects. This complementary approach not only strengthens the study's analytical depth but also ensures that insights are informed by the lived experiences of affected communities. Given that Rotterdam lacks policies addressing the health consequences of (Muslim) discrimination, these findings can offer valuable groundwork for (municipal) initiatives aimed at improving wellbeing among Muslim residents. This part delves into public administration literature, highlighting the importance of this participatory approach in navigating complex issues.

Local-level governance plays a crucial role in addressing societal challenges, particularly in diverse urban settings where policy outcomes are shaped by complex social dynamics (Wagenaar, 2007). Traditional hierarchical policymaking, which relies on top-down decision-making, often struggles to effectively address localized issues due to the complex nature of social systems (Hajer & Wagenaar, 2003). Complexity theory suggests that neighborhoods function as dynamic, interconnected systems, where multiple actors, including residents, policymakers, and community organizations, continuously interact and influence one another. In such contexts, rigid, centralized policy solutions often fail because they cannot account for the lived experiences at the neighborhood level (Wagenaar, 2007; Hajer & Wagenaar, 2003). Instead, adaptive governance approaches that emphasize co-creation are better suited to harnessing this complexity (Fung & Wright, 2001; Wagenaar, 2007).

Participatory governance models offer a way to incorporate input from residents into decision-making, ensuring that policies are not only theoretically sound but also practically

effective (ibid). This aligns with broader public administration debates on participatory policymaking, where citizen involvement is not merely symbolic but a fundamental strategy for addressing governance challenges in pluralistic societies (Dryzek, 1990; Innes & Booher, 2003). As stated by Axelrod and Cohen (1999): “Participatory arrangements have the effect of removing traditional barriers to the exchange of knowledge and information in the neighborhood system” (p.80). Moreover, research shows that inclusive governance structures, where residents have a voice in shaping interventions, can improve trust in institutions (Skelcher & Torfing, 2010).

This study builds on these governance insights by actively involving Muslim residents in discussions on how local strategies can mitigate the health consequences of discrimination. By centering their voices, this research not only identifies policy-relevant neighborhood interventions but also contributes to inclusive governance. This approach is particularly relevant in Rotterdam, where addressing the discrimination-health link at the neighborhood level remains largely uncharted territory.

Research design

This section will outline the methods used to answer the research question. First, the mixed-methods design of the study will be elaborated upon. Second, the case-study section outlines the two selected Rotterdam neighborhoods. Third, the targeting strategy and data collection will be explained for both methods. Fourth, a thorough explanation will be given of the operationalization of the concepts into measurable variables in the survey. Then, I introduce the topic list of the focus group. Finally, ethical considerations will be discussed.

Methodology: a mixed-methods design

Combining a quantitative survey and a qualitative focus group strengthens the research in two ways. First, the focus group deepens the topics of the survey, and extends beyond the predefined protective factors measured in the survey. This allows for an in-depth exploration of additional local strategies or policies that may help Muslims cope with discrimination's adverse health effects. Literature emphasizes that such participatory governance approaches enhance policymaking (e.g., Baldwin, 2019). Co-creating knowledge *with* communities fosters context-sensitive actions that quantitative methods alone may not reveal.

This relates to another strength of combining methods: offsetting their individual limitations. Quantitative data provides generalizability, but lacks depth, whereas qualitative insights offer rich, in-depth narratives but lack representativeness or statistical power (Boeije, 2009; Toepoel, 2015). Thus, the complementary approach strengthens the study's explanatory power, providing policymakers with both measurable trends and first-hand derived qualitative insights.

Cases: two neighborhoods in Rotterdam

The neighborhoods of Feijenoord and Schiebroek provide interesting cases due to their contrasting socio-economic compositions and demographic profiles (see Table 1). Feijenoord, characterized by a larger population and a higher share of residents with a Turkish or Moroccan background, represents a more diverse and socio-economically disadvantaged setting, with a predominantly rental-based housing market (Allecijfers, 2025). In contrast, Schiebroek reflects a relatively more affluent environment, with higher homeownership rates and a greater proportion of highly educated citizens. These differences create distinct contexts where discrimination and its health effects may manifest differently, with varying levels of perceived cohesion and intergroup contact in each neighborhood.

Table 1

General Records on the Two Neighborhoods of Interest (Allecijfers, 2025)

Neighborhood feature	**Feijenoord**	**Schiebroek**
Number of residents	79.440	17.115
Share of citizens with Turkish or Moroccan background	39.2%	26.8%
Average house value	€302.000	€370.000
Share of rental housing	79.0%	61.0%
Share of citizens with high education	26.3%	37.2%

Targeting strategy and data collection

Quantitative survey

To recruit respondents for the quantitative survey, a community-based convenience sampling strategy was employed, recognizing the low institutional trust among Muslim populations in Western Europe (Geurts & Spierings, 2025). Traditional recruitment methods may not be as effective for populations with institutional distrust, making direct engagement within trusted community spaces essential. Thus, while convenience sampling has limitations regarding generalizability and representativeness (Toepoel, 2015), it is particularly effective for accessing harder-to-reach populations (Morling, 2020). To enhance participation, I collaborated with SPIOR, the main Muslim organization in Rotterdam. In Schiebroek, I attended an Iftar to present the study and facilitate on-site data collection, followed by survey distribution via a local Muslim group chat and a month-long participation window at the Mosque. In Feijenoord, I worked with community centers to share the survey. Additionally, I conducted in-person data collection near key locations such as Mosques and Islamic primary schools.

The target sample size was at least 50 respondents per neighborhood, aiming for a total sample size of 100, aligning with survey research recommendations (Toepoel, 2015). Inclusion criteria required that respondents self-identify as Muslim, reside in one of the two neighborhoods, and be at least 18 years old. The minimum age was set to ensure respondents had sufficient life experience to reflect on perceived discrimination and its health effects, while the absence of an upper age limit allowed for comparisons across different life stages.

Informed consent was obtained both verbally and through the survey before

participation. Respondents could complete the survey either online via an information sheet with a QR code leading to the Qualtrics platform or on paper. The survey was available in Dutch and English, with an Arabic-language option provided if requested. Paper responses were manually entered into the Qualtrics system. SPSS was used to analyze the data.

Qualitative focus group

The final survey question gauged respondents' interest in participating in a focus group, giving them the opportunity to leave their contact details in the survey if interested. Organizing the focus group *post-survey* allowed for preliminary data analysis, providing insights that could enhance the group discussion. Also, participants who completed the survey were already familiar with the research topic. The maximum sample size for the focus group was six participants, mixing residents from the two neighborhoods. This ensured that constructive conversations about local level dynamics could be held. Methodological literature on focus groups highlights that their composition should be homogenous regarding participants' background, but heterogeneous regarding their experiences (Morling, 2020). Therefore, the focus group was composed of participants that all self-identified as Muslim, but were of different genders and ages to ensure heterogeneity. In May 2025, the discussion took place at Erasmus University.

Variables in quantitative survey

Definitions of all key concepts were provided in the theoretical framework. This part specifically explains the measurement of these concepts. For an *integrated* overview of the concepts, including their definitions, (methodological) justifications, indicators, and supporting literature, the Operationalization Table in Appendix A can be consulted. The Dutch paper-based version of the survey is attached in Appendix B.

Dependent variables

Self-assessed health

Respondents received the following question: "How would you rate your health in general?" Respondents could choose between: (1) poor, (2) fair, (3) good, (4) very good, and (5) excellent. As highlighted by Bombak (2013) this measure "allows respondents to prioritize and evaluate different aspects of their health, maximizing the measure's sensitivity to respondent views of health" (p.1).

Mental wellbeing

Mental wellbeing was measured using the 7-item Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS), consisting of specific statements related to mental health (Tennant et al., 2007). Strong features of this scale relate to the positive wording of the items, ensuring that respondents focus on wellbeing rather than distress when reading the items and making their judgments, and the broad range of validity and reliability measures that were used to assess the scale with positive outcomes on all criteria (ibid). Respondents read the following text in the survey: "Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks." The statements were: (a) I've been feeling optimistic about the future; (b) I've been feeling useful; (c) I've been feeling relaxed; (d) I've been dealing with problems well; (e) I've been thinking clearly; (f) I've been feeling close to other people; and (g) I've been able to make up my mind about things. Response categories included: (1) none of the time, (2) rarely, (3) some of the time, (4) often, and (5) all of the time.

A mean score across the seven mental wellbeing items was calculated for each respondent, resulting in the creation of this dependent variable. A reliability test was conducted to check internal consistency among the items.

Independent variables

Everyday experiences of discrimination

The widely-accepted abbreviated version of the Everyday Discrimination Scale, developed by Williams et at. (1997), was used to measure the prevalence of everyday discrimination. This scale was proven to be reliable as indicated by its strong internal consistency (Cronbach's α=.77). The abbreviated version consists of five items (as opposed to nine items), reducing the burden on respondents, but still allowing specific insights into their discrimination experiences.

Respondents received the question: "In your day-to-day life how often have any of the following things happened to you?". The list of statements included: (a) you are treated with less courtesy or respect than other people; (b) you receive poorer service than other people at restaurants or stores; (c) people act as if they think you are not smart; (d) people act as if they are afraid of you; and (e) you are threatened or harassed. For every statement, respondents were able to choose between the following categories: (1) never, (2) less than once a year, (3) a few times a year, (4) a few times a month, (5) at least once a week, and (6) almost everyday.

A mean score across the five everyday discrimination items was calculated for each

respondent, resulting in the creation of this independent variable. A reliability test was conducted to check internal consistency.

Major experiences of discrimination

In order to measure this concept, the six-item Major Experiences of Discrimination Scale (Sternthal et al., 2011) was employed. Respondents answered the following question: "Can you tell me if any of the following has ever happened to you": (a) at any time in your life, have you ever been unfairly fired from a job?; (b) for unfair reasons, have you ever not been hired for a job or internship?; (c) have you ever been unfairly stopped, searched, questioned, physically threatened, or abused by the police?; (d) have you ever been unfairly discouraged by a teacher or advisor from continuing your education?; (e) have you ever been unfairly prevented from moving into a neighborhood because the landlord or a realtor refused to sell or rent you a house or apartment?; and (f) have you ever been unfairly denied a bank loan? Respondents could choose between the answer categories (1) yes, and (2) no. In the analysis, a sum score was created in which respondents received one point for each time they had experienced major discrimination. This resulted in a continuous variable ranging from 0 (no incidence of major discrimination) to 6 (having experienced all types of major discrimination).

Scholars did not conduct an internal consistency test of the items. Since the items reflect distinct types of major discrimination experiences, there is no expectation that they would strongly correlate with one another (e.g. Raj et al., 2022). Important to mention is that the original wording of the items has been used with only one adaptation. In item b, the word 'internship' was added as this also relates to work-related settings and caters better to younger residents.

Moderator variables

Perceived neighborhood social cohesion

In order to measure perceptions of neighborhood social cohesion, a scale was adopted from a scientific article published in the American Journal of Public Health (Kandula et al., 2008). Scholars constructed the scale based on five conceptually related items designed to capture key aspects of social cohesion, such as trust, mutual help, and shared values within the neighborhood. This scale was reliable, demonstrating strong internal consistency (α=.70).

Respondents received the question: "Please indicate the extent to which you agree with the following statements about your neighborhood." The statements were: (a) people in

my neighborhood are willing to help each other; (b) people in this neighborhood generally do not get along with each other; (c) people in this neighborhood can be trusted; (d) people in this neighborhood do not share the same values; and (e) most people in this neighborhood know each other. Response categories included (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree.

Item b and d were reversely coded after data collection to ensure that a higher value indicates a more positive perception of cohesion. Ultimately, a mean score was calculated across the five items. A reliability test was conducted to check internal consistency.

Quality of intergroup contact

Based on intergroup contact literature, this moderator measures the quality of interactions with Dutch non-Muslims, assessing trust, support, and comfort in social settings (Davies et al., 2011; Pettigrew & Tropp, 2006). This moderator variable was informed by theory, which culminated into a self-designed scale consisting of four items. Respondents received the following questions: (a) How often do you have positive interactions with Dutch non-Muslims (e.g., feeling respected or welcomed)?; (b) Do you have close friendships with Dutch non-Muslims?; (c) To what extent do you feel supported by Dutch non-Muslims in your neighborhood or community?; and (d) How comfortable do you feel participating in activities or events where most attendees are Dutch non-Muslims?

All questions were answered on a scale from 1 to 5, with distinct labels tailored to each item. For item (a), the scale ranged from "Never" to "Very often." For item (b), responses ranged from "Not at all" to "More than 5 close friendships." For item (c), the scale spanned from "Not at all" to "A great deal." For item (d), the scale ranged from "Very uncomfortable" to "Very comfortable." This approach ensured that the response categories were appropriately aligned with the content of each question.

In the analysis, a mean score was calculated across the items.[2] A reliability test was conducted to check the internal consistency of this scale.

Control variables

The control variables were deliberately selected for this study. A more extensive, literature-based justification for their inclusion can be found in Appendix C.

