DISSERTATION

German attitudes towards refugees:
Associations between dismissive or empathetic perceptive
processes and mental health

Einstellungen von Deutschen gegenüber Geflüchteten:
Zusammenhänge zwischen ablehnenden oder empathischen
Wahrnehmungsprozessen und der psychischen Gesundheit

zur Erlangung des akademischen Grades
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List of Abbreviations

BSSS	Berlin Social Support Scales
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
EAA	Empathy-Attitude-Action
e.g.	Exempli gratia
i.e.	Id est
ITT	Integrated Threat Theory
MLR	Maximum Likelihood Parameter
n.s.	Not significant
RQ	Research question
SD	Standard Deviation
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residuals
RMSEA	Root Mean Square Error of Approximation
TLI	Tucker-Lewis Index
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees

Extended German Abstract (Ausführliche deutsche Zusammenfassung)

Geflüchtete weisen ein erhöhtes Risiko für psychische Erkrankungen auf, erhalten aber unzureichende Informationen über Zugang zu Behandlungen, teils aufgrund negativer Einstellungen von Mitgliedern der aufnehmenden Gesellschaft. Ihr Bewusstsein für Informationsbarrieren ist jedoch entscheidend für deren Beseitigung. Negative Einstellungen Deutscher gegenüber Geflüchteten können durch ablehnende Bedrohungswahrnehmungen und mangelnde Empathie erklärt werden. Unklar ist, inwiefern ablehnende Wahrnehmungen gegenüber Geflüchteten die Wahrnehmenden selbst psychisch belasten und wie empathische Wahrnehmungen und positive Einstellungen gegenüber Geflüchteten sich auf das Bewusstsein für deren Informationsbarrieren in Bezug auf Gesundheitsversorgung auswirken. Die wissenschaftliche Untersuchung der Zusammenhänge als Basis für Implikationen zur Verbesserung der psychischen Gesundheit der Beteiligten war das Ziel der vorliegenden Arbeit

Dazu wurden zwei Modelle in einem Metamodell integriert und die Annahmen in zwei Studien untersucht. In Studie 1 standen die Bedrohungswahrnehmung Deutscher und ihre psychische Belastung im Fokus, während in Studie 2 Zusammenhänge zwischen Empathie, positiven Einstellungen gegenüber Geflüchteten sowie mit dem Bewusstsein für deren Informationsbarrieren untersucht wurden. Beide Studien betrachteten Intergruppen-Antezedenzien von Wahrnehmung (Soziale Identität als Deutsche*r und interkulturelle Kontakterfahrung).

Auf Basis einer querschnittlichen Online-Befragung wurden Strukturgleichungsmodellierungen durchgeführt. Studie 1 (n=1000) ergab Zusammenhänge von Bedrohungswahrnehmung Deutscher gegenüber Geflüchteten mit gesteigerter psychischer Belastung sowie mit stärkerer sozialer Identifikation als Deutsche*r. Positive interkulturelle Kontakterfahrungen wiesen gegenteilige Effekte auf. Auch in Studie 2, in der Deutsche ohne Migrationserfahrung inkludiert wurden (n=910), um die Rolle außerfamiliärer interkultureller Erfahrungen für Problembewusstsein zu erfassen, waren interkulturelle Kontakterfahrungen direkt positiv mit Empathie und Einstellungen verbunden. Es ergab sich ein positiver Zusammenhang zwischen Empathie und positiven Einstellungen gegenüber Geflüchte-

ten und mit gesteigertem Bewusstsein für deren Informationsbarrieren. Der indirekte Effekt von interkulturellen Kontakterfahrungen auf das Bewusstsein war verstärkend, während der direkte Effekt leicht negativ war.

Ob die Wahrnehmung Deutscher gegenüber Geflüchteten eher ablehnend oder empathisch ist, geht einher mit Unterschieden in Einstellungen und psychischer Belastung. Positive interkulturelle Kontakterfahrungen sind essenziell für den Abbau ablehnender Wahrnehmung und die Stärkung positiver Einstellungen gegenüber Geflüchteten. Doch erst durch eine gemeinsame Aktivierung positiver Kontakterfahrungen mit Empathie und positiven Einstellungen können das Bewusstsein für Informationsbarrieren von Geflüchteten und sich daraus ergebende Hilfsintentionen verstärkt werden.

Extended English Abstract

Refugees are at increased risk for mental illness but receive inadequate information about access to treatment, in part due to negative attitudes from members of the receiving society. However, their awareness of information barriers is critical to eliminating them. Negative attitudes of Germans towards refugees can be explained by dismissive threat perceptions and a lack of empathy. It is unclear to what extent dismissive perceptions towards refugees psychologically burden the perceivers themselves and how empathic perceptions and positive attitudes towards refugees affect the awareness of their information barriers in relation to health care. The scientific investigation of these association as a basis for implications for improving the mental health of those involved was the aim of the present work.

Two models were integrated into a meta-model whose assumptions were examined in two studies. Study 1 focused on Germans' threat perceptions and their psychological distress, while Study 2 examined associations between empathy, positive attitudes toward refugees, and awareness of their information barriers. Both studies looked at selected intergroup antecedents of perception (social identity as a German and intercultural contact experience).

Structural equation modeling was conducted on the basis of a cross-sectional online survey. Study 1, which was based on the total sample (n=1000), revealed positive correlations between the perception of threat by Germans towards refugees and psychological distress, as well as with the strength of social identification as a German. Positive intercultural contact experiences showed opposing effects. In study 2, which included Germans without migration experience (n=910) in order to assess the role of non-familial intercultural experiences for problem awareness, intercultural contact experiences were also directly positively associated with empathy and attitudes. There was a positive correlation between empathy and positive attitudes towards refugees and with awareness of their information barriers. The indirect effect of intercultural contact experiences on awareness was positive, while the direct effect was slightly negative.

Whether the perception of Germans towards refugees is more dismissive or empathetic goes hand in hand with differences in attitudes and psychological stress. Positive intercultural contact experiences are essential for reducing negative perceptions and strengthening positive attitudes towards refugees. But only through a joint activation of positive

contact experiences with empathy and positive attitudes can the awareness of information barriers of refugees and the resulting intentions to help be strengthened.

