Do attitudes and behavior of health care professionals exacerbate health care disparities among immigrant and minority groups? An Integrative Literature Review

Abstract

Objectives: Recent investigations of ethnicity related disparities in health care have focused on the contribution of providers' implicit biases. A significant effect on health care outcomes is suggested, but the results are mixed. The purpose of this integrative literature review is to provide an overview and synthesize the current empirical research on the potential influence of health care professionals' attitudes and behaviors towards ethnic minority patients on health care disparities.

Design: Integrative literature review.

Data sources: Four internet-based literature indexes – MedLine, PsychInfo, Sociological Abstracts and Web of Science – were searched for articles published between 1982 and 2012 discussing health care professionals' attitudes or behaviors towards ethnic minority patients.

Review methods: Thematic analysis was used to synthesize the relevant findings.

Results: We found 47 studies from 12 countries. Six potential barriers to health care for ethnic minorities were identified that may be related to health care professionals' attitudes or behaviors biases, stereotypes and prejudices; Language and communication barriers; Cultural misunderstandings; Statistical discrimination; Gate-keeping; Specific challenges of delivering care to undocumented migrants.

Conclusions: Data on health care professionals' attitudes or behaviors are both limited and inconsistent. We thus provide reflections on methods, conceptualization, interpretation and the importance of the geographical or socio-political settings of potential studies. More

empirical data is needed, especially on health care professionals' attitudes or behaviors towards (irregular) migrant patients.

Keywords:

attitudes and behavior; ethnic minorities; immigrants; health care disparities; health care personnel; integrative literature review

Introduction

Even though there is considerable evidence that ethnic minority populations differ from ethnic majority populations regarding access to health care, health outcomes, and mortality in many countries, the potential influence of health care professionals (HCPs) on such disparities is until now only partly explained. Compared with members of the majority society ethnic minorities face more barriers to accessing health care services, including lower rates of health insurance, lower rates of having a regular doctor, and lower use of care (Derose et al., 2009). It is also well examined that some ethnic minorities experience worse health problems compared to the majority population (Heffernan et al., 2011; Smedley et al., 2003; Solé-Auró and Crimmins, 2008; van Ryn, 2002; van Ryn et al., 2006). Under some circumstances ethnic minorities are at higher risk for infectious diseases like tuberculosis, HIV, and hepatitis B and C (Brodhun et al., 2015), or higher premature death rates from heart disease and stroke (Hall et al., 2015). While many factors, such as behavioral patterns or environmental exposure, can contribute to differences in *health outcomes*, one factor are gaps in the delivered quality of care (Kilbourne et al., 2006). This turns the attention to disparities in *health care*. The Institute of Medicine (IOM) provides a frequently cited report in which one of the most commonly accepted definition of ethnic health care disparities can be found: "(…) racial or

ethnic differences in the quality of health care that are not due to access-related factors or clinical needs, preferences, and appropriateness of intervention" (Smedley et al., 2003).

Recent studies of the HCPs' share of responsibility for such disparities have been especially interested in implicit provider biases towards ethnic minorities, which carry the potential to influence medical encounters (Hall et al., 2015; Sabin and Greenwald, 2012; Shavers et al., 2012). Implicit attitudes and beliefs refer to unconscious cognitive constructs that are outside of conscious awareness, and that are not available to report, in contrast to explicit attitudes which are consciously held and can be expressed in words (Sabin and Greenwald, 2012). Such implicitly held constructs, which often project dubious if common stereotypes, exist even among individuals who explicitly claim to hold egalitarian or cosmopolitan worldviews (Sabin and Greenwald, 2012). Moreover, explicit and implicit attitudes are not necessarily related (Sabin et al., 2009; Sabin and Greenwald, 2012). Results of a recent systematic review investigating implicit bias in medical encounters in the USA suggest that low to moderate levels of implicit bias against ethnic minorities is present among many HCPs of different specialties and that they have a significant effect on health care outcomes. However, the results of the review were mixed and it remained unclear how implicit biases concretely affect health care outcomes. Some studies reported that health care outcomes were influenced by implicit ethnic biases and others found no significant correlation (Hall et al., 2015).

One possible explanation for these mixed results is that implicit biases may interact with other characteristics that overlap with ethnicity such as national origin (Hall et al., 2015), language abilities (Fiscella et al., 2002), or residence status (Schenk, 2007), thus conflating the results by not including and discriminating between the different categories. More open questions remain: Have similar studies been performed in other countries too and are results comparable? Do other factors than implicit bias lead to disparities in health care that can be related to HCPs' attitudes and behaviors?

In order to continue examining better the potential influence of HCPs' attitudes and behaviors on health care disparities we conducted an integrative review of the literature (Torraco, 2005). For our search strategy we specifically applied a rather broad definition of the term "ethnic minority": we included all groups that, due to ethnicity, place of birth, citizenship, residence status or the like, have minority status in the country in which they reside (Scheppers et al., 2006). According to this definition "ethnic minorities" are highly heterogeneous, with varying degrees of duration of stay and of acculturation: the term e.g. applies to newly arrived immigrants as well as to communities that have been present in a country for several generations. We further searched for results also in non-US-contexts and searched for potential barriers related to HCPs' attitudes and behaviors that go beyond implicit biases.

This review thus seeks to answer the following main research questions: Do empirical studies report potential concrete barriers that can lead to health care disparities for different groups of ethnic minorities that can be related to HCPs' attitudes or behaviors and if yes which kind of barriers can be identified?