[2] One item (item b) in the scale originally had only four answer categories. To ensure it aligned with the 5-point structure of the other items and contributed equally to the mean score, the response options were proportionally rescaled: ***Not at all*** = 1, ***1 or 2*** = 2.5, ***3–5*** = 4, and ***More than five close friendships*** = 5.

Educational level

Educational level was defined as the highest level of education successfully completed. The following question was asked: “What is the highest level of education you have successfully completed?” Based on common classifications in the Dutch educational system (e.g. Ministry of Education, Culture and Science, 2021), respondents chose one of the following categories: (1) elementary school, (2) Vmbo-b/k, mbo1, (3) Vmbo-g/t, substructure havo, substructure vwo, (4) mbo2, mbo3, (5) mbo4, (6) havo, vwo, (7) hbo-bachelor, (8) Wo-bachelor, hbo-master, (9) Wo-master, doctor, and (10) other (..).

Financial hardship

Aligning with the operationalization of financial hardship by Homer et al. (2023), the following question was asked: “Do you ever have difficulty making ends meet at the end of the month?” Respondents selected one of the following categories: (1) never, (2) rarely, (3) sometimes, (4) often, (5) always, and (6) preferred not to say.

Gender

Respondents indicated their gender as (1) male or (2) female. This variable was recoded into a dichotomous variable ‘female’, with (0) being males and (1) females.

Religiosity

Religiosity was based on in-group identification and religious attendance. Respondents received the following two questions: First, “How important is Islam for you where (1) means low importance and (5) means very important?” Second, “Apart from special occasions such as weddings and funerals, how often do you attend religious services nowadays?” Respondents could choose between the following categories: (1) never, (2) seldom, (3) at least once a month, (4) once a week, (5) more than once a week, and (6) every day. This operationalization aligns with measures in the European Social Survey (Billiet, 2002). In the analysis, in-group identification and religious attendance were treated as separate variables.

Age

“What is your age (in a round number)?” was asked in the survey.

Length of residency

The following question was included: "How long have you lived in the Netherlands?" Respondents chose between (1) less than 5 years, (2) 5–10 years, (3) 11–20 years, (4) more than 20 years, and (5) I was born in the Netherlands.[3]

A dummy variable was created in the analysis with (0) for Dutch-born and (1) for foreign-born individuals.

Topic list focus group

A topic list was made based on the theoretical framework and the first survey results (see Appendix D). A semi-structured guide (Morling, 2020) directed the discussion while allowing space for interaction and reflection. The data were analyzed using NVivo.

Ethical considerations

First, respondents should be well-informed of the research aims and the anonymous nature of participation (Morling, 2020; Zapata-Barrero & Yalaz, 2020). This was explained in the invitations for the quantitative survey, in-person during community center and Mosque visits, and on the front-page of the survey in which informed consent was asked. Prior to the focus group, participants also read an information sheet and consent form, and gave permission for an audio recording of the interview to be made for analysis purposes. Participant consent was requested before including relevant quotes in the paper.

Second, the traditional researcher-participant relation could be experienced as hierarchical by participants (ibid). Importantly, I made clear that participants could quit partaking at any preferred moment. Finally, the cooperating stakeholders, such as SPIOR and the community centers, and the Muslim participants will receive the final report. An offer will be made to present the results during an information evening.

[3] Respondents who were born in the Netherlands were asked to tick box number 5. This was clearly stated in the survey to avoid any confusion.

Analysis

This section presents the findings, linking them to the previously outlined theoretical framework and the broader academic literature. First, the descriptive statistics of the quantitative survey will be discussed. Specific attention will be paid to the areas in which major discrimination is experienced. Second, the regression analyses will be shown and thoroughly interpreted. This part statistically tests my Protective Factors Framework, and will either confirm or (partially) reject the hypotheses. Two regression tables will be presented: one for the association between perceived discrimination (everyday and major) and mental wellbeing, and one for the association with self-assessed health. The moderator variables were added to assess whether the discrimination-health link was alleviated by neighborhood factors. Finally, the focus group insights will be discussed, enriching the quantitative findings and highlighting protective factors (beyond those measured in the survey) that could mitigate discrimination's adverse health effects.

Descriptive statistics

In Table 2, the descriptive statistics are visualized. A total sample size of 152 was obtained with a relatively equal distribution of respondents in Schiebroek (n=79) and Feijenoord (n=73). This dataset positively exceeds the target of 50 respondents per neighborhood, ensuring a robust analysis. However, males (68%) are overrepresented compared to females (32%), which should be taken into account in the results.

Cronbach's alpha was used to assess the internal consistency of the scales. Values above .60 are acceptable, with values above .70 indicating good reliability, aligning with methodological guidelines (Taber, 2017; Van Griethuijsen et al., 2014). All values met the acceptable threshold, with most scales showing good reliability. Notably, my self-designed Quality of Intergroup Contact Scale showed strong internal consistency (α=.78), suggesting it is a reliable measure that could be safely considered for future research.

The table shows some neighborhood differences. In Schiebroek, average mental wellbeing (m=3.74) was higher than in Feijenoord (m=3.62), with a significant difference (t=-1.78; p=.039). Feijenoord residents also reported more major discrimination experiences (m=2.22) than those in Schiebroek (m=1.35) (t=4.17; p<.001). Important to reiterate is that the answers on the major discrimination scale could entail experiences of respondents within, but also outside neighborhoods. Additionally, both moderator variables were more favorably rated in Schiebroek. However, despite lower evaluations in Feijenoord, the scores were still above the midpoint, suggesting positive perceptions of cohesion and intergroup contact there.

Table 2

Descriptive Statistics of all Variables

		Total		Schiebroek		Feijenoord		Mean difference	Scale reliability
	Range	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**		**α**
Dependent									
Self-Assessed Health	1-5	3.22	0.93	3.11	0.92	3.33	0.93	0.22	
Mental Wellbeing	1-5	3.68	0.44	3.74	0.52	3.62	0.31	0.12**	.78
Independent									
Everyday Discrimination	1-6	2.05	0.75	1.98	0.88	2.13	0.57	0.15	.81
Major Discrimination	0-6	1.77	1.34	1.35	1.12	2.22	1.43	0.87*	
Moderator									
Perceived Neighborhood Social Cohesion	1-4	2.60	0.42	2.70	0.44	2.50	0.37	0.20**	.65
Quality of Intergroup Contact	1-5	3.31	0.68	3.50	0.73	3.10	0.57	0.40*	.78
Control									
Female	0-1	0.32		0.38		0.26		0.12	
Age	18-76	39.88	13.50	39.47	14.03	40.33	12.98	0.86	
Education	1-9	6.27	1.48	6.16	1.67	6.38	1.24	0.22	
Financial Hardship	1-5	1.58	0.87	1.86	1.00	1.27	0.56	0.59*	
Religious identification	1-5	3.39	1.22	3.66	1.25	3.11	1.14	0.55**	
Religious attendance	1-6	3.76	1.23	3.66	1.21	3.88	1.25	0.22	
Non-native	0-1	0.62		0.54		0.68		0.14	
N	152			79		73			

Note: *p<.001 **p<.05

Areas in which major discrimination is experienced

In Figure 1, the contexts in which Muslims experienced major discrimination are visualized per neighborhood. In Figure 2, major discrimination experiences by age are presented. Reports of nearly all major discrimination types were more frequent in Feijenoord, especially police harassment, reported by 41 residents versus 14 in Schiebroek. There are indications in the literature that the police is especially and preventively present in more disadvantaged neighborhoods that suffer from more disturbance and poor (media) reputation (Kullberg et al., 2021). Especially male youth growing up in such neighborhoods feel unfairly treated due to frequent police controls as found by the Netherlands Institute for Social Research (ibid). As Feijenoord suffers from higher crime levels and is more disadvantaged than Schiebroek (Allecijfers, 2025), this may help explain why significantly more residents report unfair police treatment.

Also worth mentioning is the finding that approximately 50% of respondents in both neighborhoods reported being discouraged by a teacher from pursuing further education, especially experienced among 18-28-year-olds. This could have negative effects, beyond adverse health outcomes, on Muslims. Empirical research found that negative teacher judgments are related to poorer outcomes on self-esteem, future learning achievements, and aspiration levels of students (Zhu et al., 2017). Prior studies also showed that especially youth with migration backgrounds face biased teacher expectations and receive less recognition, which negatively affects their learning outcomes (Vieluf & Sauerwein, 2018). In my data, many Muslim respondents were not born in the Netherlands (62%). It could be the case that these ethnic and religious identities intersect in ways that increase the likelihood of being negatively approached by teachers.

Unfair job/internship rejections were commonly reported across all age groups, except those 59-78 years old. This aligns with Dutch research showing discrimination against applicants with Arabic names, which is often associated with the Islam (Blommaert et al., 2013).

Figure 1

Major Discrimination Types Experienced by Muslim Residents

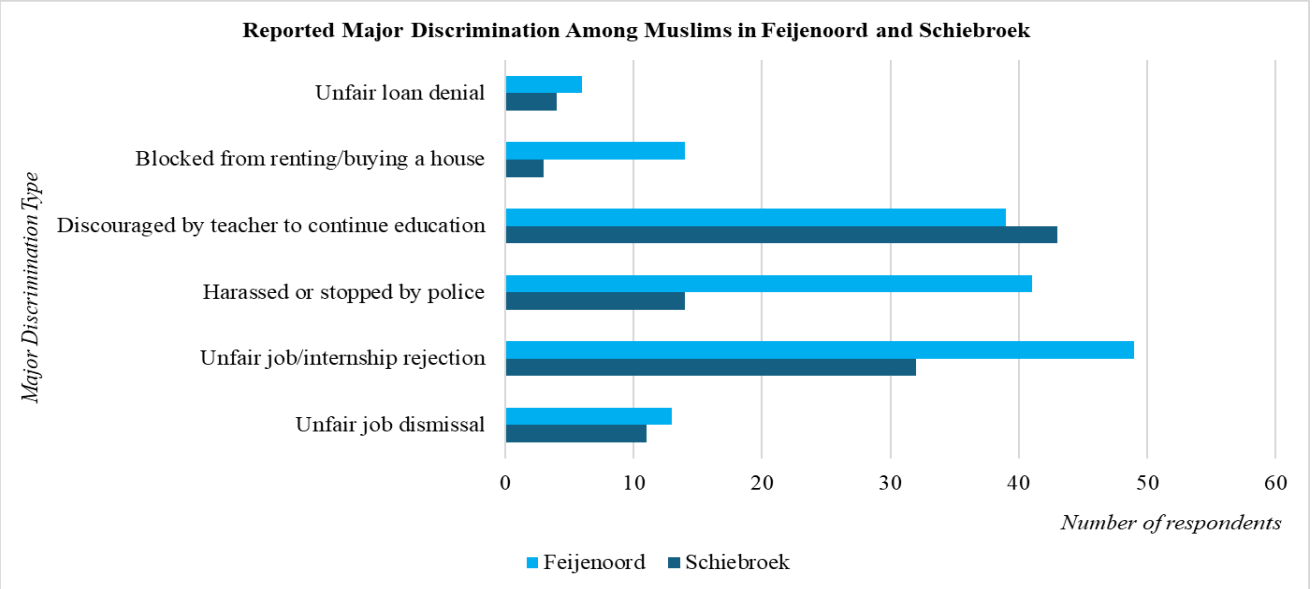
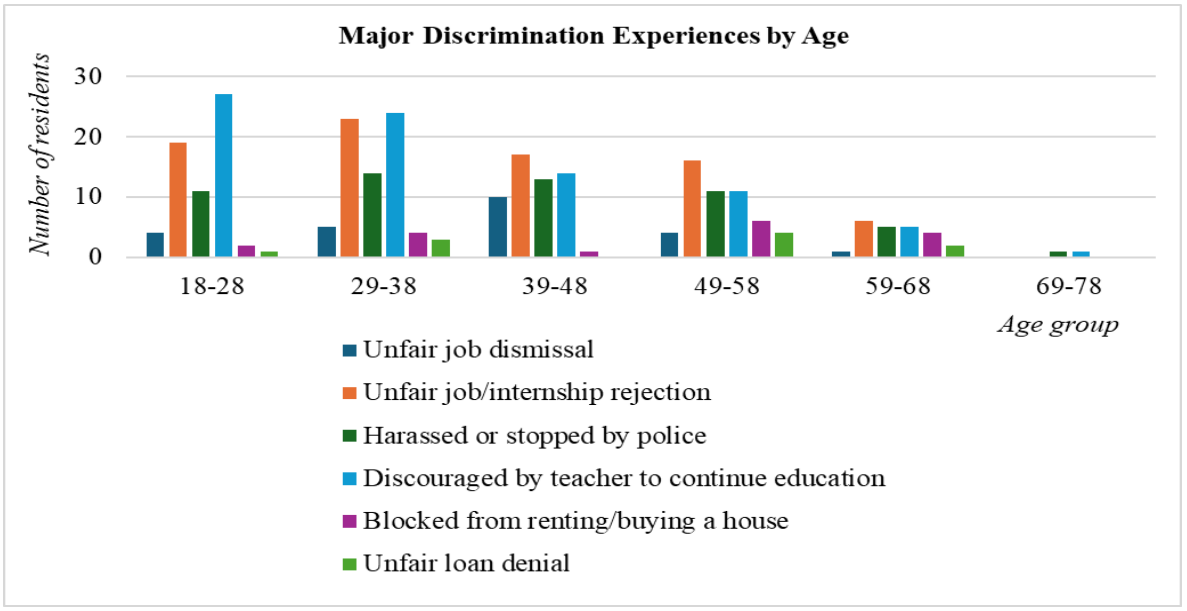


Figure 2

Major Discrimination Types Reported by Different Age Groups



Effect everyday/major discrimination on mental wellbeing

In Table 3, the linear regression analysis measuring the effect of everyday/major discrimination on mental wellbeing is visualized. The first model tests the effect of the discrimination forms on mental wellbeing. The second model adds the moderator, perceived neighborhood social cohesion, and the interaction terms between cohesion and the discrimination forms. The third model includes the second moderator, quality of intergroup contact, with the interaction terms. The final model adds control variables. Normality and linearity checks were executed and these assumptions were met.