1. Introduction

In 2022, one in every 74 people worldwide was forced to flee their home due to war, violent conflict or persecution [1-3]. Of the 35.3 million refugees[1] abroad at that time, 2.1 million were living in Germany [2]. Due to its reputation as a politically and economically stable country, Germany hosts the fourth-largest number of refugees in the world in relation to the number of its inhabitants [2, 4]. This situation poses various challenges for refugees as well as for members of the receiving society, including mental health challenges.

The potentially stressful process of acculturation, as well as the experiences refugees have made before and during their journey, lead to a higher prevalence of mental illnesses that require refugees to see a health professional [5-7]. Even though there has been a lot of volunteer engagement with refugees in recent years, access to information on health care options is still partly obstructed due to negative attitudes of Germans as members of the receiving society [8-9]. These Germans may perceive refugees either in a dismissive or in an empathetic way. The underlying processes and possible consequences can be described with the help of two different models. The Integrated Threat Theory (ITT) [10] addresses dismissive perceptions, while the Empathy-Attitude-Action model (EAA) [11] provides the analysis of empathetic perceptions. The integration of both models into a meta-model could offer a clearer picture on relevant factors in the perceptual processes and possible harmful or helpful consequences for Germans as well as for refugees.

Regarding Germans' dismissive perceptions, the ITT [10] states that negative attitudes of Germans towards refugees stem from perceiving refugees as threatening. The resulting dismissive behaviors against refugees impair their mental health and their access to health care [8-9, 12-13]. So far, it is unclear whether Germans' dismissive threat perception towards refugees also adversely affects their own mental health [14].

Empathetic perceptions, on the other hand, have been well studied regarding their promoting effects on positive attitudes and helping intentions of members of the receiving society concerning refugees (EAA model, [11]). It is yet to be known, if similar processes

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[1] According to the definition of the 1951 Refugee convention of the UNHCR, the term "refugee" can be defined as ,,someone who is unable or unwilling to return to their country of origin owing to a well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group, or political opinion."[1]

can enhance awareness for information barriers of refugees as prerequisite for helping intentions [3].

In terms of both perceptual expressions, it is of great interest to find out more about the role of intergroup antecedents such as social identity as German, the frequency of contact and the quality of contact experiences [3, 14-15].

Findings on health-related factors of dismissive and empathic perception processes of Germans in relation to refugees and on the relevance of selected antecedents could offer new approaches to improve mental health for Germans and refugees alike. Although the primary responsibility for ensuring health equity lies with the state and institutions, knowledge about Germans' awareness of the information barriers faced by refugees could help to drive improvements in health equity in the long run. After all, Germans as members of the receiving society regulate this access, may it be through their professional involvement, interactions in everyday life or through their vote in elections [8-9, 12].

1.1. Context of health care access for refugees in Germany

One reason for the lack of knowledge that refugees report regarding their health care options is the complexity of German legislation on health care access [16]. While the statutory health insurance covers treatment costs for citizens in Germany, medical care for refugees who are seeking asylum in Germany is based on the Asylbewerberleistungsgesetz [3, 17-18].

It states that refugees with the legal status of asylum seekers are entitled to treatment for acute illnesses, and the provision of medicines and bandages, as well as other benefits required for the recovery, improvement or alleviation of illnesses or the consequences of illnesses [3]. Dental prostheses are only provided if they cannot be postponed for medical reasons in the individual case. Additional health care benefits are provided for pregnant women and women who have recently given birth [18]. In case of acute need for medical treatment, refugees can use treatment vouchers to visit a professional. These treatment vouchers can be issued by the municipal offices [3]. In some cities and federal states, refugees can also obtain an electronic health card, but here, too, there are differences in terms of the services covered. In emergencies, treatment can also be provided without a treatment certificate. The prerequisite for this is a registered place of residence or accommodation in a local facility [3, 19].

In terms of mental health, refugees have to face other obstacles besides the complex and bureaucratic system, e.g. language barriers, deficiencies in the training of medical staff with regard to cultural sensitivity, or the general lack of capacities, especially in the sector of psychotherapy [20]. The additional work involved in treating refugees as a result of the abovementioned points means that professionals are less willing to accept refugees as patients [20].

A lack of acceptance cannot only be observed among health care professionals but also among lay people [8-9, 12]. Their negative attitudes can aggravate refugees' lack of information about health care further [21].

1.2. Perceptions and Attitudes of Germans towards Refugees

Negative attitudes toward refugees are on the rise across Europe, including Germany [22]. These attitudes could be partially explained by the premises of the Integrated Threat Theory (ITT) [10]. According to ITT, negative attitudes can arise because members of an outgroup are perceived as a threat to the ingroup. An ingroup defines the group with which an individual psychologically identifies, while the outgroup consists of individuals whom the ingroup individual perceives as different and thus not belonging to his or her own group [22].

In the context of Germans and refugees, Germans would perceive themselves as ingroup and define people they identify as refugees as members of the outgroup [4]. Prior research on ITT has been conducted in various intergroup contexts, including interethnic and intercultural contexts,[15, 24-26] but the context of Germans and refugees has not yet been studied [14]. Existing studies on ITT, which could often confirm the general premises, have used different taxonomies of how many different types of perceived threats should be distinguished [14-15, 23]. Rarely have all four originally proposed threat types (Realistic threat, symbolic threat, intergroup anxiety and negative stereotyping) been examined at once [14, 27-28]. However, there is considerable evidence of the effects of perceived threat on negative attitudes toward the outgroup [14]. These attitudes have an impact on social behavior between groups. In the context of Germans and refugees, they could lead to more dismissive behavior by Germans toward refugees, including discrimination, racism, or abuse. Such behavior could in turn affect refugees' trust in

the receiving society [8-13, 29]. In addition, negative attitudes of Germans toward refugees could reduce the willingness of members of this group to show solidarity and support [3, 9, 14, 31].

A counterbalance at the perceptual level that could reinforce positive attitudes of Germans towards refugees could be empathy in the sense of recognizing the emotional support needs of refugees [3]. According to the Empathy Attitude Action (EAA) model,[11] empathy toward an outgroup can improve attitudes and further increase willingness to take supportive action. The premises of the EAA have been confirmed in numerous studies, but most of them focused on children [3-4, 30]. Several studies included contact experiences as intergroup antecedent of perception [15, 22, 30].