Methods

Literature search

Four internet-based literature indexes – MedLine, PsychInfo, Sociological Abstracts and Web of Science – were searched for articles discussing HCPs' attitudes or behaviors towards ethnic minority patients. The study team and an invited expert confirmed that the search term strings constituted a valid transformation of the research question into a search algorithm, which was then tailored to each database. Titles and abstracts were searched for keywords and Mesh terms relating to health care disparities (prejudice, racism, healthcare disparities, stereotyp*, attitude of health personnel, attitude of physicians, discrimination), minority groups (minority groups, ethnic groups, transients and migrants, migrant*, refugee*, asylum seek*, sans

papiers, illegal migrant*, illegal immigrant*, undocumented migrant*, undocumented immigrant*), and health care personnel (medical staff, health personnel, health care workers, nurs*, physician*). The initial pool of resulting papers (n=2040) were categorized by *[Author A]* as 'relevant', 'potentially relevant' or 'irrelevant' for the following predefined in- and exclusion criteria: (1) qualitative or quantitative study design, (2) study sample of health care personnel only, (3) data reporting health care disparities of ethnic minorities caused by attitudes or behaviors of HCPs, (4) published in English or German. Studies were excluded if they were theoretical or conceptual or if the study population were patients.

[Author B] assessed a random sample of approximately ten percent of the 'relevant' and 'potentially relevant' hits. The inter-rater reliability score, expressed in Cohen's Kappa, was .704 (n=227; 220 agreements, 7 disagreements). The disagreements were discussed until agreement was reached.

Quality assessment

The relevant hits (n=141) were assessed for quality based on the Critical Appraisal Skills Program (CASP) tool for qualitative research and cohort studies (Critical Appraisal Skills Programme (CASP), 2013). The CASP tools provide a systematic approach to assess the degree of evidence in a transparent and systematic way. The tools for cohort and qualitative studies have 11 and 10 questions respectively. Originally the tool for cohort studies has 12 questions. However, we excluded the question on follow-ups of study subjects, because it was not relevant for our assessment. Following Jun et al. (2016) we assigned numeric values to the assessment tools ("yes=2", "can't tell=1", "no=0") to provide a systematic quality index of the studies. This resulted in a possible value range between 0-20 for the assessment of the qualitative studies and 0-22 for the assessment of the quantitative studies, respectively. The quality assessment is an essential step in conducting an integrative review since the inclusion of poor quality studies can influence the validity of the review and weaken the overall

conclusions (Cameron et al., 2011). Using this assessment method, studies with scores below 9 were assessed as lacking sufficient quality and were thus excluded. Thirteen studies were excluded based on this assessment for methodological reasons (sample size, lack of documentation of used methods, sample bias).

Tables 1 and 2 provide the summary of the quality assessment for the included qualitative and quantitative studies.

142 "Table 1: Quality assessment for qualitative studies"

First Author (year; country)	Was there a clear statement of the aims of the research?	Is a qualitative methodology appropriate?	Was the research design appropriate to address the aims of the research?	Was the recruitment strategy appropriate to the aims of the study?	Was the data collected in a way that addressed the research issue?	Was the data analysis sufficiently rigorous?	Has the relationship b/t researcher and participants been adequately considered?	Have ethical consideration been taken into consideration?	Is there a clear statement of findings?	How valueable is the research?	Qualitative score (max = 20)
Cortis (2004; UK)	2	2	1	2	2	2	1	2	2	1	17
Hultsjö (2005; SWE)	2	2	2	1	2	2	2	2	2	2	19
Koehn (2005; FIN)	2	2	2	2	2	2	2	0	2	2	18
Richardson (2006; UK)	2	2	2	2	2	1	1	2	2	2	18
Vydelingum (2006; UK)	2	2	2	1	1	2	2	0	2	2	16
Peckover (2007; UK)	1	1	2	2	1	2	0	2	2	1	14
Lyons (2008; IRL)	0	1	2	1	1	2	0	2	2	1	12
Puthussery (2008; UK)	2	2	2	2	1	1	1	0	2	0	13
Roberts (2008; UK)	2	2	1	2	1	2	2	2	2	2	18
Suurmond (2010; NL)	2	2	2	2	2	1	0	2	2	2	17
Jensen (2011; DK)	2	2	2	2	2	1	2	2	2	2	19
Dauvrin (2012; sixteen European	2	2	2	2	2	1	2	2	2	2	19

countries)											
Manirankunda (2012; B)	2	1	2	2	2	2	0	2	2	2	17
Dastjerdi (2012; CA)	2	1	1	2	2	0	0	2	2	1	13

Note: Scores: 0 = No, 1 = Can't tell, 2 = Yes.