Table 3

Multiple Regression Analysis: Effect Everyday/Major Discrimination on Mental Wellbeing

	Feijenoord				**Schiebroek**			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
	B(s.e.)	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**
Constant	3.992 (.137)*	1.092 (.941)	-.783 (1.029)	.833 (1.138)	3.991 (.143)*	1.328 (.882)	.708 (.923)	.600 (1.059)
Major Discrimination	-.033 (.026)	.090 (.197)	.208 (.221)	.209 (.214)	-.059 (.062)	-1.016 (.412)**	-1.152 (.443)**	-1.185 (.475)**
Everyday Discrimination	-.141 (.065)**	.870 (.390)**	1.423 (.439)**	1.091 (.460)**	-.086 (.079)	1.632 (.464)*	1.776 (.428)*	1.938 (.474)*
Cohesion		1.158 (.371)**	1.031 (.350)**	1.013 (.371)**		1.032 (.329)**	.705 (.341)**	.689 (.369)
Cohesion*Major		-.051 (.079)	.005 (.075)	-.025 (.075)		.379 (.156)**	.239 (.146)	.265 (.161)
Cohesion*Everyday		-.399 (.154)**	-.410 (.147)**	-.375 (.160)**		-.674 (.179)*	-.460 (.192)**	-.484 (.206)**
Intergroup Contact			.651 (.205)**	.357 (.255)			.406 (.211)	.544 (.251)**
Intergroup Contact* Major			-.079 (.050)	-.063 (.051)			.161 (.073)**	.154 (.076)**
Intergroup Contact* Everyday			-.156 (.104)	-.080 (.127)			-.208 (.078)**	-.245 (.087)**
Female				-.126 (.094)				.135 (.130)
Age				-.007 (.004)				.003 (.005)
Education				-.036 (.028)				-.053 (.034)
Finance				-.055 (.061)				-.014 (.061)
Religious affiliation				-.005 (.061)				.012 (.065)
Religious attendance				.045 (.058)				-.021 (.052)
Non-native				-.156 (.110)				-.139 (.166)
N	73	73	73	73	79	79	79	79

Note: *p<0.001 **p<.05

Feijenoord

In Model 1, which only includes the two forms of discrimination, everyday discrimination has a significant negative effect on mental wellbeing (b= -.141; p=.034), whereas the effect of major discrimination is negative but does not reach statistical significance (b=-.033; p=.208). In subsequent models, the negative effect of major discrimination is not consistently observed. This generally supports H1, stating that perceived discrimination is associated with poorer mental wellbeing, and H2, as the negative effect of everyday discrimination is more pronounced than that of major discrimination.

In Model 2, when neighborhood social cohesion and its interaction terms are added, a remarkable pattern emerges. The main effect of cohesion is positive and significant (b=1.158, p=.003), indicating that higher perceived cohesion is related to better mental wellbeing. Interestingly, the main effect of everyday discrimination flips: it becomes positive and significant (b=.870; p=.029), while the interaction term is negative and significant (b= -.399; p=.012). This interaction suggests a buffering effect: for respondents who perceive high social cohesion in their neighborhood, the negative impact of everyday discrimination on mental wellbeing is significantly reduced. In fact, higher discrimination scores even relate to better reported mental wellbeing, potentially indicating resilience or group solidarity in cohesive environments. Importantly, this buffering effect was only found for everyday discrimination, not for major discrimination. Therefore, the findings partly support the PFF and H3a, confirming that neighborhood cohesion can mitigate the negative effects of everyday discrimination. Previous research also indicated that cohesion could have a buffering effect among racial minorities in the US (e.g. Saleem et al., 2018) but this was not tested among Muslims in the Netherlands using these discrimination measures.

In Model 3, intergroup contact is added and shows a significant positive main effect (b=.651; p=.002). This suggests that more positive contact with Dutch non-Muslims is associated with better mental wellbeing. However, the interaction terms are not significant, meaning no clear moderating effect was found, refuting hypothesis 3b.

Schiebroek

In Model 1, which only includes major and everyday discrimination as predictors, everyday discrimination has a stronger negative effect on mental wellbeing (b=-.086; p=.280) than major discrimination (b=-.059; p=.344). This aligns with the reasoning of H1 and H2. However, these effects did not reach statistical significance in this sample. On their own, these forms of discrimination do not convincingly show a strong direct association with

mental wellbeing when contextual factors are not considered.

In Model 2, the inclusion of perceived neighborhood cohesion as a moderator leads to notable changes. Similar to the pattern observed in Feijenoord, this moderator appears to buffer the adverse mental health effects of *everyday* discrimination. However, the inclusion of the moderator does not buffer the negative effect of *major* discrimination on mental wellbeing. Instead, this effect became more negative after adding the perceived cohesion measure (b= -1.016, p=.016). This suggests that, while cohesion may help individuals cope with everyday forms of discrimination, it does not offer the same protection against the mental wellbeing consequences of major discriminatory experiences.

In Model 3, the interaction between intergroup contact and everyday discrimination is also significantly negative (b=-.208, p=.010), confirming that positive contact with Dutch non-Muslims reduces the negative consequences of everyday discrimination. Notably, this effect was not observed in Feijenoord. For major discrimination, intergroup contact does not appear to alleviate adverse mental health outcomes. In Model 4, with control variables included, these effects largely persist.

Concluding

In both neighborhoods, H1 and H2 are supported: perceived discrimination negatively impacts mental wellbeing, with the effect of everyday discrimination being more negative. However, everyday discrimination can be buffered by neighborhood factors outlined in my Protective Factors Framework (PFF). In both neighborhoods, the negative impact of everyday discrimination on mental wellbeing is consistently buffered by higher levels of cohesion, supporting H3a. In Schiebroek specifically, contact with Dutch non-Muslims significantly reduced the negative effect of everyday discrimination, confirming H3b. This could potentially be explained by the higher frequency of these positive interactions in Schiebroek (m=3.50) compared to Feijenoord (m=3.10).

Importantly, such buffering effects were not observed for major discrimination in either neighborhood, suggesting that more institutional forms of discrimination are less easily mitigated by social context alone. This is a valuable contribution to existing theory, highlighting the need to investigate other ways in which Muslims could be protected against adverse major discrimination effects.

Thus, the results confirm aspects of the PFF, especially for everyday discrimination, and highlight the role of neighborhood resources in shaping discrimination's psychological impact. This is a key advancement in this field, particularly as this potential has not been

systematically studied among Dutch Muslims.

Effect everyday/major discrimination on self-assessed health

The same procedure was followed in testing the effect of discrimination on self-assessed health. This dependent variable was measured using a single item. Linear regression was used as well, as the categories have a meaningful order, and previous research has shown that this approach is appropriate when the outcome has five or more levels (e.g. Fjell et al., 2020). Moreover, the normality plot of the residuals in the analysis showed that the points closely followed the diagonal line, indicating that the assumption of normally distributed residuals was reasonably met. This method allows for straightforward interpretation of the results and is commonly used in studies examining self-rated health (ibid).

Table 4

Multiple Regression Analysis: Effect Everyday/Major Discrimination on Self-Assessed Health

	Feijenoord				**Schiebroek**			
	Model 1	**Model 2**	**Model 3**	**Model 4**	**Model 1**	**Model 2**	**Model 3**	**Model 4**
	B(s.e.)	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**	**B(s.e.)**
Constant	4.252 (.412)*	8.123 (2.948)**	4.765 (3.135)	7.319 (3.476)**	3.111 (.258)*	-.066 (1.639)	-1.859 (1.802)	-1.031 (1.822)
Major Discrimination	.053 (.079)	.753 (.618)	.131 (.673)	.350 (.654)	-.133 (.111)	-1.644 (.765)**	-1.299 (.864)	-.924 (.817)
Everyday Discrimination	-.489 (.196)**	-2.504 (1.221)**	-1.462 (1.339)	-2.177 (1.405)	.093 (.142)	2.814 (.862)**	2.954 (.836)*	2.962 (.815)*
Cohesion		-1.572 (1.163)	-1.342 (1.066)	-1.161 (1.133)		1.241 (.610)**	.645 (.665)	.665 (.636)
Cohesion*Major		-.279 (.246)	-.184 (.229)	-.332 (.229)		.598 (.289)**	.401 (.285)	.361 (.278)
Cohesion*Everyday		.821 (.484)	.617 (.448)	.736 (.488)		-1.064 (.333)**	-.706 (.375)	-.813 (.354)**
Intergroup Contact			.654 (.626)	-.064 (.780)			.910 (.411)**	1.018 (.432)**
Intergroup Contact* Major			.150 (.154)	.195 (.156)			.067 (.142)	.006 (.131)
Intergroup Contact* Everyday			-.081 (.318)	.039 (.388)			-.305 (.152)**	-.281 (.150)
Female				-.410 (.288)				.262 (.224)
Age				-.011 (.012)				-.019 (.009)**
Education				.069 (.084)				.017 (.058)
Finance				.210 (.185)				-.051 (.105)
Religious affiliation				-.198 (.186)				.071 (.112)
Religious attendance				.035 (.178)				-.111 (.089)
Non-native				-.411 (.335)				-.313 (.287)
N	73	73	73	73	79	79	79	79

Note: *p<0.001 **p<.05

Feijenoord

In Feijenoord, only everyday discrimination exerts a significant negative effect on self-assessed health (b=-.489; p=.015). Major discrimination did not negatively affect this health outcome across all models. The analysis shows that it matters a great deal which health outcome is included in research. Whilst perceived neighborhood cohesion buffered the adverse effects of everyday discrimination on mental wellbeing, the same cannot be observed for self-assessed health. The effect of everyday discrimination on self-assessed health remains negative throughout the models, albeit not significantly in the final two models. This does not provide compelling evidence in support of H3a and H3b, saying that cohesion and intergroup contact could alleviate discrimination's adverse health effects.

These outcomes might be explained by measurement differences. Self-assessed health was measured with a single, general item asking about overall health, without focusing on any specific health dimension. As Bombak (2013) notes, respondents have considerable freedom in how they evaluate such a broad question. In contrast, the mental wellbeing scale consisted of multiple items that specifically targeted psychological health (Tennant et al., 2007), encouraging respondents to reflect more carefully on their mental wellbeing. This difference in measurement depth may partly account for the limited effects observed for this health outcome.

Schiebroek

In contrast to Feijenoord, major discrimination is *negatively* related to self-assessed health across all models, reaching significance in Model 2 (b=-1.644; p=.035). This negative effect was also observed in the regression analysis of mental wellbeing in this neighborhood. Moreover, the interaction terms between major discrimination and cohesion (b=.361; p=.199), and major discrimination and quality of intergroup contact (b=.006; p=.964) did not reach significance. This means that the adverse health effects in the wake of major discrimination are not alleviated by these neighborhood factors.

Everyday discrimination was not negatively related to self-assessed health across the models, which is another difference with Feijenoord, but also with the mental wellbeing measure in Schiebroek in which this negative association was found.

Synthesis

In Schiebroek, major discrimination consistently showed a negative association with both self-assessed health and mental wellbeing, whereas these relationships were not consistently

observed in Feijenoord.

Although everyday discrimination was generally more negatively related to health outcomes in the regressions, its adverse effects on *mental wellbeing* were buffered by perceived neighborhood cohesion and, in Schiebroek, by quality of intergroup contact. These buffering effects were not observed for *self-assessed health*, which could have a methodological explanation as previously discussed.

Moreover, the effects of major discrimination were not mitigated by the protective factors hypothesized in the PFF. These findings highlight that social resources can reduce the psychological toll of everyday discrimination, but that they do not mitigate the consequences of major discrimination.

These insights underscore the need for targeted neighborhood policies and interventions to address the effects of discrimination on health. The focus group highlighted protective factors, directly informing strategies to mitigate discrimination's adverse health effects.

Focus group insights

The focus group took place in May 2025, involving three Muslim residents of Feijenoord and two Muslim residents of Schiebroek. The male-female ratio was 60% - 40% respectively. The first part of the discussion focused upon deepening the topics of the quantitative survey, and sharing some first statistical patterns with the participants. The second part was devoted to brainstorming about protective factors and strategies that could support Muslims who experienced discrimination.