As the theoretical approaches and studies have shown so far, the process of attitude formation in intergroup settings is complex. The ITT and the EAA model illuminate two sides of the same coin in the sense of how dismissive or empathetic perceptions can affect attitudes of members of the receiving society towards refugees [10-11]. The formation of these perceptions, in turn, could be based on their contact experiences and their own social identity.

1.3. The Role of Intergroup Antecedents for Perception of Refugees

Examining the impact of intergroup antecedents and perceptions on attitudes toward refugees from the perspective of Germans could provide valuable insights into ways to improve social solidarity in Germany and mental health of Germans and refugees alike. In the past, various antecedents have been associated with perceptual development and thus attitudes toward the outgroup in intergroup interactions. In intergroup intercultural situations, contact experience in particular has been shown to be a relevant factor for empathy toward the outgroup as well as threat perceptions [3, 14-15, 31-32]. While positive intercultural contact experiences have been shown to increase empathic perspective taking,[31, 33] they appear to have a reciprocal effect on dismissive perceptions of threat [31]. With respect to contact experiences and threat perceptions, some studies include contact frequency, i.e., frequency of contact with members of an outgroup, as an antecedent and measure both types of contact or only one of the two [25-26].

In addition to the two facets of contact experience, the ITT and other studies also point to the social identity of ingroup members as an important antecedent to threat perception

[25-26, 34]. In the context of Germans and refugees, social identity as German is of particular interest, as it could have a reinforcing effect on threat perceptions. However, this has not yet been studied in Germany.

1.4. Possible Effects on Mental Health of Germans and Refugees

Refugees in Germany display a prevalence for mental illness,[5] which can be worsened through experiencing dismissive attitudes and behavior from Germans towards them [7]. According to the ITT, negative attitudes are rooted in perceiving refugees as threatening [10]. What remains unclear is to what extent negative perceptions towards refugees psychologically burden the perceivers themselves [14].

Regarding the utilization of health care services in Germany, refugees report a lack of information on their access options [16]. German laypeople could step in temporarily to support refugees with information about how to access health services when institutions and legislators do not make this information readily available [14]. This type of support could counteract barriers and have a positive impact on refugees' health. According to the EAA model, perceiving refugees empathetically could improve attitudes towards them and the readiness to act supportive [11]. However, since Germans have little to no contact with refugees,[3, 32] Germans' awareness of information barriers among refugees as a prerequisite for supportive behavior should be explored as a basis for future research [3, 35]. The associations of Germans' empathetic perceptions with positive attitudes and their awareness of information barriers should be examined.

With respect to Germans' mental health, connections between Germans' dismissive perceptions of refugees as threatening and Germans' psychological distress as an affective consequence of negative attitudes toward refugees should be investigated along with direct and indirect associations of intercultural intergroup antecedents on Germans' perceptions and psychological distress when they think about refugees [10-11].

1.5. Research Questions

The two studies were integrated in a meta-model, which is explained below. The meta-model aimed to capture the role of Germans' dismissive and empathetic perceptions for attitudes toward refugees and for the mental health of all involved. The ITT proposes a three-part process of attitude formation, consisting of intergroup antecedents, perceptions and attitudes [10]. The modified EAA model incorporates a similar structure in terms of

the relation between perceptions and attitudes, adding awareness as final step of the process (differing from the original EAA model, in which helping action is the outcome variable) [11, 36]. Past research on the large impact of intercultural contact experience on empathic awareness suggests that the model should also be extended in terms of this antecedent. Taken together, the meta-model depicts a four-part process starting with intergroup antecedents that are linked to perception. Further, perception should be associated with attitudes, which in turn have an impact on problem awareness.

In Figure 1, the integration of the opposing perceptions, relevant antecedents and attitudes as proposed in ITT and the modified EAA model are visualized. Based on the assumptions of the ITT and prior research, study 1 examined dismissive perceptions of Germans toward refugees and explored both antecedents and implications for Germans' mental health [14]. The box framed by dashes and labeled as study 1 marks the assumed model based on the ITT and our conceptualization with psychological distress as outcome variable.

Based on the modified EAA model and research findings, study 2 investigated Germans' empathic perceptions of refugees, antecedents, and implications for their awareness of problems related to refugees' information barriers to accessing health care [3]. The box framed by dots and labeled as study two contains the assumptions of the modified and extended EAA model with awareness for information barriers as outcome variable.

The arrows are displayed uni-directional based on the theoretical premises and to reduce the complexity of the graphic but should not exclude reciprocal connections. The curved bracket labeled as "Outgroup: refugees" defines the frame of reference of the included variables.
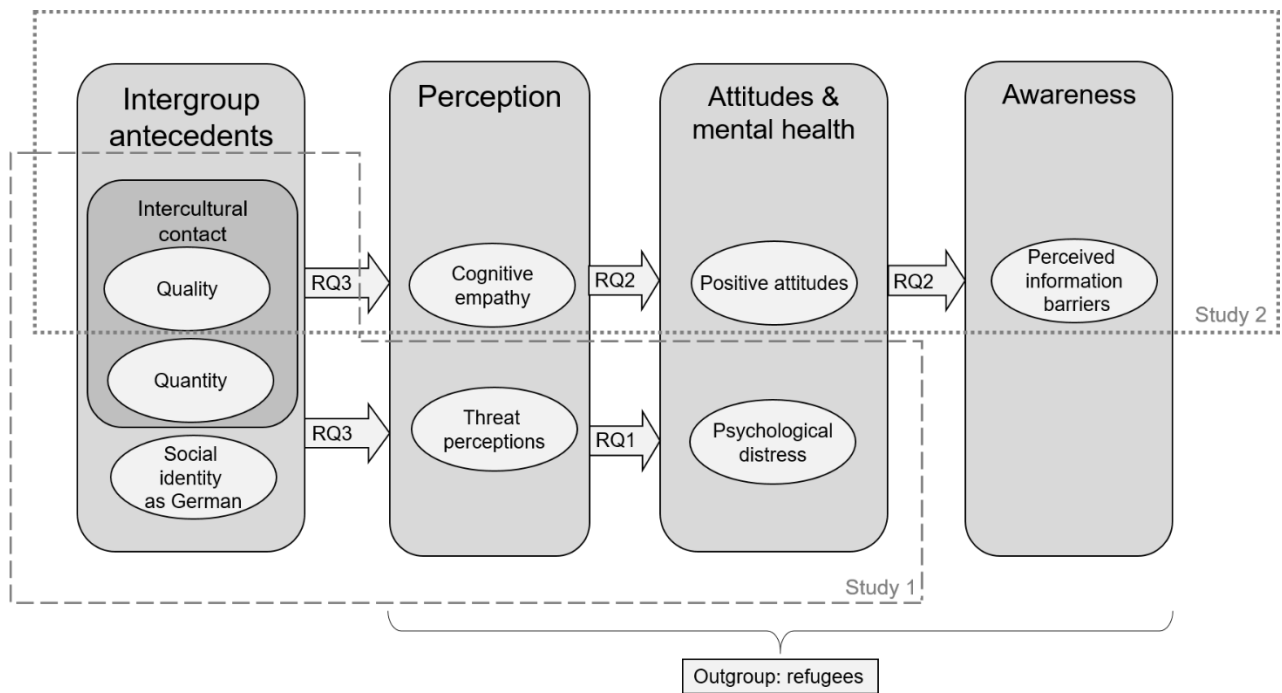
Figure 1: Integrated Model of Germans' Perceptions and Attitudes Towards Refugees (own visualization)