143

144 "Table 2: Quality assessment for quantitative studies"

First Author	Did the study address clearly focused issues?	Did the authors use an appropriate method to answer their question?	Was the sample recruited in an acceptable way?	Was the exposure/outcome accurately measured to minimize bias?	Was the appropriate theoretical framework used?	Have the authors identified all important confounding factors?	Were the main study outcome measures clearly described and appropriate?	Were the main study findings clearly described?	Were the methods of data analysis adequately described and appropriate?	Were the conclusions supported by results?	Can the results be applied to the local population?	Quantitative score (max = 22)
Hooper (1982; USA)	2	2	2	1	2	2	2	2	2	1	2	20
Morgan (1983; USA)	2	2	1	1	2	1	2	2	2	2	2	19
Gemson (1988; USA)	2	2	2	1	0	2	0	2	1	2	2	16
Ahmad (1991; UK)	2	1	2	0	2	1	1	2	2	2	2	17
Rooda (1992; USA)	2	2	1	1	2	0	2	1	1	2	2	16
Todd (1994; USA)	2	2	2	2	1	2	2	2	2	2	2	21
Joseph	2	2	1	1	0	0	1	2	2	2	2	15

(1997; USA)												
Eliason (2000; USA)	2	1	0	2	1	0	1	2	0	1	2	12
Sleath (2000; USA)	2	2	1	2	1	2	2	2	2	2	2	20
Tamayo-Sarver (2003; USA)	1	2	2	2	0	2	2	2	2	2	2	19
Fincher (2004; USA)	2	2	1	1	2	1	2	2	1	2	2	18
Michaelsen (2004; DK)	2	1	1	0	2	1	2	1	2	2	2	16
Wilson (2004; USA)	1	0	2	1	0	1	1	2	2	2	2	14
Balsa (2005; USA)	2	2	2	2	2	2	2	2	2	2	2	22
Kales (2005; USA)	2	2	0	1	0	2	2	2	2	2	1	16
Lurie (2005; USA)	2	2	2	2	1	2	2	2	1	2	2	20
van Ryn (2006; USA)	2	2	2	2	2	2	2	2	2	2	2	22
Modi (2007; USA)	2	2	2	2	1	0	2	1	1	1	2	16
Babitsch (2008; GER)	2	2	2	2	0	1	2	2	2	2	2	19
Burgess (2008; USA)	2	2	2	2	2	1	2	2	2	2	1	20

Festini (2009; I)	2	1	1	1	2	1	2	2	2	2	2	18
Sabin (2009; USA)	2	2	0	1	2	1	2	2	2	2	2	18
Hudelson (2010; CH)	2	2	2	1	2	2	2	2	2	1	2	20
Mallinger (2010; USA)	2	1	1	2	1	1	1	2	2	2	2	17
Hausmann (2011; USA)	2	2	1	2	1	2	2	2	2	2	2	20
Heffernan (2011; USA)	2	2	2	2	1	2	1	2	2	2	1	19
Johnston (2011; USA)	2	2	2	2	2	2	2	2	2	2	2	22
Vargas Bustamante (2011; USA)	1	2	2	1	1	2	2	2	2	2	2	19
Young (2011; USA)	2	2	2	2	1	1	2	2	2	2	2	20
Cox (2012; USA)	1	2	2	2	2	2	2	2	2	2	2	21
Moskowitz (2012; USA)	2	1	0	2	2	1	2	1	2	2	1	16
Sabin (2012; USA)	1	2	0	2	2	1	2	2	2	1	2	17
Stepanikova (2012; USA)	2	2	0	2	2	1	2	2	2	2	2	19

Note: Scores: 0 = No, 1 = Can't tell, 2 = Yes.

145

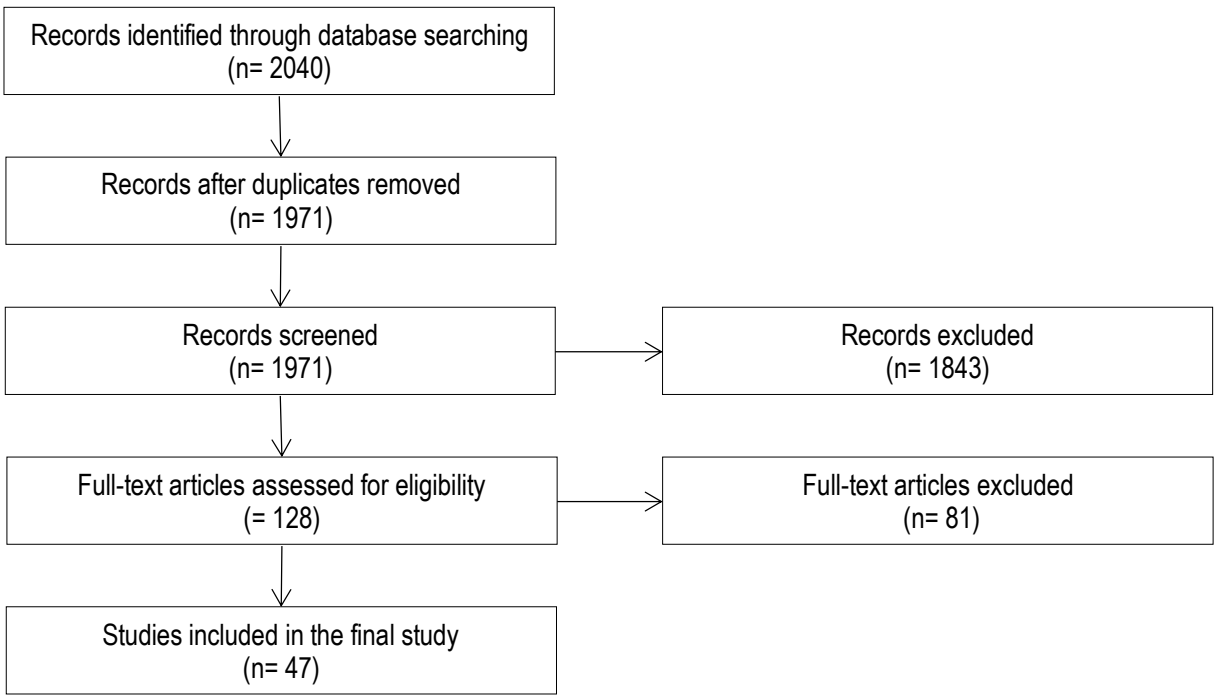
146 ***Data analysis***

147 Methodologically as well as related to study settings and aims, the final sample of 47 relevant
148 studies was diverse (see table 3). In light of this diversity we chose a thematic analysis
149 approach to synthesize the findings (Dixon-Woods et al., 2005). The method is especially
150 suitable because it provides a means to integrate qualitative and quantitative evidence.
151 Regarding synthesis of data we only used study findings labeled in the texts as "results" or
152 "findings" (Thomas and Harden, 2008). *[Author A]* classified the entire set of included
153 studies; this was then reassessed by *[Author B]*.