Elaborating on the quantitative survey

As previously discussed, Muslims in Feijenoord experience substantially more discrimination in contact with the police compared to Muslims in Schiebroek. The graph indicating this difference was shown to the participants. One participant from Schiebroek highlighted a potential explanation for the more positive police-community relations in their neighborhood. They noted that local authorities and residents maintain a clear overview of families in vulnerable situations and youths known for causing disturbances. A notable example concerned a group of young people who disrupted the neighborhood and the Mosque during Ramadan. In response, a collaborative initiative was implemented, involving a Moroccan community police officer. The youths were engaged in dialogue, and their interests were explored. As part of the intervention, they were offered the opportunity to shadow police

officers for a day, conditional on their adherence to agreed-upon behavioral standards in the neighborhood. The experience was received positively and improved relations with law enforcement. This is exemplified by the following quote of a Schiebroek participant:

> The boys really enjoyed spending a day accompanying the police. They thought it was very cool: riding in the car with sirens, trying on handcuffs, and so on. (...) A key advantage, perhaps, was that the initiative involved a Moroccan community police officer. That immediately lowered the threshold for engagement (S1).[4]

Thus, locally embedded, culturally informed policing strategies can foster mutual trust and reduce the perceived distance between law enforcement and minority youth (Kammersgaard et al., 2021). In Feijenoord, similar initiatives may prove valuable in fostering the wellbeing of Muslim youth and mitigating discriminatory encounters with the police. Reducing such experiences could also help alleviate adverse health effects associated with perceived discrimination. Feijenoord participants agreed that such an approach could be advantageous.

Another topic elaborated upon were the health consequences of discrimination. This was recognized by all participants, as well as by their families and friends. Discrimination literally makes individuals physically and mentally ill. This involves both major and everyday discriminatory experiences, measured in this study, but also injustice in politics and media. One example raised was the Israeli-Palestinian conflict, which participants described as a source of distress, contributing to feelings of alienation and societal disengagement. Another example was that Muslim parents struggled to find their place in society, but that they also see their children struggling doing the same. This ongoing struggle is distressing for parents, but it also takes a psychological toll on children, often leading to low self-esteem and anxiety. This quote shows a parent's concern about discrimination's intergenerational nature:

> We already had to prove ourselves to secure a place in the job market or in education. Now our children have to prove themselves twice as much to claim that space again. It hits so close to home that especially our children, particularly daughters who wear a headscarf, will face increasing difficulties (S2).[5]

[4] S1= Schiebroek 1: De jongens vonden het hartstikke leuk om 1 dag met de politie mee te rijden. Dat is gewoon stoer, met sirene, en handboeien om en dergelijke. (...). Het grote voordeel, wellicht, is dat het ging om een Marokkaanse wijkagent. Dan is de drempel al lager.

[5] S2=Schiebroek 2: Wij moesten ons al bewijzen om een plekje in de arbeidsmarkt of school te veroveren. Onze kinderen moeten zich nu dubbel bewijzen om die plek weer te nemen. Het is zo dichtbij huis, dat vooral onze kinderen, vooral de dochters die een hoofddoek dragen, het moeilijk zullen krijgen.

This part of the focus group confirmed the finding of the quantitative survey that discrimination has adverse health effects, also among the newest generations. The question of how these effects could be mitigated was explored in the second part.

Protective factors

Participants identified several protective factors that could inform relatively modest policy interventions with the potential to make a meaningful impact on the wellbeing of the Muslim community. Three suggestions mentioned in the focus group are discussed below.

Prolonged contact between Muslims and non-Muslims

During the focus group, participants emphasized that certain forms of discrimination may stem from unfamiliarity and a lack of meaningful intercultural engagement with the Muslim community. Muslims in both neighborhoods highlighted that, once initial contact is made, subsequent encounters with Dutch non-Muslims will become more positive. This aligns with literature and scientific evidence showing that contact can enhance mutual understanding, and reduce prejudice (Allport, 1954; Pettigrew & Tropp, 2006). The following quote underlines this, and also suits the PFF.

> They look at you very strangely when you wear a headscarf, especially in neighborhoods with few Muslims. But once you actually interact with them, that barrier is crossed. The next time you see them, it's a smile, that barrier has then been overcome. (S2).[6]

Participants strongly agreed on the value of intergroup contact and diverse networks for health outcomes. Some municipal support in stimulating this (initial) contact could be useful.

Involving Muslims: centering their voices

Muslim participants perceived current policy processes as predominantly top-down in nature and insufficiently responsive to their needs. A participant in Feijenoord mentioned:

> They develop policies on their own. They come alone, make an appointment with us, and ask what we think. That's the only moment they gather input or ideas. But in the

[6]S2= Schiebroek 2 Ze kijken je heel vreemd aan als je een hoofddoek hebt, vooral in wijken waar veel niet-moslims zijn. Maar zodra je in contact met hun bent, heb je die drempel overschreden. Volgende keer als je ze weer tegenkomt, is het dan een glimlach, dan heb je die drempel overwonnen.

> end, everything has already been decided: the plan is made and already being implemented according to their wishes, not those of residents. (F1)[7]

Such approaches to policy implementation are often insufficiently attuned to the lived experiences and concerns of the neighborhood target group (Wagenaar, 2007; Hajer & Wagenaar, 2003), in this case Muslim communities, contributing to feelings of marginalization and being unheard. It would be beneficial if policies concerning Muslims were developed in dialogue with them, rather than being presented as pre-determined plans. For positive health outcomes, it is valuable for individuals to be taken seriously by institutions and to have a voice in neighborhood policymaking.

Muslim Right Watch

The focus group indicated the lack of willingness among Muslims to seek help, and to report their discrimination experiences. This aligns with research conducted in other European countries (Lindemann & Stolz, 2022). The lack of trust that their experiences are being heard and understood, and that concrete action will be taken, explain this.

However, a participant of Schiebroek mentioned the organization Muslim Right Watch. This is a specific national organization that advocates for the rights of Muslims in the Netherlands.[8] It legally and socially supports Muslims facing Islamophobia, discrimination or institutional injustice, from initial reporting to resolution. Being supported by Muslims specifically can reduce the psychological toll of perceived discrimination, and can increase the feeling of being taken seriously. Awareness of this possibility should be enhanced.

[7] F1=Feijenoord 1: Ze (refereert naar de gemeente) komen alleen, maken een afspraak bij ons, en vragen dan wat we ervan vinden. Alleen dan halen ze wensen en ideeën op. Maar uiteindelijk is alles al klaar, het plan is opgesteld en het wordt al uitgevoerd naar hun wens, niet naar de wens van de bewoners.

[8] See: https://mrwn.nl

Conclusion and Discussion

This mixed-methods study aimed to investigate the association between perceived discrimination (everyday and major) and self-assessed health and mental wellbeing among Muslims living in Schiebroek and Feijenoord. Also, through the novel Protective Factors Framework (PFF), this research intended to find neighborhood factors that could buffer discrimination's adverse health effects. These associations and moderations were tested in the quantitative survey (n=152), whilst the qualitative focus group (n=5) aimed to identify additional strategies, policies or interventions (not measured in the survey), that could also protect Muslims against adverse discrimination effects. This part presents answers to the research question and subsquestions, highlights contributions to existing scholarship, and reflects on strengths and limitations. The thesis concludes with four policy recommendations that could be implemented based on the findings.

Research question, subsquestions and contributions

In both neighborhoods, major and everyday discrimination were frequently reported. Major discrimination experiences were mostly reported in education, in relation to the labor market, and in contact with the police. These findings align with previous research, highlighting that institutional discrimination against Muslims is still a pervasive problem in the Netherlands, and Europe in general (European Union Agency for Fundamental Rights, 2024; Jackson & Doerschler, 2012).

The study generally showed that perceived discrimination (everyday and major) was negatively related to mental wellbeing and self-assessed health. Everyday discrimination had a more negative effect on health outcomes compared to major forms of discrimination. These findings are consistent with previous research and the hypotheses formulated in the current study. It is likely that everyday, routine forms of discrimination exert a stronger impact due to their persistent, cumulative nature, which may lead to prolonged stress and diminished mental wellbeing (Ayalon & Gum, 2011; Small & Pager, 2020).

Perceptions of neighborhood social cohesion and quality of intergroup contact were quite positive in both neighborhoods, with higher levels reported in Schiebroek. In both neighborhoods, perceived neighborhood social cohesion buffered the adverse effect of everyday discrimination on mental wellbeing. Quality of intergroup contact was found to be a protective factor in Schiebroek, also alleviating the negative effect of everyday discrimination on mental wellbeing. Interestingly, the same buffering effects were not observed for the self-assessed health outcome or in the relation between major discrimination and the two

health outcomes. It could be argued that more institutional forms of discrimination are less easily alleviated by contextual factors alone, necessitating the need for further research to find which factors could be meaningful in protecting Muslims against the negative effects of major discrimination. Especially for Schiebroek, where the negative effects of major discrimination were more pronounced than in Feijenoord, this would be of great benefit. The absence of buffering effects for the self-assessed health outcome may be attributed to the general, single-item nature of the measure, not capturing specific dimensions of health (Bombak, 2013). Therefore, I encourage scholars to use different health outcomes to prevent overlooking potential negative effects of discrimination on health, as done in this study.

These findings partly confirm the Protective Factors Framework, and represent a meaningful theoretical and methodological advancement in the scientific literature. Contextual factors such as social cohesion and intergroup contact have the ability to protect Muslims against negative everyday discrimination effects, an effect not previously identified in Dutch scientific literature for this specific population. As reducing local health inequalities remains a key challenge for policymakers (Rydin et al., 2012), these findings are highly valuable and offer policymakers specific directions for action to improve mental wellbeing on the neighborhood level.

The qualitative focus group provided a platform for Muslim residents to actively contribute to shaping additional strategies or policies that could also protect the Muslim community against negative discrimination effects, aligning with public administration literature emphasizing the benefits of participatory governance (Baldwin, 2019; Vivier & Sanchez-Betancourt, 2023). Participants in Schiebroek mentioned that fostering positive interactions between the police and vulnerable youth, such as opportunities to accompany police officers for a day, helped improve the relation between youth and law enforcement. Implementing similar initiatives in Feijenoord could prove valuable, particularly given that the quantitative findings revealed a high incidence of perceived discriminatory encounters with law enforcement in that area. Also, Muslims highlighted that prolonged contact with non-Muslims in the neighborhood could help break down prejudice. This connects to the quantitative finding that intergroup contact could help alleviate adverse mental health effects in the wake of everyday discrimination. Furthermore, centering the voices of Muslims in policymaking could stimulate feelings of inclusion. Skelcher and Torfing (2010) argue that such inclusive governance structures could strengthen institutional trust. Especially among the Muslim population, where such trust is low, this is of great importance. Finally, Muslims might be more inclined to seek mental and legal support after having experienced

discrimination if they are supported by Muslims specifically from initial reporting to resolution. Enhancing awareness of Muslim Right Watch could be helpful in this respect. These first-hand insights enhance the rational quality of policymaking (Scholten & Schiller, 2025) by ensuring that relevant, context-specific knowledge is available to inform policy action.

Strengths and limitations

A strength of this study is the inclusion of two dependent and two independent variables, which enabled a more comprehensive examination of the relationship between discrimination and health. Thereby, I was able to specifically show that the effect of *everyday discrimination* on *mental wellbeing* could be buffered by cohesion and contact. Moreover, while grounded in existing literature, this study introduced an innovative framework by examining neighborhood factors that may buffer the adverse effects of discrimination among Muslims. This framework is still relevant for future research, and could be tested among other populations or could be extended by introducing other protective factors. Finally, the mixed-methods approach of the study provided a robust answer to the research question, an approach that is relatively underutilized in this field. The combination of quantitative and qualitative findings not only reinforced key patterns through statistical evidence but also enriched them with first-hand perspectives, resulting in a more practice-oriented understanding of the discrimination-health relation.

The study is not without limitations. First, the quantitative sampling strategy employed in this research was not randomized. Instead, it followed a community-based approach, with mostly in-person data collection conducted in key neighborhood locations, such as community centers and Mosques. The advantage is that this approach is helpful for reaching harder-to-reach populations that have a lack of institutional trust (Morling, 2020). However, this non-randomized methodology contributed to the underrepresentation of Muslim women in the quantitative dataset. Future studies could address this by diversifying data collection methods and settings, and including both male and female data collectors.

Second, this study did not explore assets *within* the Muslim community, such as social contact, friendships, and perceived (religious) support, and how these may serve as protective factors in the discrimination-health relation. Research on Arab American adolescents has demonstrated the important role of such resources in mitigating discrimination's negative health effects (Ahmed et al., 2011). Future studies could incorporate similar measures to assess whether a comparable buffering effect exists among Dutch Muslim populations.

Policy recommendations

1. Involve Muslim residents in the policymaking process

Rather than consulting Muslim communities after plans have been finalized, Rotterdam should actively involve them from the earliest stages of policy development, particularly in initiatives aimed at preventing discrimination or mitigating its effects. Muslims report feeling excluded by institutions, which can negatively impact their mental health and sense of belonging. Centering their voices ensures that policies are grounded in lived experiences and reflect the actual concerns of the community. This not only enhances policy effectiveness, but also fosters trust and wellbeing by making Muslim residents feel genuinely included.