Based on the derived meta-model, the following research questions (RQ) were investigated by means of two studies.

RQ1: What are the associations between Germans' dismissive perceptions of threat and their   psychological distress when thinking about refugees? (Study 1) [14]

RQ2: How are empathetic perceptual processes associated with Germans' awareness of refugees' information barriers regarding health care access? (Study 2) [3]

RQ3: What intergroup antecedents have an impact on Germans' perceptions towards refugees' as an outgroup? (Study 1 and 2) [3, 14]

The relationships between the individual variables examined in the two present studies based on the abovementioned research questions are shown in the figure with labeled (RQ1-3) arrows.

2. Methods

By integrating two models into one meta-model, the aim was to contrast potentially facilitating and hindering processes of perceptions, attitudes, and certain intergroup antecedents for mental health and to be able to formulate implications that can contribute to better mental health for both Germans and refugees. Although the two studies are based on the same data set from a cross-sectional online survey, each study examined different aspects and variables of the meta-model because differing inclusion criteria regarding migration experiences of the participants were necessary. The methodological details are set out in the following [3, 14].

2.1. Procedure

Supported by a survey company, a random sample from 500,000 Germans was drawn [3, 14]. They had previously given consent to being contacted by the company. 2086 potential participants approximately matching the country's population in terms of gender, age, educational level and residency were contacted and invited to be participants in the survey. A link to was sent to the participants to access the survey [3, 14]. Detailed written German instructions contained information on voluntarity and confidentiality of the answers. The survey obtained only anonymized data and was approved by the ethics committee of the Ariel University.The response rate was 48% [3, 14]. Methodological details of the two studies are described in the following.

2.2. Sample and Measures of Study 1

In the first study, self-report measures, validated with German-speaking samples, were used to ask Germans about their differentiated perceptions of threat, their social identity as German, their qualitative and quantitative intercultural contact experiences as well as their psychological distress when thinking about refugees that arrived in Germany [14]. The instruments for both contact variables were phrased to match Germans' contact with culturally differing people in general, as previous studies found Germans to report little to no contact with refugees in particular [32]. All other measures were rephrased to assess the context of Germans and refugees in Germany. The sample included 1000 Germans (M_{age} = 47.47, SD = 15.10) who were all at least 18 years old and reported to have German citizenship [14].

2.3. Sample and Measures of Study 2

In the second study, Germans were asked about their cognitive empathy in the form of recognition for refugees' socio-emotional struggles, their attitudes on refugees' rights, and their awareness of information barriers with regards to refugees' access to health care, and about their meaningful intercultural contact experiences [3]. The frequency of contact experiences was not included as prior studies couldn't find any contextual significance [14, 15]. As in the first study, self-report instruments were used, that had all been validated with German samples. All instruments except for the variable intercultural contact experiences were rephrased to capture the context Germans and refugees. Unlike in the first study, not all Germans with German citizenship were included here, but only those who reported no migration experience of their own and no migration experience of their parents. The reason for this was to find out how members of the receiving society can empathize with refugees and how they perceive their barriers in terms of access to information if they have gained their intercultural experiences mainly outside the family environment. After applying these criteria on the original sample, 910 Participants over 18 years were included in the study (Mage = 48.40, SD = 14.79) [3].

2.4. Instruments and Internal Consistency

The following table displays the variables used in the two studies, and the instruments used to measure them. For all instruments except for intergroup anxiety and psychological distress, participants were given a four-point Likert scale, on which they had to rate the items in terms of their Agreement with a statement (1= "strongly disagree" to 4= "strongly agree") [3]. In case of intergroup anxiety and psychological distress, the adjective-based instruments contained five-point Likert scales given to rate the extent of emotional states they might have experienced when thinking of refugees in Germany (1="none of the time"/"not at all" to 5="all of the time"/"extremely"). Cronbach's alpha, which was calculated with SPSS to assess the internal consistency of the instruments, yielding acceptable to excellent results [37, 38].

For both studies, the covariates gender, age, household income, and level of education were included [3, 14]. Study 1 included country of origin as additional covariate [14].