154 We categorized our results according to: 1) Study sample and geographical
155 distribution, 2) Methodologies, 3) Studied HCPs, 4) Minority patient groups 5) Potential
156 barriers contributing to health care disparities related to attitudes or behaviors of the HCPs.
157 The following flow chart shows our selection process.

158

159 "Figure 1: Flow chart of the search and selection process"



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162 **Results**

Study sample and geographical distribution

The 47 studies originated from altogether 12 countries: 28 were from the USA, 7 from UK, 2 from Denmark, one each from Belgium, Canada, Finland, Germany, Ireland, Italy, Netherlands, Sweden and Switzerland. One study was a cross-national European Union wide project.

Methodologies

The research designs were as follows: survey (24), qualitative approach (14), psychometric tests (7), nonparticipant observations (4), chart or medical records review (2), randomized trials and other between-subjects designs (2), and a review (1) (see table 3). Multiple studies employed mixed methods, resulting in a higher number of research designs than of included studies. The qualitative studies were mainly conducted in the UK (6) followed by Sweden (1), Finland (1), Ireland (1), Netherlands (1), Denmark (1), a cross-national European Union wide project. (1), Belgium (1) and Canada (1). None of the studies that were conducted in the USA used a qualitative research design. The majority of the surveys were conducted in the USA (18). In Continental Europe, including Denmark, Germany, Italy and Switzerland, we found only four studies that used surveys to gather their data. In addition one survey was conducted in the UK. All other research designs, including psychometric tests, nonparticipant observation, analysis of chart or medical records, randomized trials, and a literature review were also conducted in the USA.

"Table 3: Number of studies using different methods (studies can use more than one method)"

Method	Survey	Qualitative Interview	Psychometric Test	Nonparticipant Observation	Chart or medical records	Randomized Trial	Review
Number	24 (51.1)	14 (29.8)	7 (14.9)	4 (8.4)	2 (4.2)	2 (4.3)	1 (2.0)

of studies (%)	
Survey: Standardized questionnaires (panel and cross-sectional) or telephone interviews Qualitative Interview: Semistructured interviews, in-depth interviews, content analysis, focus groups etc. Psychometric Test: Case vignettes (in written or video form) or implicit association tests Nonparticipant observation: Video or audio recorded visits, observations of visits through one way mirrors Randomized trials: Between-subject case vignettes, randomly assigned cultural sensitivity training (experimental and control group) Chart or medical records: Hospital discharge data, chart reviews, medical records Review: Review	

Studied HCPs

The studies involved physicians, medical students, nurses, nursing students, pharmacists, and other HCPs, including midwives, obstetricians or occupational therapists.

Most (n=32) studies examined the attitudes and behaviors of physicians. Studies including nurses and nursing students (n=17) mainly used qualitative designs (n=10). All of these qualitative studies combined a nursing sample with other HCPs, particularly midwives and occupational therapists.

Minority patient groups

Most of the studies (n=35) focused on attitudes or behaviors towards racial/ethnic minorities; eight on regular immigrants; four on refugees, asylum seekers or undocumented migrants, and one study did not specify the patient group. The studies focusing on the different kinds of migrant groups were almost all conducted in Continental Europe (*Germany*: Babitsch et al., 2008; *European-Union wide*: Dauvrin et al., 2012; *Italy*: Festini et al., 2009; *Switzerland*: Hudelson et al., 2010; *Sweden*: Hultsjö and Hjelm, 2005; *Denmark*: Jensen et al., 2011;

Finland: Koehn and Sainola-Rodriguez, 2005; *Belgium*: Manirankunda et al., 2012; *Denmark*: Michaelsen et al., 2004; *Netherlands*: Suurmond et al., 2010) One study on Iranian immigrants was conducted in Canada (Dastjerdi, 2012).

Potential barriers contributing to health care disparities related to attitudes or behaviors of HCPs

Thematic analysis revealed six barriers related to HCPs' attitudes or behaviors and resulting in health care disparities for ethnic minorities. One or more barriers were identified in each section of findings independent of study methods applied. There was considerable overlap among the themes identified in the studies. For example, it might be that "cultural misunderstandings" can be influenced by the barrier "language and communication", or that differences in communication styles can be the result of HCPs' implicit biases. The supporting quotes below are thus representative rather than comprehensive.