2. Increase awareness of Muslim Rights Watch and accessible support pathways

Many Muslims refrain from seeking social or legal support after experiencing discrimination, often due to distrust or uncertainty about existing services. Raising awareness of organizations like Muslim Rights Watch, an initiative that offers culturally sensitive support from initial reporting to resolution, can help lower this threshold. Municipalities, Mosques, and community centers should play an active role in promoting such resources through targeted information sessions, outreach campaigns, and visible communication materials. Involving relatable community figures who have previously made use of these services can further build trust. These role models could even be paired with individuals currently considering whether to report incidents.

3. Promote sustained interaction between Muslims and non-Muslims

To reduce boundaries and challenge prejudice, the municipality should support initiatives that facilitate *initial* contact between Muslim and non-Muslim residents, such as community dinners, neighborhood dialogues, or joint cultural events. Municipal backing can help with outreach, logistics, and creating an inclusive environment at the outset. Once connections are established, Mosques and other local organizations can take the lead in organizing recurring activities that foster long-term engagement. This directly connects to the study's findings, showing that such interactions could alleviate discrimination's health impact.

4. In Feijenoord, Mosques, community organizations, and residents should be encouraged to act as active partners in collaboration with the police

In Schiebroek, such partnerships already play a meaningful role in identifying vulnerable

families and youth at risk of causing disturbances in the neighborhood. For instance, one focus group attendee described participating in a neighborhood group chat with local police officers. Through these collaborative efforts, initiatives were launched to support at-risk youth, such as the opportunity to accompany police officers for a day, contingent on meeting agreed-upon behavioral expectations. These initiatives improved perceptions of the police and contributed to the mental health of Muslim youth.

In Feijenoord, a similar approach could start small, with low-threshold, trust-building interactions between youth and police. Community centers, Mosques, and youth workers can help identify suitable participants. Involving a culturally familiar police officer, similar to the Moroccan officer in Schiebroek, may ease initial resistance. A pilot could include joint activities (e.g., sports, discussions), followed by offering youth the opportunity to shadow the police during a shift under clear behavioral agreements.

References

Ahmed, S. R., Kia-Keating, M., & Tsai, K. H. (2011). A structural model of racial discrimination, acculturative stress, and cultural resources among Arab American adolescents. *American Journal of Community Psychology*, *48*(3–4), 181–192. https://doi.org/10.1007/s10464-011-9424-3

Allecijfers. (2025). *Alle wijken, buurten en woonplaatsen in de gemeente Rotterdam.* From https://allecijfers.nl/gemeente-overzicht/rotterdam/

Allport, G. W. (1954). *The nature of prejudice*. http://psycnet.apa.org/record/1954-07324-000

Ameline, A., Ndobo, A., & Roussiau, N. (2019). Psychological study of perceived religious discrimination and its consequences for a Muslim population. *Religions*, *10*(3), 144. https://doi.org/10.3390/rel10030144

Andriessen, I., Justin, H. D., Van Der Torre, A., Van Den Berg, E., Pulles, I., Iedema, J., & De Voogd-Hamelink, M. (2020). *Ervaren discriminatie in Nederland II*. Sociaal en Cultureel Planbureau. https://repository.scp.nl/handle/publications/267

Aneshensel, C. S., & Sucoff, C. A. (1996). The neighborhood context of adolescent mental health. *Journal of Health and Social Behavior*, *37*(4), 293. https://doi.org/10.2307/2137258

Araújo, B. Y., & Borrell, L. N. (2006). Understanding the link between discrimination, mental health outcomes, and life chances among Latinos. *Hispanic Journal of Behavioral Sciences*, *28*(2), 245–266. https://doi.org/10.1177/0739986305285825

Arcaya, M. C., Ellen, I. G., & Steil, J. (2024). Neighborhoods and Health: Interventions at the neighborhood level could help advance health equity. *Health Affairs*, *43*(2), 156–163. https://doi.org/10.1377/hlthaff.2023.01037

Axelrod, R., & Cohen, M. D. (1999). *Harnessing complexity: Organizational implications of a scientific frontier.* New York: Free Press.

Ayalon, L., & Gum, A. M. (2011). The relationships between major lifetime discrimination, everyday discrimination, and mental health in three racial and ethnic groups of older adults. *Aging & Mental Health*, *15*(5), 587–594. https://doi.org/10.1080/13607863.2010.543664

Baldwin, E. (2019). Why and How Does Participatory Governance Affect Policy Outcomes? Theory and Evidence from the Electric Sector. *Journal of Public Administration Research and Theory*, *30*(3), 365–382. https://doi.org/10.1093/jopart/muz033

Bateman, L. B., Fouad, M. N., Hawk, B., Osborne, T., Bae, S., Eady, S., Thompson, J., Brantley, W., Crawford, L., Heider, L., & Schoenberger, Y. M. (2017). Examining

Neighborhood Social Cohesion in the Context of Community-based Participatory Research: Descriptive Findings from an Academic-Community Partnership. *Ethnicity & Disease*, *27*(Suppl 1), 329. https://doi.org/10.18865/ed.27.s1.329

Bender, M., Van Osch, Y., He, J., Güngör, D., & Eldja, A. (2022). The role of perceived discrimination in linking religious practices and well‐being: A study among Muslim Afghan refugees in the Netherlands. *International Journal of Psychology*, *57*(4), 445–455. https://doi.org/10.1002/ijop.12854

Bennett, G. G., Wolin, K. Y., Robinson, E. L., Fowler, S., & Edwards, C. L. (2005). Perceived Racial/Ethnic harassment and tobacco use among African American young adults. *American Journal of Public Health*, *95*(2), 238–240. https://doi.org/10.2105/ajph.2004.037812

Billiet, J. (2002). Proposal for questions on religious identity. *European Social Survey Core Questionnaire Development*, 339-383.

Blommaert, L., Coenders, M., & Van Tubergen, F. (2013). Discrimination of Arabic-Named Applicants in the Netherlands: An Internet-Based field experiment examining different phases in online recruitment procedures. *Social Forces*, *92*(3), 957–982. https://doi.org/10.1093/sf/sot124

Boeije, H. (2009). *Analysis in qualitative research*. SAGE Publications.

Bolouri, A. (2022). *Perceived discrimination, its impact on health, and the influence of identity among Western Muslims.* [Master Thesis, Oslo Metropolitan University]. ODA Open Digital Archive.

Bombak, A. E. (2013). Self-Rated Health and Public Health: A Critical perspective. *Frontiers in Public Health*, *1*. https://doi.org/10.3389/fpubh.2013.00015

Cail, V., Groeniger, J. O., Beenackers, M. A., & Van Lenthe, F. J. (2024). Changes in perceived neighborhood social cohesion and self-assessed health: 17-year follow-up of the Dutch GLOBE study. *European Journal of Public Health*. https://doi.org/10.1093/eurpub/ckae168

Dalgard, O. S., & Tambs, K. (1997). Urban environment and mental health. *The British Journal of Psychiatry*, *171*(6), 530–536. https://doi.org/10.1192/bjp.171.6.530

Dam, J. L., Nagorka-Smith, P., Waddell, A., Wright, A., Bos, J. J., & Bragge, P. (2023). Research evidence use in local government-led public health interventions: a systematic review. *Health Research Policy and Systems*, *21*(1). https://doi.org/10.1186/s12961-023-01009-2

Dana, K., Lajevardi, N., Oskooii, K. A., & Walker, H. L. (2018). Veiled Politics: Experiences

with Discrimination among Muslim Americans. *Politics and Religion*, *12*(4), 629–677. https://doi.org/10.1017/s1755048318000287

Davies, K., Tropp, L. R., Aron, A., Pettigrew, T. F., & Wright, S. C. (2011). Cross-Group friendships and intergroup attitudes. *Personality and Social Psychology Review*, *15*(4), 332–351. https://doi.org/10.1177/1088868311411103

Dryzek, J. S. (1990). *Discursive democracy: Politics, Policy, and Political Science*. Cambridge University Press.

Eberl, J., Meltzer, C. E., Heidenreich, T., Herrero, B., Theorin, N., Lind, F., Berganza, R., Boomgaarden, H. G., Schemer, C., & Strömbäck, J. (2018). The European media discourse on immigration and its effects: a literature review. *Annals of the International Communication Association*, *42*(3), 207–223. https://doi.org/10.1080/23808985.2018.1497452

Ellian, A. (2024). 'EU-onderzoek' naar discriminatie moslims rammelt aan alle kanten. *EWmagazine.nl*. https://www.ewmagazine.nl/buitenland/opinie/2024/11/eu-onderzoek-naar-discriminatie-moslims-rammelt-aan-alle-kanten-1436509/

Essed, P. (1991). *Understanding everyday racism: An interdisciplinary theory.* Sage Publications, Inc.

European Union Agency for Fundamental Rights. (2024). *Being Muslim in the EU: experiences of Muslims : EU Survey on immigrants and descendants of immigrants*. Publications Office of the European Union. https://data.europa.eu/doi/10.2811/2893

Fernández-Reino, M., Di Stasio, V., & Veit, S. (2022). Discrimination unveiled: a field experiment on the barriers faced by Muslim women in Germany, the Netherlands, and Spain. *European Sociological Review*, *39*(3), 479–497. https://doi.org/10.1093/esr/jcac032

Fjell, A., Seiger, B. C., Hermann, M., Rongve, A., Aßmus, J., Kvinge, L., Seiger, Å., Skaug, K., & Boström, A. (2020). Factors associated with self-rated health in a Norwegian population of older people participating in a preventive home visit program: a cross-sectional study. *BMC Geriatrics*, *20*(1). https://doi.org/10.1186/s12877-020-01733-2

Fung, A., & Wright, E. O. (2001). Deepening Democracy: Innovations in Empowered Participatory Governance. *Politics & Society*, *29*(1), 5–41. https://doi.org/10.1177/0032329201029001002

Geurts, N., & Spierings, N. (2025). Situating Muslims' trust in parliament from a cross-national perspective: Islamic religiosity's impact in Western Europe. *European Societies*, 1–42. https://doi.org/10.1162/euso_a_00002

Graf, S., Paolini, S., & Rubin, M. (2014). Negative intergroup contact is more influential, but positive intergroup contact is more common: Assessing contact prominence and contact prevalence in five Central European countries. *European Journal of Social Psychology*, *44*(6), 536–547. https://doi.org/10.1002/ejsp.2052

Hailu, E. M., Lewis, T. T., Needham, B. L., Lin, J., Seeman, T. E., & Mujahid, M. S. (2021). Longitudinal associations between discrimination, neighborhood social cohesion, and telomere length: The Multi-Ethnic Study of Atherosclerosis. *The Journals of Gerontology Series A*, *77*(2), 365–374. https://doi.org/10.1093/gerona/glab193

Hajer, M. A., & Wagenaar, H. (Eds.). (2003). *Deliberative policy analysis: understanding governance in the network society*. Cambridge University Press.

Harnois, C. E., Bastos, J. L., Campbell, M. E., & Keith, V. M. (2019). Measuring perceived mistreatment across diverse social groups: An evaluation of the Everyday Discrimination Scale. *Social Science & Medicine*, *232*, 298–306. https://doi.org/10.1016/j.socscimed.2019.05.011

Homer, K., Taylor, J., Miller, A., Pickett, K., Wilson, L., & Robson, J. (2023). Making ends meet – relating a self-reported indicator of financial hardship to health status. *Journal of Public Health*, *45*(4), 888–893. https://doi.org/10.1093/pubmed/fdad161

Innes, J. E., & Booher, D. E. (2003). Collaborative policymaking: governance through dialogue. In *Cambridge University Press eBooks* (pp. 33–59). https://doi.org/10.1017/cbo9780511490934.003

Ishaq, B., Diaz, E., & Østby, L. (2024). Discrimination and health: A cross-sectional study comparing Muslims with other-religious. *Scandinavian Journal of Public Health*. https://doi.org/10.1177/14034948231225561

Jackson, P. I., & Doerschler, P. (2012). Muslims' experiences of discrimination in public institutions. In *Policy Press eBooks* (pp. 105–120). https://doi.org/10.51952/9781847428882.ch005

Jasperse, M., Ward, C., & Jose, P. E. (2011). Identity, perceived religious discrimination, and Psychological Well‐Being in Muslim immigrant women. *Applied Psychology*, *61*(2), 250–271. https://doi.org/10.1111/j.1464-0597.2011.00467.x

Jung, J., Mukherjee, K., Brown, M., & Sadigh, G. (2024). Association between financial hardship and psychological burden and the role of social and mental health support:

An observational study. *Medicine*, *103*(28), e38871. https://doi.org/10.1097/md.0000000000038871

Kammersgaard, T., Søgaard, T. F., Haller, M. B., Kolind, T., & Hunt, G. (2021). Community policing in Danish "ghetto" areas: Trust and distrust between the police and ethnic minority youth. *Criminology & Criminal Justice*, *23*(1), 98–116. https://doi.org/10.1177/17488958211017390