Table 1: Variables from Both Studies, Assessment Instruments and Their Internal Consistency (own visualization, based on Schubert et al., 2022; 2023)

Variables	Instruments	α
Antecedents		
Social Identity as German	Six-item scale [39]	α = .93
Quantity of intercultural contact	One Item capturing frequency [15]	-
Quality of intercultural contact / Intercultural contact experiences	"Enjoyment of intercultural interactions"-Subscale of Intercultural Sensitivity Scale (ISS)[40]	α = .92/ α = .91
Perceptions		
Symbolic Threat & Realistic Threat	MITTE-Studies [41], ALLBUS studies [42], group related misanthropy scale [43]	α = .91
Intergroup anxiety	Adjective-based scale with emotion terms [44]	α = .82
Negative Stereotyping	Ambivalence towards men inventory [45-46]	α = .92
Cognitive empathy	Berlin Social Support Scale (BSSS) [47]	α = .89
Attitudes & mental health		
Positive attitudes on refugees' rights	Eurobarometer 53 [48]	α = .78
Psychological Distress	K6 Scale [32]	α = .93
Awareness		
Awareness for refugees' information barriers	Scale on information barriers [16]	α = .92

2.5. Statistical Analyses

For statistical analyses, the program Mplus 8.0 was used. We applied the Satorra-Bentler method for model estimation and the fit indices by Hu and Bentler for model fit estimation [49, 50]. For evaluation of the measurement model and determination of latent correlations in the respective studies, multi-factor confirmatory factor analyzes (CFAs) had been conducted. In case of study 1, the CFA was followed by structural equation modeling

(SEM) to determine latent correlations and test differences of path strengths by applying a two-stage method [51]. The resulting model was then tested for indirect effects along the paths of the variables using the model indirect command in the program MPlus [49]. For study 2, CFA was run and afterwards three different structural equation modellings (SEMs) were conducted. Their fits were compared against each other to identify the best fitting model, applying chi-square-difference test [52]. The final test contained a model indirect command too in order to reveal indirect effects [49].

3. Results

In the following, the main results of the statistical analyses will be presented separately for each study.

3.1. Results of Study 1

In study 1, initial CFA revealed that the variables symbolic threat perception and realistic threat perception were strongly correlated (β=0.94, p< .001). The subscales therefore had to be merged and the repeated CFA confirmed a good model fit (see table 2). Germans' differentiated perceptions of threat and associations with intergroup antecedents as well as with psychological distress when thinking about refugees in Germany were statistically analyzed.

Table 2: Fit Indices of Repeated Confirmatory Factor Analyses and Structural Equation Models from Study 1 (own visualization, based on Schubert et al., 2022)

Model	df	χ^2	CFI/ TLI	RMSEA	SRMR
CFA	467	1579.16**	.942/ .931	.049	.036
SEM	414	1397.61**	.946/.936	.049	.037

Note: CFA= Multifactorial confirmatory analysis; SEM = structural equation model; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; ** p < .01

The study revealed positive relations between social identity as German and all four types of threat perception. The association between psychological distress and three of the four types, namely intergroup anxiety and symbolic- and realistic threat were also positive while negative stereotyping did not yield any significant association with the outcome variable. Further, the quality of intercultural contact experiences revealed a significant negative relation with all threat perception types, while the quantity of contact yielded slightly positive results (see Figure 2; Table A in Appendix) [14].
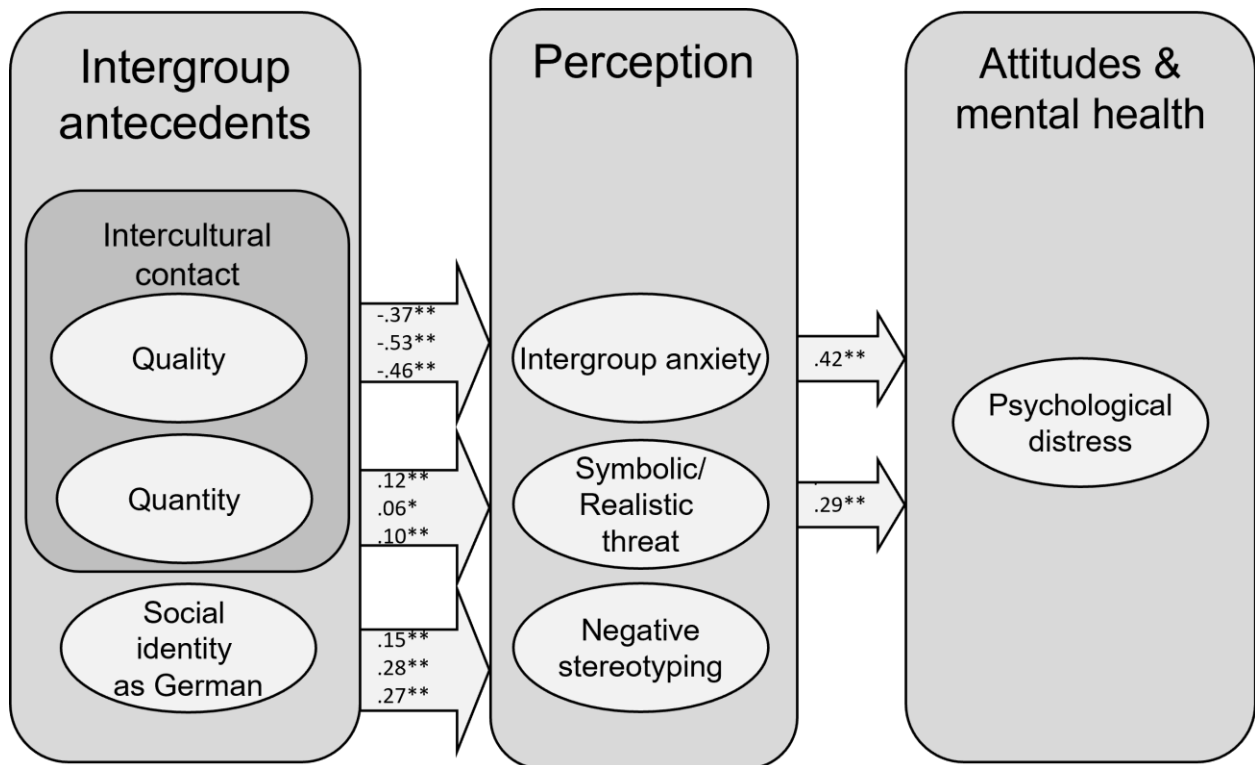
Note: The three regression coefficients in the first row of arrows indicate the strengths of relations between the respective antecedent and the three threat perception variables, in order from top to bottom. ** p < .01, * p < .05

Figure 2: Regression Coefficients from Statistical Analyses of Study 1 (modified according to Schubert et al., 2022)

Indirect effects could be identified between each of the intergroup antecedents and psychological distress, mediated by symbolic and realistic threat, as well as intergroup anxiety The indirect effects between the quality of intercultural contact and psychological distress via threat perceptions were negative (-0.15 ≤ b ≥ -0.17, all p < .001) while the indirect relations including the quantity of contact or social identity as German were positive (0.05 ≤ b ≥ 0.09, p = .003 for quantity of contact, p < .001 for all others) [14].