Barrier 1: Biases, stereotypes and prejudices: 24 studies

In total we identified 24 studies that address explicit and/or implicit HCPs' attitudes (Ahmad et al., 1991; Burgess et al., 2008; Cortis, 2004; Eliason and Raheim, 2000; Fincher et al., 2004; Heffernan et al., 2011; Hudelson et al., 2010; Joseph, 1997; Kales et al., 2005; Lyons et al., 2008; Michaelsen et al., 2004; Modi et al., 2007; Morgan, 1983; Moskowitz et al., 2012; Peckover and Chidlaw, 2007; Puthussery et al., 2008; Richardson et al., 2006; Rooda, 1992; Sabin and Greenwald, 2012; Stepanikova, 2012; Suurmond et al., 2010; Tamayo-Sarver et al., 2003; van Ryn et al., 2006; Vydelingum, 2006). The studies under this barrier were conducted in 6 different countries. Most of them in the USA (14), followed by UK (6), Switzerland (1), Ireland (1), Netherlands (1), and Denmark (1).

1a) Implicit attitudes

All of the studies under this subtype were conducted in the USA. In an attempt to uncover the effect of implicit biases, Moskowitz et al. found evidence that physicians reacted more quickly towards diseases associated with African Americans when primed with an African American face, indicating an implicit association of certain diseases with African Americans. The effect occurred not only with diseases African Americans can be genetically disposed to (e.g. sickle cell anaemia), but also with conditions and social behaviors with no biological association (e.g. drug abuse) (Moskowitz et al., 2012). Van Ryn et al. reported an interconnected interplay of socio-demographic variables in physicians' perceptions of black and white candidates for coronary artery bypass graft surgery (CABG). Recommendations for CABG were significantly influenced by patients' ethnicity among male, but not female patients. Physicians' perceptions of patients' education level and physical activity preferences mediated the effects of ethnicity on CABG recommendations (van Ryn et al., 2006). One vignette study delved more deeply into how implicit biases activated by implicit information (subliminal priming) about patient race/ethnicity influence physicians' clinical judgments (Stepanikova, 2012). In this study physicians were pressed for time experimentally. Only physicians under time pressure were more likely to give less serious diagnoses to Black and Hispanic patients, and to provide fewer specialist referrals to blacks. Another study presented clinical vignettes including African American, White, and Hispanic patients with no effect on treatment decisions (Tamayo-Sarver et al., 2003).

1b) Explicit attitudes

The studies under this subtype were conducted in the UK (6), Switzerland (1), Ireland (1), Denmark (1), and the Netherlands (1). Practical approaches for the reduction of disparities in health care depend, among other things, on HCPs' awareness that they themselves may be part of the problem. Alas, 8 studies reveal a lack of awareness that HCPs' attitudes and behaviors could be among the causal factors contributing to the persistence of health care

disparities (Cortis, 2004; Gemson et al., 1988; Lurie et al., 2005; Mallinger and Lamberti, 2010; Peckover and Chidlaw, 2007; Roberts et al., 2008; Vydelingum, 2006; Wilson et al., 2004). HCPs tend to believe that the quality of health care delivery is surreptitiously affected by patient ethnicity, but that such discrimination, while evident in the practices of other HCPs, is absent in their own (Lurie et al., 2005; Mallinger and Lamberti, 2010). This "blindness" also emerged in qualitative interview studies (Richardson et al., 2006).

Barrier 2: Language and communication barriers: 20 studies

Over 40% of our sample (n=20) identified language and communication problems as barriers to equitable health care provision (Ahmad et al., 1991; Babitsch et al., 2008; Cox et al., 2012; Dastjerdi, 2012; Dauvrin et al., 2012; Festini et al., 2009; Hausmann et al., 2011; Hooper et al., 1982; Hultsjö and Hjelm, 2005; Jensen et al., 2011; Lyons et al., 2008; Manirankunda et al., 2012; Michaelsen et al., 2004; Peckover and Chidlaw, 2007; Puthussery et al., 2008; Richardson et al., 2006; Sleath et al., 2000; Suurmond et al., 2010; Vargas Bustamante and Chen, 2011; Young et al., 2011). The studies under this barrier were conducted in 11 different countries, including USA (6) UK (4), Denmark (2), Canada (1), Germany (1), Italy (1), Sweden (1), Ireland (1), Belgium (1), Netherlands (1), and a cross-national European Union wide project. Language barriers were reported to diminish HCPs' ability to provide high-quality care (Vargas Bustamante and Chen, 2011) and to complicate the medical encounter as patients may not possess the vocabulary to accurately describe their history and concerns, which renders diagnostic and treatment decision-making more uncertain (Jensen et al., 2011). This problem may be particularly true for sensitive issues such as sexuality and HIV (Manirankunda et al., 2012). A study conducted in different clinical settings in Germany demonstrated that patients' ethnicity had a significant effect on physicians' satisfaction with the treatment course. However, when communication problems were taken care of the relevance of this factor disappeared (Babitsch et al., 2008).

In several countries, health care interpretation services are provided at no additional cost to patients e.g. in the Netherlands. However, HCPs do not always make full use of professional interpreters, not only due to lack of availability (Babitsch et al., 2008) but also due to convenience reasons (Suurmond et al., 2010).

Studies focusing on the medical encounter report incoherent findings. Two studies used nonparticipant observational study designs (video (Cox et al., 2012) and audio records visits (Hausmann et al., 2011)). Cox et al. found that physicians interact differently with families of various minority racial/ethnic groups which is expressed in reduced communicative engagement in primary care visits. In some instances, controlling for disadvantaged status eliminated the association of race/ethnicity with communicative engagement. In addition, income was significantly associated with communicative engagement, with lower-income families experiencing less engagement in comparison to medium- and high-income families (Cox et al., 2012). Hausmann et al.(2011) observed no differences connected to ethnicity in the medical encounter with regard to various criteria (e.g. length of visit, amount of dialogue, informed decision-making). However, it is questionable how far these results are comparable to others because it was conducted in a rather atypical study setting, a Veterans Affairs orthopaedic setting serving a socioeconomically relatively homogeneous patient population.