Kandula, N. R., Wen, M., Jacobs, E. A., & Lauderdale, D. S. (2008). Association between neighborhood context and smoking prevalence among Asian Americans. *American Journal of Public Health*, *99*(5), 885–892. https://doi.org/10.2105/ajph.2007.131854

Kassam, A. (2024). Muslims in Europe experiencing 'worrying surge' in racism, survey finds. *The Guardian*. https://www.theguardian.com/world/2024/oct/24/muslims-in-europe-experiencing-worrying-surge-in-racism-survey-finds

Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of perceived discrimination in the United States. *Journal of Health and Social Behavior*, *40*(3), 208. https://doi.org/10.2307/2676349

Kullberg, J., Mouktadibillah, R., & de Vries, J. (2021). *Opgroeien in een kwetsbare wijk: Over buurteffecten en persoonlijke ervaringen van jongens en jonge mannen*. Sociaal en Cultureel Planbureau. https://www.scp.nl/publicaties/publicaties/2021/05/27/opgroeien-in-een-kwetsbarejk

Lindemann, A., & Stolz, J. (2020). Perceived discrimination among Muslims and its correlates. A comparative analysis. *Ethnic and Racial Studies*, *44*(2), 173–194. https://doi.org/10.1080/01419870.2020.1729389

Lindemann, A., & Stolz, J. (2022). To speak out or not to speak out? Exploring the reporting of discrimination among Muslims and Jews in Switzerland. *Journal of Ethnic and Migration Studies*, *50*(8), 1977–1997. https://doi.org/10.1080/1369183x.2022.2130199

Macintyre, S., & Ellaway, A. (2003). Neighborhoods and Health: An Overview. In *Oxford University Press eBooks* (pp. 20–42). https://doi.org/10.1093/acprof:oso/9780195138382.003.0002

Marshall, G. L., & Tucker-Seeley, R. (2018). The association between hardship and self-rated health: does the choice of indicator matter? *Annals of Epidemiology*, *28*(7), 462–467. https://doi.org/10.1016/j.annepidem.2018.03.013

Meleady, R., & Forder, L. (2018). When contact goes wrong: Negative intergroup contact

promotes generalized outgroup avoidance. *Group Processes & Intergroup Relations*, *22*(5), 688–707. https://doi.org/10.1177/1368430218761568

Ministry of Education, Science and Culture. (2021). *Schematische weergave Nederlands onderwijsstelsel*. Onderwijs Algemene Feiten En Cijfers | OCW in Cijfers. https://www.ocwincijfers.nl/sectoren/onderwijs-algemeen/schooltypen/schooltypen

Morling, B. (2020). *Research Methods in Psychology - Evaluating a world of information*.

Mujahid, M. S., Roux, A. V. D., Morenoff, J. D., Raghunathan, T. E., Cooper, R. S., Ni, H., & Shea, S. (2008). Neighborhood characteristics and hypertension. *Epidemiology*, *19*(4), 590–598. https://doi.org/10.1097/ede.0b013e3181772cb2

Nia, O.T. (2023). *Over 40% of Muslim men in Germany report about daily racism: Study*. Anadolu Agency. https://www.aa.com.tr/en/europe/over-40-of-muslim-men-in-germany-report-about-daily-racism-study/3046781

Pascoe, E. A., & Richman, L. S. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin*, *135*(4), 531–554. https://doi.org/10.1037/a0016059

Pettigrew, T. F., & Tropp, L. R. (2006). A meta-analytic test of intergroup contact theory. *Journal of Personality and Social Psychology*, *90*(5), 751–783. https://doi.org/10.1037/0022-3514.90.5.751

Raj, A., Chatterji, S., Johns, N. E., Yore, J., Dey, A. K., & Williams, D. R. (2022). The associations of everyday and major discrimination exposure with violence and poor mental health outcomes during the COVID-19 pandemic. *Social Science & Medicine*, *318*, 115620. https://doi.org/10.1016/j.socscimed.2022.115620

Richman, L. S., Blodorn, A., & Major, B. (2016). An identity-based motivational model of the effects of perceived discrimination on health-related behaviors. *Group Processes & Intergroup Relations*, *19*(4), 415–425. https://doi.org/10.1177/1368430216634192

Ross, C. E., & Mirowsky, J. (2001). Neighborhood disadvantage, disorder, and health. *Journal of Health and Social Behavior*, *42*(3), 258. https://doi.org/10.2307/3090214

Roux, A. V. D. (2016). Neighborhoods and health: What do we know? What should we do? *American Journal of Public Health*, *106*(3), 430–431. https://doi.org/10.2105/ajph.2016.303064

Rydin, Y., Bleahu, A., Davies, M., Dávila, J. D., Friel, S., De Grandis, G., Groce, N., Hallal, P. C., Hamilton, I., Howden-Chapman, P., Lai, K., Lim, C., Martins, J., Osrin, D., Ridley, I., Scott, I., Taylor, M., Wilkinson, P., & Wilson, J. (2012). Shaping cities for

health: complexity and the planning of urban environments in the 21st century. *The Lancet*, *379*(9831), 2079–2108. https://doi.org/10.1016/s0140-6736(12)60435-8

Saleem, F. T., Busby, D. R., & Lambert, S. F. (2018). Neighborhood social processes as moderators between racial discrimination and depressive symptoms for African American adolescents. *Journal of Community Psychology*, *46*(6), 747–761. https://doi.org/10.1002/jcop.21970

Sampson, R. J., Raudenbush, S. W., & Earls, F. (1997). Neighborhoods and Violent Crime: A Multilevel Study of Collective Efficacy. *Science*, *277*(5328), 918–924. https://doi.org/10.1126/science.277.5328.918

Schaeffer, M., & Kas, J. (2023). The Integration Paradox: A Review and Meta-Analysis of the Complex Relationship between Integration and Reports of Discrimination. *International Migration Review*, *58*(3), 1384–1409. https://doi.org/10.1177/01979183231170809

Scholten, P., & Schiller, M. (2025). Why the governance of superdiversity so often derails. A complexity perspective. *Ethnic and Racial Studies*, 1–15. https://doi.org/10.1080/01419870.2025.2461254

Skelcher, C., & Torfing, J. (2010). Improving democratic governance through institutional design: Civic participation and democratic ownership in Europe. *Regulation & Governance*, *4*(1), 71–91. https://doi.org/10.1111/j.1748-5991.2010.01072.x

Small, M. L., & Pager, D. (2020). Sociological perspectives on racial discrimination. *The Journal of Economic Perspectives*, *34*(2), 49–67. https://doi.org/10.1257/jep.34.2.49

Solivetti, L. M. (2023). Muslim immigrants and perceived discrimination in Europe: a comparative analysis. *Quality & Quantity*, *58*(2), 1859–1879. https://doi.org/10.1007/s11135-023-01702-y

Sternthal, M. J., Slopen, N., & Williams, D. R. (2011). Racial Disparities in Health. *Du Bois Review Social Science Research on Race*, *8*(1), 95–113. https://doi.org/10.1017/s1742058x11000087

Stockdale, S. E., Wells, K. B., Tang, L., Belin, T. R., Zhang, L., & Sherbourne, C. D. (2007). The importance of social context: Neighborhood stressors, stress-buffering mechanisms, and alcohol, drug, and mental health disorders. *Social Science & Medicine*, *65*(9), 1867–1881. https://doi.org/10.1016/j.socscimed.2007.05.045

Taber, K. S. (2017). The use of Cronbach's Alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*(6), 1273–1296.

https://doi.org/10.1007/s11165-016-9602-2

Tennant, R., Hiller, L., Fishwick, R., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., & Stewart-Brown, S. (2007). The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation. *Health and Quality of Life Outcomes*, *5*(1). https://doi.org/10.1186/1477-7525-5-63

Todorova, I. L., Falcón, L. M., Lincoln, A. K., & Price, L. L. (2010). Perceived discrimination, psychological distress and health. *Sociology of Health & Illness*, *32*(6), 843–861. https://doi.org/10.1111/j.1467-9566.2010.01257.x

Toepoel, V. (2015). *Doing surveys online*. SAGE Publications Limited.

Tran, A. G. T. T. (2015). In these spaces: Perceived neighborhood quality as a protective factor against discrimination for lesbian, gay, and bisexual (LGB) adults. *Psychology of Sexual Orientation and Gender Diversity*, *2*(3), 345–352. https://doi.org/10.1037/sgd0000113

Van Bergen, D. D., Feddes, A. R., & De Ruyter, D. J. (2021). Perceived discrimination against Dutch Muslim youths in the school context and its relation with externalising behaviour. *Oxford Review of Education*, *47*(4), 475–494. https://doi.org/10.1080/03054985.2020.1862779

Van Griethuijsen, R. a. L. F., Van Eijck, M. W., Haste, H., Brok, P. J. D., Skinner, N. C., Mansour, N., Gencer, A. S., & BouJaoude, S. (2014). Global patterns in students' views of science and interest in science. *Research in Science Education*, *45*(4), 581–603. https://doi.org/10.1007/s11165-014-9438-6

Verkuyten, M. (2016). The integration paradox. *American Behavioral Scientist*, *60*(5–6), 583–596. https://doi.org/10.1177/0002764216632838

Vieluf, S., & Sauerwein, M. N. (2018). Does a lack of teachers' recognition of students with migration background contribute to achievement gaps? *European Educational Research Journal*, *23*(1), 3–27. https://doi.org/10.1177/1474904118810939

Vivier, E., & Sanchez‐Betancourt, D. (2023). Participatory governance and the capacity to engage: A systems lens. *Public Administration and Development*, *43*(3), 220–231. https://doi.org/10.1002/pad.2012

Wagenaar, H. (2007). Governance, complexity, and democratic participation. *The American Review of Public Administration*, *37*(1), 17–50. https://doi.org/10.1177/0275074006296208

Weden, M. M., Carpiano, R. M., & Robert, S. A. (2008). Subjective and objective neighborhood characteristics and adult health. *Social Science & Medicine*, *66*(6),

1256–1270. https://doi.org/10.1016/j.socscimed.2007.11.041

Wen, M., Hawkley, L. C., & Cacioppo, J. T. (2006). Objective and perceived neighborhood environment, individual SES and psychosocial factors, and self-rated health: An analysis of older adults in Cook County, Illinois. *Social Science & Medicine*, *63*(10), 2575–2590. https://doi.org/10.1016/j.socscimed.2006.06.025

Williams, D. R., & Collins, C. (1995). US Socioeconomic and racial differences in Health: Patterns and explanations. *Annual Review of Sociology*, *21*(1), 349–386. https://doi.org/10.1146/annurev.so.21.080195.002025

Williams, D. R., Yu, N. Y., Jackson, J. S., & Anderson, N. B. (1997). Racial differences in physical and mental health. *Journal of Health Psychology*, *2*(3), 335–351. https://doi.org/10.1177/135910539700200305

Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/Ethnic Discrimination and Health: Findings from community studies. *American Journal of Public Health*, *93*(2), 200–208. https://doi.org/10.2105/ajph.93.2.200

Williams, D. R., & Mohammed, S. A. (2008). Discrimination and racial disparities in health: evidence and needed research. *Journal of Behavioral Medicine*, *32*(1), 20–47. https://doi.org/10.1007/s10865-008-9185-0

Yang, T., Chen, D., & Park, K. (2016). Perceived housing Discrimination and Self-Reported Health: How do neighborhood features matter? *Annals of Behavioral Medicine*, *50*(6), 789–801. https://doi.org/10.1007/s12160-016-9802-z

Zapata-Barrero, R., & Yalaz, E. (2020). Qualitative migration research ethics: a roadmap for migration scholars. Qualitative Research Journal, 20(3), 269–279. https://doi.org/10.1108/qrj-02-2020-0013

Zhu, M., Urhahne, D., & Rubie-Davies, C. M. (2017). The longitudinal effects of teacher judgement and different teacher treatment on students' academic outcomes. *Educational Psychology*, *38*(5), 648–668. https://doi.org/10.1080/01443410.2017.1412399

Appendix A: Detailed Operationalization of Key Concepts

Table 1: Operationalization of dependent, independent, moderator, and control variables

Concept	Definition & Justification	Operationalization and Indicators	Literature
Self-assessed health (DV)	Self-assessed health refers to an individual's subjective evaluation of their overall health status (Bombak, 2013). This is typically asked in a single question. The measure "allows respondents to prioritize and evaluate different aspects of their health, maximizing the measure's sensitivity to respondent views of health" (ibid, p.1). For example, some respondents might prioritize their vitality, whilst others tend to focus more on presence or absence of illness.	Survey question: *"How would you rate your health in general?"* (1) Poor, (2) Fair, (3) Good, (4) Very Good, (5) Excellent.	Bombak (2013)
Mental wellbeing (DV)	Based on Tennant et al. (2007), mental wellbeing refers to a state of *positive* psychological functioning characterized by emotional resilience, life satisfaction, and the ability to maintain fulfilling relationships. The 7-item Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) will be used. This scale consists only of *positive* worded items (ibid). This ensures that respondents focus on wellbeing rather than distress when reading the items and making their judgments. A broad range of validity and reliability measures were used to assess the scale, with solid outcomes on all criteria (ibid).	Respondents read the following text: *"Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks."* The statements are: (a) I've been feeling optimistic about the future, (b) I've been feeling useful, (c) I've been feeling relaxed, (d) I've been dealing with problems well, (e) I've been thinking clearly, (f) I've been feeling close to other people, (g) I've been able to make up my mind about things. Response categories include: (1) none of the time, (2) rarely, (3) some of the time, (4) often, (5) all of the time.	Tennant et al. (2007)