In terms of covariates, age and the level of education were negatively associated with psychological distress, while the remaining covariates did not reveal significant effects on the outcome variable.[2]

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[2] For remaining associations, means and standard deviation of covariates, see Table A in Appendix.

3.2. Results of Study 2

Study 2 statistically analyzed Germans' cognitive empathy towards refugees and its relationships with previously experienced (qualitative) intercultural contact experiences, positive attitudes towards refugees' rights, and Germans' awareness of refugees' information barriers regarding health care. After the initial CFA, which yielded good results, three different SEMS (SEM models 1-3) were conducted, adding one direct pathway in each model, linking positive intercultural contact experiences to another variable. The χ2-Difference-Test revealed that the least restricted model displayed the best fit and it was therefore chosen to be the final model (see table 4).

Table 3: Fit Indices of Confirmatory Factor Analysis and Structural Equation Models from Study 2 (modified according to Schubert et al., 2023)

Model	df	χ^2	CFI/ TLI	RMSEA	SRMR	Scaled χ^2	Δ df
CFA	95	196.014**	0.986/0.980	0.034	0.023		
SEM model 1	97	260.676**	0.977/0.969	0.043	0.036		
SEM model 2	96	205.159**	0.985/0.979	0.035	0.028	43,79**	1
SEM model 3	95	196.363**	0.986/0.981	0.034	0.024	9,70**	1

Note: CFA= Multifactorial confirmatory analysis; SEM = structural equation model; CFI = comparative fit index; TLI = Tucker-Lewis Index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual; ** p < .01

It shows a positive association between the contact variable and both Germans' cognitive empathy towards refugees as well as their positive attitudes on refugees' rights. In contrast, the direct effect between Germans' intercultural contact experiences and the awareness of information barriers of refugees' was slightly negative. Cognitive empathy and attitudes towards refugees as well as the awareness of refugees' information barriers were all positively associated with each other in direct paths (see Figure 3; Table B in

Appendix). Regarding indirect effects, prior intercultural contact experiences showed in-direct positive relations with awareness of refugees' information barriers via all other var-iables (0.14 ≤ b ≥ 0.22, all p < .001).

In terms of covariates, the study found age (ß = − 0.17, p < .001) and gender (ß = − 0.09, p = .002) to be negatively associated with awareness of refugees' information barriers, implying that older participants and those identifying as male perceived fewer information barriers than younger participants and those identifying as female [3].[3]
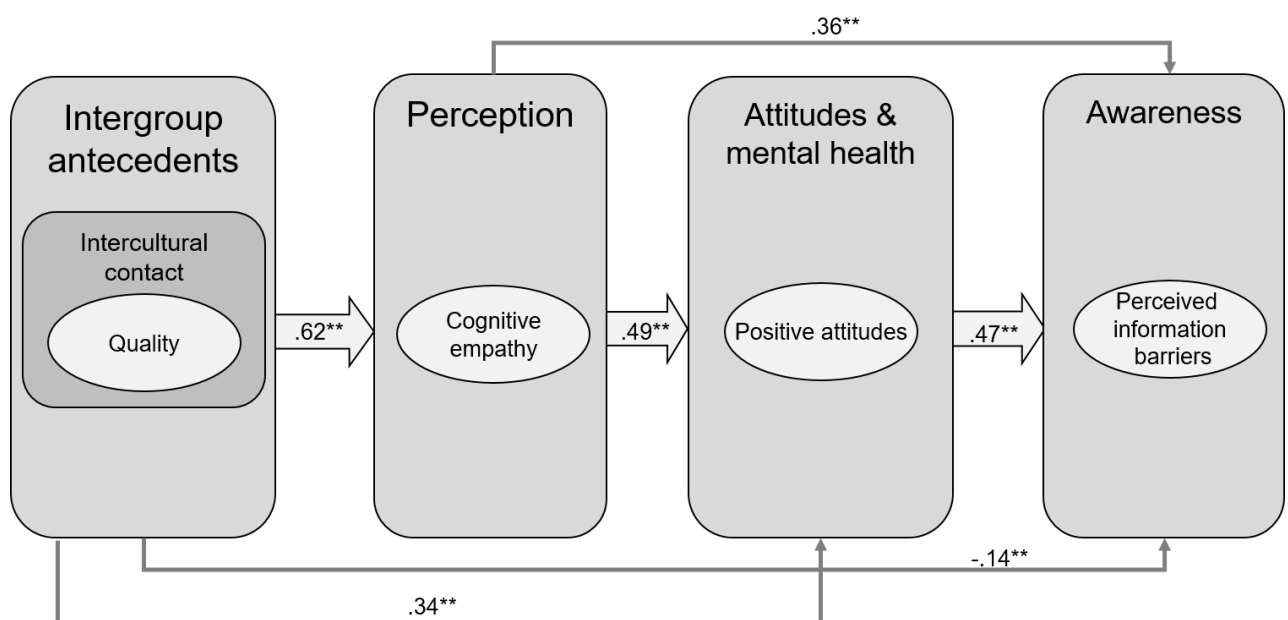
Note: ** p < .01

Figure 3: Regression Coefficients from Statistical Analyses of Study 2 (modified according to Schubert et al., 2023)

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[3] For remaining associations, means and standard deviation of covariates, see Table B in Appendix.

4. Discussion

The present research project's aim was to explore the association of dismissive and empathetic perceptive processes by Germans towards refugees with the mental health of all involved. Dismissive perceptions of threat and empathic perceptions of Germans when thinking about refugees in Germany were investigated, as well as their association with positive attitudes towards refugees' rights on the one hand and psychological distress of Germans on the other hand [3, 14]. Furthermore, associations with intergroup antecedents and with awareness of information barriers of refugees as a possible consequence of positive perceptions and attitudes towards refugees were investigated [3, 14].

In the following, the results of the statistical analyses are summarized, interpreted, and contextualized with reference to the theoretical models and previous research. The particular strengths of the research project arising from the research design and findings are considered, as are weaknesses of a methodological nature. Based on the interpretation of the research findings, implications are presented that can not only provide impulses at the research level but also have practical utility with regard to promoting the mental health of Germans and refugees. A reflection on the role of the opposing perceptions and attitudes of Germans towards refugees for good mental health of the people involved concludes the research project.