Barrier 3: Cultural misunderstandings: 7 studies

Numerous studies found that differences in understanding concepts such as illness, dying or death, as well as different gender norms, are not innocuous: they can generate difficulties and anxieties on both sides of the patient-HCP encounter (Cortis, 2004; Festini et al., 2009; Hultsjö and Hjelm, 2005; Koehn and Sainola-Rodriguez, 2005; Lyons et al., 2008; Richardson et al., 2006; Suurmond et al., 2010). The studies under this barrier were conducted

304 in six different countries, including UK (2), Italy (1), Sweden (1), Finland (1), Ireland (1),
305 Netherlands (1).

306 A study conducted in Finland, for example, compared understandings of health care-
307 related issues held by physicians and nurses with those held by asylum seekers from different
308 cultural backgrounds. In the majority of cases, the respective understandings diverged
309 significantly, especially regarding past and present health status, and the level of confidence
310 in the HCPs' treatment and recommendations (Koehn and Sainola-Rodriguez, 2005). Such
311 divergent understandings may explain why some patients may seem to HCPs to be acting in
312 unexpected or seemingly irrational ways and patients may lose confidence in their HCPs as a
313 result of misunderstandings or inflated expectations that cannot be met (Suurmond et al.,
314 2010).

315

316 ***Barrier 4: Statistical discrimination: 3 studies***

317 This form of discrimination is the result of the application of conditional probability
318 assumptions due to clinical uncertainty. HCPs' uncertainty may derive from several sources
319 like the amount of available objective data, such as laboratory values or x-ray images
320 (Johnston and Bao, 2011) and may influence the quality of information available for clinical-
321 decision-making, and hence the health care quality (Balsa et al., 2005; Johnston and Bao,
322 2011; Todd et al., 1994). All of the studies under this barrier were conducted in the USA.

323 The statistical discrimination model also assumes that in cases of diagnostic
324 uncertainty physicians may use patients' ethnicity as one determining factor for formulating a
325 diagnosis even when the evidence is rather weak such as in depression among African
326 American men (Ward and Mengesha, 2013).

327 Balsa et al. studied the influence of race on diagnoses of diabetes, hypertension and
328 depression. They only found significant effects of minority status for diabetes and
329 hypertension diagnosis when clinical uncertainty was prevalent. Differences in language use

and interpretation also led to misinterpretation of symptoms and thus to an influence on the diagnoses of depression in ethnic minorities since physicians relied less on the minority patients' reports (Balsa et al., 2005).

Barrier 5: Gate-keeping: 4 studies

Limited access to health care is usually understood as a structural barrier, but the literature also suggests that attitudes and behaviors of HCPs may amount to discriminatory "gate-keeping" of ethnic minority patients. The studies under this barrier were conducted in four different countries, including USA (1), Denmark (1), Canada (1), Netherlands (1), and a cross-national European Union wide project.

Even if HCPs are aware of specific laws regulating access for minority patients, they are tasked with interpreting the conditions, and they may not always interpret without bias or prejudice (Dauvrin et al., 2012; Jensen et al., 2011; Suurmond et al., 2010; Vargas Bustamante and Chen, 2011). Suurmond et al., for example, reported cases of restriction of urgent care involving uninsured patients, even though the refusal to operate on grounds of lack of insurance is in fact unlawful in the Netherlands, where uninsured patients are legally entitled to receive appropriate and not only emergency health care (Suurmond et al., 2010).

However, several findings indicate that HCPs seek ways around access related barriers in order to provide *better* care, e.g. prescribing in one's own name. All study participants from Accident and Emergency departments in 16 European countries reported full access to their services for undocumented migrants, even in countries where health care is legally inaccessible for them (Dauvrin et al., 2012).

A US-based study reported that physicians treating Latinos were less likely than physicians treating primarily white patients to believe in their ability to provide high-quality care mostly due to no ability to pay (Vargas Bustamante and Chen, 2011). However, there was no connection between perceived ability to pay or uninsured status and physician

behavior or treatment (Vargas Bustamante and Chen, 2011). This result seems to indicate HCPs' endeavors to act as "gate-crashers".

Barrier 6: Specific challenges of delivering care to undocumented migrants: 3 studies

Delivering health care services to undocumented migrants is a well-documented challenge. Being in a very real sense *personae non gratae* renders such persons especially vulnerable when they are also confronted with health problems (Dauvrin et al., 2012; Jensen et al., 2011; Manirankunda et al., 2012). The studies under this barrier were conducted in 3 different countries, including Denmark (1), Canada (1), and a cross-national European Union wide project.

A study across several European Union member states explored the experiences of HCPs providing care to undocumented migrants (Dauvrin et al., 2012). Although staff in emergency rooms generally reported providing full access to urgent interventions, undocumented migrants still face significant barriers to accessing health services. They may have to pay extra costs, for example, which may in turn prevent them from using even emergency services subsequently (Dauvrin et al., 2012). Difficulties in continuity of care can put physicians on uncertain grounds concerning whether and how to treat undocumented migrants (Jensen et al., 2011). Tests, particularly for chronic conditions necessitating long-term follow-up, have been perceived by HCPs to be inappropriate e.g. in the case of HIV-testing, since on-going care could not be assured for patients who might be deported at any time (Manirankunda et al., 2012). Furthermore, lack of knowledge including whether and how the notification of police or other public authorities is legally mandated appear to be common among HCPs and thus serve as an important barrier to health care access (Dauvrin et al., 2012; Jensen et al., 2011).