Everyday discrimination (IV)	Everyday experiences of discrimination refer to frequent, subtle, interpersonal forms of discrimination occurring repeatedly over the (daily) life-course (Small & Pager, 2020; Williams et al., 1997). Everyday discrimination will be measured using the abbreviated Everyday Discrimination Scale (Williams et al., 1997). This scale captures minor but persistent discriminatory encounters that have been found to be associated with health outcomes.	Respondents receive the following question: *"In your day-to-day life how often have any of the following things happened to you?"* The list of statements include: (a) you are treated with less courtesy than other people; (b) you receive poorer service than other people at restaurants or stores; (c) people act as if they think you are not smart; (d) people act as if they are afraid of you; and (e) you are threatened or harassed. For every statement, respondents can choose between the following categories: (1) never, (2) less than once a year, (3) a few times a year, (4) a few times a month, (5) at least once a week, and (6) almost everyday.	Williams et al. (1997) Small & Pager (2020)
Major discrimination (IV)	Major discrimination refers to significant, often life-altering instances of unfair treatment that typically occur in institutional or economic domains, such as employment, education, housing, or interactions with law enforcement (Small & Pager, 2020; Williams & Mohammed, 2008). Measured using a validated six-item scale of Major Discrimination (Williams et al., 1997; Sternthal et al., 2011). The original wording of the items have been used with one adaptation. In item b, the word 'internship' was added as this also relates to work-related settings.	Respondents will answer the following question: "*Can you tell me if any of the following has ever happened to you":* (a) at any time in your life, have you ever been unfairly fired from a job; (b) for unfair reasons, have you ever not been hired for a job or internship?; (c) have you ever been unfairly stopped, searched, questioned, physically threatened, or abused by the police?; (d) have you ever been unfairly discouraged by a teacher or advisor from continuing your education?; (e) have you ever been unfairly prevented from moving into a neighborhood because the landlord or a realtor refused to sell or rent you a house or apartment?; and (f) have you ever been unfairly denied a bank loan? Respondents can choose between the answer categories (1) yes, and (2) no.	Small & Pager (2020) Williams & Mohammed (2008) Williams et al. (1997) Sternthal et al. (2011)

Perceived neighborhood cohesion (moderator)	When investigating social cohesion in relation to health, "social cohesion is often considered a group-level construct that refers to the extent of connectedness and solidarity among groups in a society" (Cail et al., 2024, p. 1079). Neighborhoods with high social cohesion foster a sense of belonging, providing a supportive environment that helps residents cope with discrimination. In order to measure perceptions of neighborhood social cohesion, a scale was adopted from a scientific article published in the American Journal of Public Health (Kandula et al., 2008). Scholars constructed the scale based on five conceptually related items designed to capture key aspects of social cohesion, such as trust, mutual help, and shared values within the neighborhood. This scale showed sufficient reliability ($\alpha = 0.70$).	Respondents will receive the question: *"Please indicate the extent to which you agree with the following statements about your neighborhood."* The statements are: (a) people in my neighborhood are willing to help each other, (b) people in this neighborhood generally do not get along with each other, (c) people in this neighborhood can be trusted, (d) people in this neighborhood do not share the same values, and (e) most people in this neighborhood know each other. Response categories include (1) strongly disagree, (2) disagree, (3) agree, and (4) strongly agree.	Cail et al. (2024) Kandula et al. (2008)
Intergroup contact (moderator)	Quality of interactions with Dutch non-Muslims, assessing trust, support, and comfort in social settings. Based on the intergroup contact literature, highlighting the potential of friendships, positive interactions, and support from outgroup members in reducing prejudice, 4 items were developed.	Respondents receive the following questions: (a) How often do you have positive interactions with Dutch non-Muslims (e.g., feeling respected or welcomed)?; (b) Do you have close friendships with Dutch non-Muslims?; (c) To what extent do you feel supported by Dutch non-Muslims in your neighborhood or community?; (d) How comfortable do you feel participating in activities or events where most attendees are Dutch non-Muslims? All questions will be answered on a scale from 1 to 5, with distinct labels tailored to each item. For item (a), the scale ranges from 1 = "Never" to 5 =	Pettigrew & Tropp (2006)

		"Very often." For item (b), responses range from 1 = "Not at all" to 5 = "More than 5 close friendships." For item (c), the scale spans from 1 = "Not at all" to 5 = "A great deal." Finally, for item (d), the scale ranges from 1 = "Very uncomfortable" to 5 = "Very comfortable."	
Educational level (control)	Educational level will be defined as the highest level of education successfully completed. (aligning with common ways of measuring education, such as in the European Social Survey). Relevant control variable because higher education may increase awareness of discrimination, as explained in the literature on the integration paradox (Verkuyten, 2016).	*"What is the highest level of education you have successfully completed?"* Based on common classifications in the Dutch educational system (e.g. Ministry of Education, Culture and Science, 2021), respondents choose one of the following categories: (1) elementary school, (2) Vmbo-b/k, mbo1, (3) Vmbo-g/t, substructure havo, substructure vwo, (4) mbo2, mbo3, (5) mbo4, (6) havo, vwo, (7) hbo-bachelor, (8) Wo-bachelor, hbo-master, (9) Wo-master, doctor, and (10) other (..).	Verkuyten (2016)
Financial hardship (control)	Based on Marshall and Tucker-Seeley (2018), financial hardship refers to the difficulty individuals or households face in meeting basic financial obligations. Incorporating financial hardship is important to see whether poor health is actually the result of perceived discrimination or rather the result of the financial hardship experienced by Muslims.	Aligning with the operationalization of financial hardship by Homer et al. (2023), the following question will be asked: *"Do you ever have difficulty making ends meet at the end of the month?"* Respondents select one of the following categories: (1) never, (2) rarely, (3) sometimes, (4) always, and (5) preferred not to say.	Marshall & Tucker-Seeley (2018) Homer et al. (2018)
Gender (control)	Could provide insights into the specific areas where male and female participants experience discrimination. For example, research shows that Muslim men tend to experience more discrimination in	Binary variable: (0) Male, (1) Female.	Nia (2023)

	contact with the police or other authorities (Nia, 2023).		
Religiosity (control)	Relevant to include as studies show that increased religious attendance was associated with more perceived discrimination (Bender et al., 2022). Other studies argue that increased in-group identification might *decrease* the negative effects of perceived discrimination as the community to which one is strongly affiliated can provide social support (e.g. Ameline et al., 2019). Therefore, religiosity will be measured by degree of religious attendance and in-group identification. This aligns with measurements in the well-known European Social Survey (Billiet, 2002).	Two questions will be asked: *How important is Islam for you where (1) means low importance and (5) means very important?"* Second, *"Apart from special occasions such as weddings and funerals, how often do you attend religious services nowadays?"* Respondents can choose between the following categories: (1) never, (2) seldom, (3) at least once a month, (4) once a week, (5) more than once a week, (6) every day.	Bender et al. (2022) Ameline et al. (2019) Billiet (2002)
Age (control)	Age is relevant as individuals might be exposed to different types of discrimination depending on their age. Also, the effects of discrimination on health might differ between age groups.	Open question: *What is your age?*	
Length of residency (control)	Relevant to include as there are indications that Muslim immigrants could be exposed to more discrimination compared to native born Muslims as they have more distance to the host society and are not yet fully integrated (Solivetti, 2023).	*"How long have you lived in the Netherlands?"* Respondents can choose between (1) less than 5 years, (2) 5–10 years, (3) 11–20 years, (4) more than 20 years, and (5) I was born in the Netherlands. [9]	Solivetti (2023)

[9] Respondents who were born in the Netherlands were asked to tick box number 5. This was clearly stated in the survey to avoid any confusion

Appendix B: Quantitative Survey (in Dutch)

Beste deelnemers,

Bedankt voor uw deelname aan deze enquête! Het invullen van de vragenlijst duurt ongeveer 5 minuten. Deze studie heeft als doel een beter inzicht te krijgen in discriminatie-ervaringen binnen de moslimgemeenschap in Rotterdam en de impact hiervan. Uw input is van onschatbare waarde! Het draagt bij aan de ontwikkeling van beleid om mensen die discriminatie hebben ervaren beter te ondersteunen.

Alle gegevens worden vertrouwelijk behandeld en uw antwoorden blijven volledig anoniem. Als u vragen heeft, of een melding wilt ontvangen wanneer de resultaten worden gepubliceerd, aarzel dan niet om mij te mailen: daniabdoellakhan@gmail.com.

Geeft u toestemming dat we uw antwoorden gebruiken voor het onderzoek?

- ☐ Ja
- ☐ Nee

---

1. **In welke wijk woont u?**
   - ☐ Feijenoord
   - ☐ Schiebroek

2. **Hoe vaak zijn de volgende dingen u overkomen in uw dagelijks leven?**

	Nooit	Minder dan 1 keer per jaar	Een paar keer per jaar	Een paar keer per maand	Op zijn minst 1 keer per week	Bijna elke dag
U wordt met minder beleefdheid of respect behandeld dan andere mensen						
U krijgt slechtere service dan andere mensen in restaurants of winkels						
Mensen gedragen zich alsof ze denken dat u niet slim bent						
Mensen gedragen zich alsof ze bang voor u zijn						
U wordt bedreigd of lastiggevallen						

3. **Kunt u mij vertellen of een van de volgende dingen u ooit is overkomen?**

	Ja	Nee
Is het je ooit overkomen dat je op een onterechte manier ontslagen werd uit een baan?		
Is het je ooit overkomen dat je om onterechte redenen niet werd aangenomen voor een baan of stage?		
Is het je ooit overkomen dat je onterecht werd aangehouden, doorzocht, ondervraagd, fysiek bedreigd of mishandeld door de politie?		
Is het je ooit overkomen dat je onterecht werd ontmoedigd door een leraar of adviseur om je opleiding voort te zetten?		
Is het je ooit overkomen dat je onterecht werd verhinderd om in een wijk te wonen omdat de verhuurder of makelaar je weigerde een huis of appartement te verkopen of te verhuren?		
Is je ooit onterecht een banklening geweigerd?		

4. **Hoe zou u uw gezondheid over het algemeen beoordelen?**
   - ☐ Slecht
   - ☐ Redelijk
   - ☐ Goed
   - ☐ Zeer goed
   - ☐ Uitstekend

5. **Hieronder staan enkele uitspraken over gevoelens en gedachten. Vink alstublieft het vakje aan dat het beste uw ervaring van elk punt in de afgelopen 2 weken beschrijft.**

	Nooit	Zelden	Soms	Vaak	Altijd
Ik heb me optimistisch gevoeld over de toekomst					
Ik heb me nuttig gevoeld					
Ik heb me ontspannen gevoeld					
Ik ben goed omgegaan met problemen					
Ik heb duidelijk kunnen nadenken					
Ik heb mij sterk met andere mensen verbonden gevoeld					
Ik ben in staat geweest om beslissingen te nemen over dingen					

6. **Geef alstublieft aan in welke mate u het eens bent met de volgende uitspraken over uw buurt/wijk.**

	Zeer mee oneens	Oneens	Eens	Zeer mee eens
Mensen in deze buurt zijn bereid om elkaar te helpen				
Mensen in deze buurt kunnen over het algemeen niet goed met elkaar opschieten				
Mensen in deze buurt zijn te vertrouwen				
Mensen in deze buurt delen niet dezelfde waarden				
De meeste mensen in deze buurt kennen elkaar				

7. **Hoe vaak heeft u positieve interacties met Nederlandse niet-moslims (bijvoorbeeld je gerespecteerd of welkom voelen)?**
   - ☐ Nooit
   - ☐ Zelden
   - ☐ Soms
   - ☐ Vaak
   - ☐ Heel vaak

8. **Heeft u hechte vriendschappen met Nederlandse niet-moslims?**
   - ☐ Geen een
   - ☐ 1 of 2
   - ☐ Tussen de 3 en 5
   - ☐ Meer dan 5

9. **In hoeverre voelt u zich ondersteund door Nederlandse niet-moslims in uw buurt/wijk?**
   - ☐ Helemaal niet
   - ☐ Een klein beetje
   - ☐ Enigszins
   - ☐ Best wel
   - ☐ Heel veel

10. **Hoe comfortabel voelt u zich om deel te nemen aan activiteiten of evenementen waar de meeste aanwezigen Nederlandse niet-moslims zijn?**
    - ☐ Heel oncomfortabel
    - ☐ Oncomfortabel
    - ☐ Neutraal
    - ☐ Comfortabel
    - ☐ Heel comfortabel

11. Wat is uw geslacht?

- ☐ Man
- ☐ Vrouw

12. Wat is uw leeftijd? (in een rond getal)

…….