4.1   Short Summary of the Results

The results of the two studies can give answers to the research questions posed in the introduction. Regarding research question 1 (RQ1), the outcomes imply that the perception of refugees as a threat is associated with increased psychological distress that Germans experience as affective facet of negative attitudes [14].

Answering research question 2 (RQ2), cognitive empathy in the form of perceiving refugees' socio-emotional support needs is associated positively with Germans' attitudes towards refugees and on their rights. Further, positive attitudes of Germans towards refugees' rights are positively connected with Germans' awareness of refugees' information barriers, revealing another chance to improve mental health, in this case refugees' mental health. The positive association of cognitive empathy on awareness of information barriers could be found both directly and indirectly via positive association with attitudes towards refugees [3].

Investigating the effects of Germans' intergroup antecedents on their perceptions (RQ3), study 1 could find significant associations between social identity as German and threat perceptions when thinking about refugees. While the analyzes showed only minor positive connections of frequency of intercultural contact with threat perception, positive and meaningful intercultural contact experiences were found to have strong negative associations with threat perceptions [14]. Study 2 revealed strong positive connections with cognitive empathy of Germans towards refugees [3].

In addition, the studies found intercultural contact experience to be of great importance because of its strong positive direct respective indirect associations with positive attitudes and awareness for information barriers of refugees as well as the negative association with psychological distress [3, 14]. Social Identity as German and the frequency of contact were positively associated with psychological distress [14].

4.2   Interpretation of the Results

The results of the two studies underline the relevance of attitudes to the mental health of Germans and refugees alike. Although this project was only able to look at two sub-aspects regarding the importance of positive intergroup relationships for mental health, these aspects had not been looked at before.

Based on the assumptions of the ITT and the modified EAA model, it can be assumed that the perception of a threat to one's own physical or monetary well-being (realistic threat), to one's own moral concepts, norms and values (symbolic threat) as well as the perception of threat and fear of an expected intergroup interaction has a negative effect on one's own health, as does a strong identification with one's own nation [10, 14]. The latter makes the individual more prone to perceiving a threat to the nation (e.g. symbolic threat to norms, values and morals that are associated with the nation) which raises psychological distress when thinking of refugees [10, 14, 25]. The slight positive association of frequency of intercultural contact with psychological distress could stem from the generally rather low frequencies of contact. When contacts between Germans and people of other cultures seldom occur, insecurities might arise and therefore increase threat perceptions and consequently psychological distress [24, 35].

Positive intercultural contact experiences showed promising effects on reducing threat perceptions in the first study [14]. The positive impact could be supported in the second study with regard to the positive effects on perceptions and attitudes towards refugees

[3]. Another finding is the initially contradictory negative direct effect of intercultural contact experiences on Germans' perception of information barriers for refugees [3]. Because indirectly, i.e. through an increase in cognitive empathy and positive attitudes, the contact experiences have a clearly positive effect on the perception of the Germans. The seemingly necessary connection with empathy and positive attitudes and prior research results suggest that contact experiences alone are not enough, but should rather be experienced in a context in which they can also be classified, precisely through a perception of the socio-emotional needs of refugees and positive attitudes towards them and their rights [3].

4.3   Embedding of the Results in the Current State of Research

The crucial role of positive intercultural contact experiences in the two studies corroborate the existing research on the role of contact [53]. Further, the study results are consistent with the assumptions of ITT and the modified EAA model [3, 8-9, 14, 27-28]. With the focus on intergroup perceptions and attitudes towards refugees from the perspective of members of the receiving society, the results could expand previous research findings. They open up new perspectives on the mental health of those involved [15, 31].

Previous research has primarily looked at the consequences of negative attitudes and behavior stemming from high threat perceptions for the mental health of refugees as target of that behavior [14, 34]. The negative effects on mental health of the ones who identify highly with their own nationality and who perceive refugees as threatening are a new finding. As far as refugees' access to health care is concerned, research has mainly dealt with the fact that negative attitudes of members of the receiving society are an obstacle to refugees' access and that helpfulness towards refugees is declining [3, 8-9, 12-13, 30]. Study 2 could add a new aspect as it focused on problem awareness as a prerequisite and could therefore highlight processes that occur even though actual contact between ingroup and outgroup members may have been rare or non-existent [3, 35].

Moreover, most of the research that has been done on the EAA model in the context of migrants or refugees focused on children or adolescent participants [3-4, 30]. By focusing on adult participants, study 2 could show that the premises of the model are also applicable to adults.

4.4   Strengths and Limitations of the Research

The present research project has several strengths. First, the research focus on specific mental health outcomes for members of the receiving society and refugees in the context of intergroup perceptions and attitudes from the perspective of members of the receiving society has not been explored before. The inclusion of all four types of threat perceptions, as suggested by ITT in Study 1,[10, 14] as well as the inclusion of intergroup antecedents, particularly intercultural contact experiences as important antecedents, yielded strongly significant associations in both studies [3, 14]. By focusing on adult participants, a new contribution to empathy research was made [3-4, 30]. In addition, Study 2 was able to shed light on perceptual processes in the context of health access among Germans and refugees [3]. The new findings are valuable in terms of future research approaches and practical interventions.

However, some limitations need to be pointed out. Regarding our study design, we conducted a cross-sectional survey with self-reports. Because of the cross-sectional design, no assumptions about causality can be made [3, 14]. Our interpretation of the results is based on the theoretical background and previous research. However, reciprocal effects cannot be excluded. Another limiting factor is the use of self-report, as the data risk containing socially desirable fluctuations or otherwise untrue responses. However, the focus of the present study was on Germans' self-perceptions, and assessments of mental health are subjective in nature, so this type of measurement was chosen as the best option [3, 14]. To ensure validity, only established instruments in German were included in the questionnaire. The response rate of our questionnaire was only 48%, which does not allow for generalization. However, the size of our sample is appropriate and based on an approximation of a representative German sample [3, 14].

Regarding our study variables, the analyses revealed high inter-correlations between realistic and symbolic threat, meaning that the variables could not be distinguished by the participants [14]. Consequently, the effects could not be distinguished in subsequent analyses. Nevertheless, the general processes surrounding threat perceptions could be examined.