Discussion

382 At first sight this review seems to provide substantial evidence of six potential barriers for
383 ethnic minority patients (including migrants) to receive high quality health services, which are
384 related to HCPs' attitudes and behaviors: Biases, stereotypes and prejudices; Language and
385 communication barriers; Cultural misunderstandings; Statistical discrimination; Gate-keeping;
386 Specific challenges of delivering care to undocumented migrants.

387 At a closer look, however, certain features can be identified that render it difficult to
388 claim strong evidence. The number of studies we found is small, especially given the
389 heterogeneity of the studies and the large spectrum they are covering. It is almost impossible
390 to compare studies in detail, as this would require more similarity and hence comparability
391 regarding method or study sample.

392 One specific gap standing out from our meta-analysis is the lack of studies in the non-
393 US or UK context. Only 12 studies are not from US or UK, which can – if at all – only partly
394 be explained by our inclusion criteria of English and German studies only. Furthermore, only
395 eight studies focused on regular immigrants; and as little as four focused on refugees, asylum
396 seekers or undocumented migrants.

397 Another problem prohibiting the claim of strong overall evidence is that the studies
398 differ fundamentally according to the socio-political context. Most studies in the USA
399 focused on ethnicity, whereas the European studies also explicitly dealt with the situation of
400 immigrants. These findings reveal regional differences in history, definitions, and background
401 concepts and which hence impact study design, results and discussion. Therefore, insights
402 drawn from one context cannot be (easily) transferred to or compared with another.

403 Several studies use the hybrid-term "race/ethnicity". The expressions "race",
404 "ethnicity", "immigrant" provide not only a variety of terms but they also refer to several
405 different theoretical concepts (Schenk, 2007). This emphasizes the importance for researchers
406 to carefully define and report their understanding of the underlying concepts. Otherwise it is
407 difficult to interpret study results e.g. because it may be not clear whether the term

race/ethnicity refers to genetic, cultural, linguistic, socioeconomic, or health relevant lifestyle differences. In order to better understand and tackle disparities in health and health care it is therefore important to "(...) focus beyond race/ethnicity alone to consider the influence of other factors such as disadvantaged status among minority families" (Cox et al., 2012).

Race/ethnicity is one of the most important social categories in the USA due to its historical, cultural, and political background (American Sociological Association, 2003). The concept is historically associated with economic exploitation, political marginalization, and social stigmatization and is thus important for many important aspects of life (American Sociological Association, 2003). In contrast, in Continental Europe the term “race” is often perceived as inherently problematic, grounded in part in the rejection of theories based on the existence of different races and on the fact that it is strongly associated with laws by the fascist governments in Europe during the 1930s and 1940s (Bell, 2009). This, among other socio-political factors, could be one possible explanation for the different patient groups mentioned in the studies in the USA and Continental Europe. It remains questionable whether study results from so-called race conscious societies can inform discussion about ethnic disparities e.g. in a Continental European context and vice versa.

Furthermore, the research we found on disparities in health care in the USA seems to be driven explicitly by a sense of deep implicit bias. Our findings reported under the barrier “implicit biases” mainly correspond to and support the findings of the systematic review conducted by Hall et al. (2015). Hall and colleagues included 15 studies in their review. They reported mixed results on how implicit bias affects health care outcomes. We support these findings, as we also found studies that reported no effects of HCPs' biases on treatment decisions regarding the diagnosis and treatment of depression (Kales et al., 2005), or tracheostomy placement (Heffernan et al., 2011). Furthermore, one study reported that - when controlled for SES – significant race/ethnicity differences disappeared (Cox et al., 2012). In addition, we also found studies where the effect of HCPs’ implicit biases was only significant

under certain conditions, such as only in physicians under time pressure (Stepanikova, 2012), or only among male patients (van Ryn et al., 2006). Compared to Hall et al. we did not exclusively search for implicit biases, but searched for additional factors that might lead to potential barriers that may result from HCPs' behaviors or attitudes. We explicitly did not limit our search strategy to effects on patients of color, but also included immigrants in our review. However, we found no studies that focus on implicit biases e.g. towards (irregular) immigrants and no studies on implicit bias that were conducted outside the USA. An additional feature, that complicates the claim of strong evidence, concerns the statistical classification of ethnic minorities. There is considerable heterogeneity within each of these ostensible groups. For example the Asian population in the USA (within which 5.6% identify as Asian alone or in combination with other races (US Census Bureau, 2010) consists of individuals from 28 countries, each with its own distinctive history, culture, and language (Nazroo et al., 2006). Maybe even more important in the light of our findings, is the considerable demographic and socioeconomic diversity among these groups (Nazroo et al., 2006). Sociodemographic characteristics like gender or SES seem to be important mediators in the understanding of disparities in health and health care. This points out the necessity to carefully design census categories that can adequately describe ostensible groups and that have the potential to produce meaningful results, without perpetuating stereotypes (Angel and Angel, 2006).

Some studies in this review used case vignette patients in written or video form. The strength of this technique is that it allows the isolation of nonmedical patient factors such as race/ethnicity or sex as independent variables. However, it is unclear whether the vignette technique is externally valid, that is, whether the expressed responses on the vignettes are representative for real world decision-making (Aberegg and Terry, 2004). Improving vignette experiments in the sense that they better capture the complexity of medical encounters (e.g.

through factorial surveys) would be important for further research (Burgess, 2010; Drewniak et al., 2016).