13. Heeft u ooit moeite om rond te komen aan het einde van de maand?

- ☐ Nooit
- ☐ Zelden
- ☐ Soms
- ☐ Vaak
- ☐ Altijd
- ☐ Zeg ik liever niet

14. Hoe belangrijk is de islam voor u, waarbij (1) lage belangrijkheid betekent en (5) zeer belangrijk betekent?

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

15. Behalve op speciale gelegenheden zoals bruiloften en begrafenissen, hoe vaak woont u religieuze diensten bij?

- ☐ Nooit
- ☐ Zelden
- ☐ Tenminste 1 keer per maand
- ☐ Een keer per week
- ☐ Meer dan een keer per week
- ☐ Elke dag

16. Wat is het hoogste opleidingsniveau dat u succesvol heeft voltooid?

- ☐ basisschool
- ☐ vmbo b/k, mbo1
- ☐ vmbo g/t / onderbouw havo / onderbouw vwo
- ☐ mbo2 / mbo3
- ☐ mbo4
- ☐ havo / vwo
- ☐ hbo-bachelor

- ☐ wo-bachelor / hbo-master
- ☐ wo-master / doctor
- ☐ Weet ik niet

17. Hoe lang woont u al in Nederland?

- ☐ Minder dan 5 jaar
- ☐ 5 - 10 jaar
- ☐ 11 -20 jaar
- ☐ Meer dan 20 jaar

- ☐ NVT: ik ben geboren in Nederland

Tot slot:

18. Ik organiseer eind april/begin mei een kleine groepsdiscussie, een focusgroep, om de onderwerpen van deze studie in meer detail te verkennen. Focusgroepen houden in dat je een open en respectvol gesprek hebt met een paar andere deelnemers. Als u geïnteresseerd bent om deel te nemen, laat dan hieronder uw e-mailadres en telefoonnummer achter. (Als u niet geïnteresseerd bent, hoeft u hier niets in te vullen).

Tel: ……

Mail: ……

Appendix C: Extensive Explanation for Incorporation of Control Variables

Control variables

This part shortly delves into some other concepts that will be controlled for in the survey. First, financial hardship is relevant to include. Based on Marshall and Tucker-Seeley (2018), financial hardship refers to the difficulty individuals or households face in meeting basic financial obligations. There are multiple scientific studies showcasing that poor financial circumstances can negatively affect health outcomes, potentially leading to lower quality of life, increased anxiety, poor mental health and even depression (Jung et al., 2024). It has been found that individuals who struggled to make ends meet "had a 1.8 higher odds of reporting poor self-rated health" (Marshall & Tucker-Seeley, 2018, p.462). Given this scientific evidence, incorporating financial hardship is important to see whether poor health is actually the result of perceived discrimination or rather the result of potential financial hardship experienced by Muslims.

Second, the educational level of Muslims is relevant to incorporate as it could influence the degree to which discrimination is perceived, and thereby also the self-reported health and mental wellbeing effects. Scholars investigating the "integration paradox" explain that higher-educated individuals tend to report more discrimination because of increased social exposure to mainstream members of society in work or education (Verkuyten, 2016). This increases the likelihood, or at least the opportunities, to be discriminated against by the native population. Another contributing factor is that higher-educated individuals have a higher cognitive susceptibility to frame experiences in terms of discrimination, explained by their language skills, media consumption and familiarity with public discourse. Thereby, they are more aware of how their group is portrayed in media or politics (Schaeffer & Kas, 2023).

Third, although this study targets respondents self-identifying as Muslim, it is still important to delve into religiosity as indicated by the strength of religious affiliation and the frequency of religious attendance. Scientific evidence of studies conducted among Muslim populations in the Netherlands and beyond showed that increasing religious attendance was associated with more perceived discrimination (Bender et al., 2022; Dana et al., 2019). Another study concluded that "a strong psychological affiliation with Islam exacerbated the negative relationship between perceived religious discrimination and wellbeing" (Jasperse et al., 2012, p.250). However, other studies argue that increased in-group identification might *decrease* the negative effects of perceived discrimination as the community to which one is strongly affiliated can provide social support (e.g. Ameline et al., 2019). These findings

indicate that religious affiliation and attendance could be related to discrimination and health.

Fourth, length of residency will be incorporated as there are indications in the literature that Muslim immigrants could be exposed to more discrimination compared to native born Muslims as they have more distance to the host society and are not yet fully integrated (Solivetti, 2023). This could be amplified by the negative stereotyping of (Muslim) immigrant groups in political debates and media discourse, leading to higher perceptions of perceived threat - or even Islamophobia - among the native population (Eberl et al., 2018).

Fifth, gender will be taken into account. This could provide insights into the specific areas where male and female participants experience everyday or major discrimination, as well as into potential gender differences in health outcomes. For example, previous research demonstrated that Muslim women wearing a headscarf, thereby signaling their religion, face discrimination in the labor force, especially in jobs with more customer contact. This was found in Germany and the Netherlands (Fernández-Reino et al., 2022). There are also signs that Muslims men experience more discrimination in contact with the police or other authorities compared to Muslim women (Nia, 2023).

Finally, age will be incorporated as different age groups might experience different levels and forms of discrimination, with divergent effects on self-assessed health and mental wellbeing. For example, in Europe, Muslim youth are considered particularly vulnerable to discrimination, partly due to its prevalence in educational settings, where it is often perpetrated by teachers or peers, or in relation to accessing internships (Van Bergen et al., 2021). Other age groups might face other forms of discrimination, for example in relation to labor market access. In the Netherlands, it was found that job applicants with Arabic names were significantly more likely to be rejected for a job (Blommaert et al., 2013).

Appendix D: Focus Group Outline (in Dutch)

1. Introductie (5 min)

Welkom & Doel

- Bedank de deelnemers voor hun komst vandaag. Samen zullen we de onderwerpen van de enquête in meer detail bespreken.
- Deze focusgroep gaat over:
    - jullie ervaringen met discriminatie en de impact die dat heeft.
    - mogelijke lokale verschillen: hoe en waarom verschilt de ervaring van discriminatie tussen Feijenoord en Schiebroek?
    - en het belangrijkste: hoe mensen die discriminatie ervaren beter ondersteund kunnen worden; samen nadenken over wijkgerichte strategieën of beleid om mensen die discriminatie hebben meegemaakt te ondersteunen. Hopelijk kunnen we zo de effecten van discriminatie op iemands leven en gezondheid verminderen.

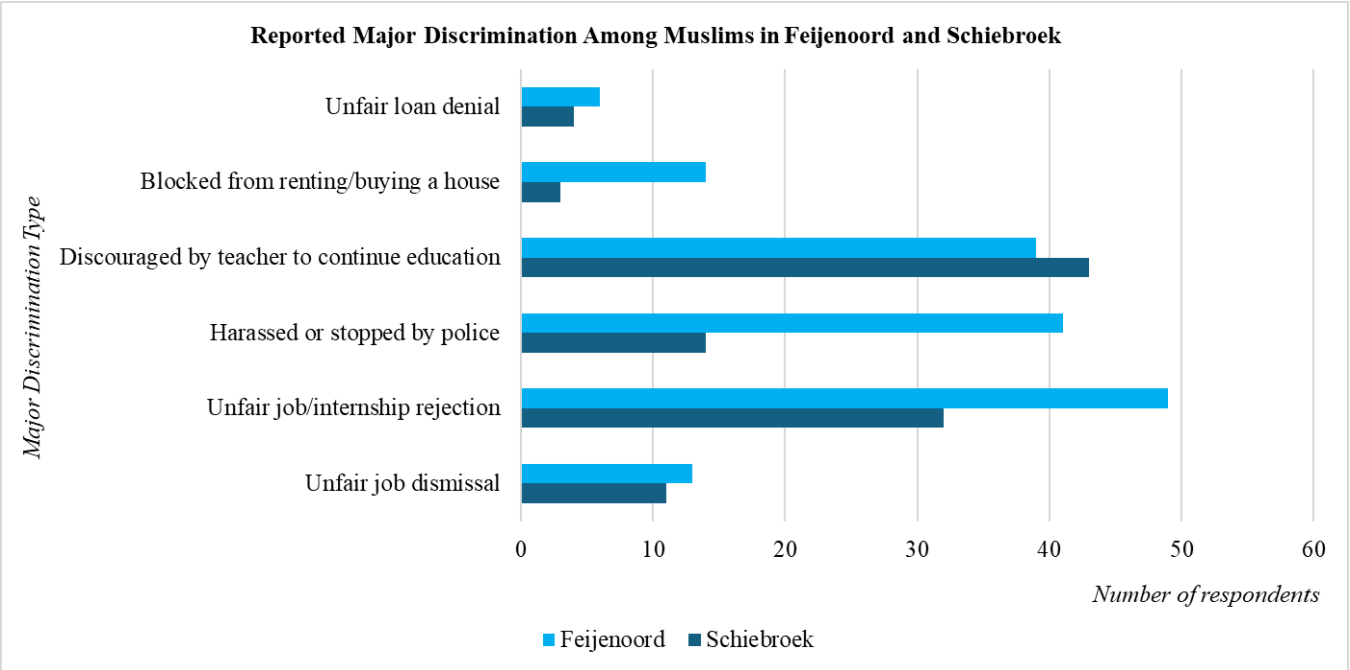
Vertrouwelijkheid

- Korte herhaling privacyformulier
    - Als ik een citaat wil gebruiken in het rapport, zal ik eerst jullie toestemming vragen.
    - Op elk moment kunnen we een pauze nemen of kun je besluiten om te stoppen met deelnemen.
    - Toestemming audio-opname.

2. Alledaagse en grote vormen van discriminatie (15 min)

- Heb je je ooit oneerlijk behandeld gevoeld in Rotterdam vanwege je religie? Zo ja, kun je een voorbeeld delen van een moment waarop dit gebeurde?
    - Gebeuren deze ervaringen vaker in alledaagse situaties (zoals op straat of in winkels) of in grotere situaties (zoals bij het solliciteren naar een baan of het zoeken van een woning)?

- Projecteren grafiek: we zien dat moslims in Feijenoord veel vaker discriminatie ervaren dan moslims in Schiebroek, onder andere in contact met de politie. Waarom zou er zo een groot verschil zitten tussen de wijken?



3. Effecten van discriminatie en ermee omgaan (10 min)

- Sommige mensen zeggen dat discriminatie hen gestrest, angstig of mentaal ziek maakt. Herkennen jullie dit? Zie je nog andere manieren waarop discriminatie mensen kan beïnvloeden?
    - Wat doe jij, of wat doen mensen die je kent, om om te gaan met discriminatie en de effecten ervan?
    - Zijn er dingen in jouw buurt of gemeenschap die hierbij helpen? *(dit leidt het vierde en laatste onderwerp van de focusgroep in)*

4. Brainstormen: wat kan er gedaan worden? (20-25 min)

- Bestaande lokale ondersteuning
    - Zijn er groepen, organisaties of personen in jouw buurt die helpen met het omgaan met discriminatie en de effecten ervan?
    - Welke vormen van hulp of ondersteuning zijn er al voor moslims die discriminatie ervaren?

- Ideeën voor betere ondersteuning (speelse en laagdrempelige brainstormsessie)
    - Stel je voor dat je onbeperkte middelen had. Wat zou er dan in Rotterdam gedaan kunnen worden om mensen die discriminatie ervaren beter te

ondersteunen?

- Als jij de leiding had over de gemeente, wat zou je dan invoeren of veranderen?
- Zijn er kleine dingen die nu al een verschil zouden kunnen maken?
- Denk je dat de gemeente, lokale organisaties of andere groepen meer zouden kunnen doen? Zo ja, wat dan?
- Zijn er belangrijke spelers in de gemeenschap, zoals religieuze leiders, scholen of zorgorganisaties, die hierin een rol zouden kunnen spelen?

- **Van deze 4 ideeën: wat zou het beste werken in jouw buurt en waarom?**
  a) **Specifieke Discriminatie-Hulplijn voor Moslims:** Een speciale hulplijn waar moslimbewoners discriminatie kunnen melden en ondersteuning krijgen van getrainde (moslim)adviseurs die hun ervaringen begrijpen.
  b) **Community Ondersteuningsgroep**: Een regelmatige bijeenkomst (elke 1 à 2 maanden) waar moslims ervaringen kunnen delen, advies krijgen en copingstrategieën bespreken, onder begeleiding van een expert op het gebied van mentale gezondheid.
  c) **Gemeentelijke Antidiscriminatie-Contactpersoon**: Een lokale gemeentelijke vertegenwoordiger die actief in gesprek gaat met moslimgemeenschappen en ervoor zorgt dat hun zorgen over discriminatie meegenomen worden in het beleid van de stad.
  d) **Uitbreiding van Moskeeën of Wijkcentra**: Moskeeën of wijkcentra betrekken bij het aanbieden van workshops en ondersteuningsprogramma's over omgaan met discriminatie en het bevorderen van mentale gezondheid.

5. Afronding (5 min)

- Wat is één belangrijk ding dat je beleidsmakers mee zou willen geven over discriminatie en gezondheid?
- Algemene afsluiting *(deelnemers bedanken, aangeven dat ik beschikbaar ben voor vragen en dat ik de eindresultaten van de scriptie zal delen).*