To sum up, the findings of this review indicate that there are regional differences in definitions and underlying concepts to describe the patient groups of interest, challenges in designing adequate census categories to capture the great heterogeneity of ethnic groups, and methodological challenges to assess complex medical encounters. Taken as a whole we thus can only attest isolated evidence of barriers resulting from HCPs' attitudes and behaviors on health care of minorities. At this stage, we cautiously deduce from our results the following:

First, we attest a striking overall gap in empirical literature on HCPs' attitudes and behaviors in medical encounters with ethnic minority groups. More well-designed research is needed that explains its underlying concept of "race", "ethnicity" and "migration status". Further, although race/ethnicity or immigration status is one factor that has the potential to influence the medical encounter it is well documented that it is a complex interplay of additional stigmatizing characteristics such as gender or low SES that influence treatment decisions in a problematic way (van Ryn et al., 2006; van Ryn and Burke, 2000; Williams et al., 2010). Studies will have to find ways to do justice to these considerations.

Second, - in line with Hall et al. - our findings revealed a number of studies suggesting that diagnosis and treatment of racial/ethnic minority patients may be implicitly biased even in the absence of intent or awareness (Moskowitz et al., 2012; Sabin et al., 2009; Stepanikova, 2012; van Ryn et al., 2006). To help HCPs master the thin line between the beneficial use of cultural knowledge and the harmful activation of implicit stereotypes, it might be useful to increase the awareness against overgeneralizing cultural differences via continuous medical education efforts (Stone and Moskowitz, 2011). Addressing the topic of non-conscious bias and stereotypes may provide professionals with the skills needed to reduce personal bias in the interaction with minority group patients (Burgess et al., 2010; Stone and Moskowitz, 2011).

Third, the literature on disparities in health care for ethnic minorities would be strengthened by a greater attention on how structural or organizational policies and procedures influence individual behavior of HCPs. Psychological explanations that appeal to mental processes about race or ethnicity belong to an individualistic theory of social phenomena (Machery et al., 2010). However, as institutional theories of racism in sociology suggest contemporary racial or ethnic discrimination is not so much based on individual stereotypes, but rather a result of institutions and policies (Machery et al., 2010). According to institutional theories, racism can be generated and sustained without racist individuals; “this is, simply put, racism without racists.” (Machery et al., 2010). Research would greatly benefit from study designs that do not only examine single outcomes (e.g., associations between race/ethnicity and treatment decisions) at the individual level of analysis but that also pay attention to structural conditions such as (bureaucratic) characteristics of health care systems that frame individual actions.

Fourth, we found several studies under the barrier "language and communication" and "cultural misunderstandings". There are existing national standards such as the standard for culturally and linguistically appropriate services in health and health care (CLAS) in the USA (Office of Minority Health and U.S. Department of Health and Human Services, 2013). However, such standards refer often to the organizational level of health care systems and not to the concrete behaviors or decisions of HCPs. In many cases open questions remain such as whether and how such standards are put into practice and whether they are able to produce a beneficial impact by improving the health care provision and ultimately the health outcome.

Our study has some limitations. First, the review only represents insights of articles published in journals, and also only in English and German as a result of our search strategy. Articles published in books or reports that do not appear in the chosen literature indexes, or articles in other languages were not included. We can therefore only provide a limited overview of studies.

Second, this study reviewed only published effects of attitudes or behaviors of health care professionals on health care disparities. Integrative reviews always carry the potential problem of publication biases because the reported results may be biased and directed by the hypothesis or presuppositions of the researchers (Sterne et al., 2008). The possibly biased selection of published or non-published research may therefore only provide a small segment of the barriers which actually occur in clinical reality.

Third, most of the different countries in our review are represented by only one study (Belgium, Canada, Finland, Germany, Ireland, Italy, Netherlands, Sweden, and Switzerland). Furthermore, these studies focus on different, partially very specific, groups of migrants with varying legal residence status. This group heterogeneity limits our ability to examine the influence of attitudes or behavior towards these groups and calls for more differentiated research examining the influences of HCPs' behaviors and attitudes in different socio-cultural contexts.

Fourth, the barriers "statistical discrimination", "gate-keeping", and "specific challenges of delivering care to undocumented migrants" derived from three, respectively four (gate-keeping) studies. Given the low number of studies in total and the considerable heterogeneity of the studies regarding the regional and conceptual differences in study designs and underlying concepts, it might be questioned how robust in general, but also across different health care settings, these barriers are.

Conclusion

We found 47 studies that report barriers that can be related to HCPs' attitudes or behavior. Our analysis of these barriers may help to increase transparency related to disparities in health care. We have, however, identified certain features that render the claim of strong evidence difficult and thus prohibit the development of detailed recommendations. Research on HCPs' attitudes and behaviors towards (undocumented) immigrant patient, asylum seekers and

refugees is even more sparse than the already little amount of research on other ethnic minorities. Furthermore, we have identified some challenges in the conceptualization, study design, interpretation and use of results of such empirical studies. It is a future challenge challenge – and maybe even more in the context of currently rising populism in Western countries – to further examine the mechanisms of HCPs' attitudes and behaviors, to continue interpreting these and other findings and to translate them into constructive knowledge that will not perpetuate stereotypes and barriers, but that will ultimately help to decrease disparities in health care.

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