The lack of contact between Germans and refugees in their daily lives had some consequences for the inclusion of variables in the study [3, 14, 32]. We could only measure antecedents related to intercultural contact in general. In addition, we did not measure prosocial action (as in the original EAA model),[3, 11] but rather problem awareness as a

prerequisite,[36] since prosocial action requires actual contact with members of the group in question.

4.5   Implications for Practice and Future Research

The knowledge gained in these studies may offer approaches for interventions that could improve perceptions, attitudes, and ultimately the mental health of all involved. To overcome the obstacle that dismissive perceptions pose for the mental health of Germans, the goal should be to reduce threat perceptions and foster positive attitudes. A promising starting point is the promotion of intercultural contact experiences.

Fostering positive contact experiences between Germans and refugees, e.g. by giving refugees easy access to organized leisure activities or clubs could lead to Germans assessing refugees more differentiated and thereby perceiving less threat while experiencing cognitive empathy and developing more positive attitudes towards refugees. The reinforcing effect of social identity with one's own nationality on the dismissive perception of threat towards refugees and, thereby on psychological distress could be addressed by using the buffering effect of intercultural contact experiences as well. Eventually, it could also shift the Germans' image of who is a German and who is not, i.e. of the ingroup and the outgroup, in favor of refugees and the reinforcing effect of social identity as German on dismissive perceptions could possibly be reduced. Longitudinal research on this matter would be important to gather empirical evidence.

In addition to fostering a decrease in dismissive perceptions, it is crucial to strive for an increase of empathetic perceptions among Germans concerning refugees' socio-emotional struggles. By educating Germans about the legal situation pertaining to refugees' access to health care and the challenges they encounter, Germans can understand the emotional support needs of refugees better. Consequently, they may be more inclined to acknowledge the fundamental rights of refugees, such as residency and healthcare. National television broadcasters or moderated social media campaigns could support the educational process by disseminating facts about refugees' healthcare access and the difficulties they face, reaching a wider audience [3, 9, 54]. Fostering cognitive empathy and positive emotions in these ways could lead to more awareness of refugees' information barriers regarding health care and trigger subsequent helping intentions i.e. in the form of providing refugees with information on their rights or on where to go. However, it is the responsibility of the government and the institutions concerned to make information

on the rights of refugees and on health care options easily accessible. Laypeople can be a short-term support in this regard or offer emotional support, but the responsibility should in no case be shifted to them. Future research projects should be dedicated to identifying the structural and legal barriers that hinder the flow of information to refugees. The results should then be used as a basis for practical measures to remove these barriers [3].

It would also be desirable for future research to compare the processes examined in the present study with a German sample that reported more contact experiences with refugees. In this case, the variable of helping intentions could also be included as an outcome variable, which would certainly be very exciting.

5. Conclusion

"Hatred corrodes the vessel it's carried in"[55]. This quote captures the plight Germans can find themselves in when they perceive refugees as threatening and harbor negative attitudes towards them, especially if they strongly identify with being German. This dismissive perception leads to an increase of psychological distress, while positive intercultural experiences can offer alleviation for Germans' health in the form of reduced psychological distress and improved mental health.

Negative attitudes among members of the receiving society do not only harm their own mental health, they create significant obstacles for refugees' access to vital information about health services. Conversely, cognitive empathy and positive attitudes towards refugees and their rights can foster Germans' awareness for their access barriers. With more awareness of the problem, the chances for supportive behavior and better healthcare access for refugees improve and opportunities for the receiving society to socially integrate healthier refugees rise.

Intercultural contact experiences, in combination with cognitive empathy and positive attitudes, play a reinforcing role in raising awareness among Germans. Taken together, the crucial role of intercultural contact experiences for positive, healthier developments in perceptual and attitudinal processes of Germans cannot be denied and should be considered when developing practical approaches to alleviate threat perceptions, promote cognitive empathy, foster positive attitudes, and address the information barriers that refugees face when accessing healthcare. Engaging in further research regarding these processes can aid to find ways to facilitate the development of a cohesive and healthier German society.

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Appendices with Tables

Table A: Mean values of covariates and latent/ manifest correlations of variables (own visualization, based on Schubert et al., 2022)

Covariates	M	SD	1	2	3	4	5	6	7
Gender	1.51	0.25	n.s.	-0.08**	n.s.	0.07**	n.s.	0.18**	n.s.
Age	47.49	227.16	0.02**	-0.15**	0.12**	n.s.	n.s.	n.s.	-0.15**
Education	3.49	1.04	-0.08**	0.12**	0.23**	n.s.	-0.07*	n.s.	-0.06*
Economic status (/10000)	0.62	4.29	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
Variables	**M**	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**
1.	3.11	.90	1	−0.03	−0.14**	0.36**	.35**	0.19**	0.11**
2.	2.59	.95	n.s.	1	0.29**	−0.11**	−.06	−0.01	−0.02
3.	2.95	.89	−0.14**	0.29**	1	−0.57**	−.48**	−0.36**	−0.39**
4.	2.07	1.05	0.28**	0.06*	−0.53**	1	.82**	0.66**	0.58**
5.	2.41	1.02	0.27**	0.10**	−0.46**	0.71**	1	0.60**	0.49**
6.	2.29	.99	0.15**	0.12**	−0.37**	0.57**	.50**	1	0.62**
7.	2.05	1.12	n.s.	n.s.	n.s.	0.29**	n.s.	0.41**	1

Note: N = 1000. *$p < .05$, **$p < .01$; Regarding covariates and variables: 1= Social Identity as German; 2=Quantity of intercultural contact; 3=Quality of intercultural contact; 4= Symbolic and realistic threat; 5= Negative stereotyping; 6= Intergroup Anxiety; 7= Psychological Distress; Regarding variables: Numbers above the diagonal consisting of ones depict latent correlations, numbers in and below the diagonal depict manifest correlations; n.s.= not significant

Table B: Mean values of covariates and latent/ manifest correlations of variables (own visualization, based on Schubert et al., 2023)

Covariates	M	SD	1.	2.	3.	4.
Gender	1.51	0.25	n.s.	n.s.	n.s.	-0.09**
Age	48.39	218.05	0.12**	0.09**	n.s.	-0.17**
Education	3.46	1.01	0.24**	0.07*	0.05*	n.s.
Economic status (/10000)	0.60	19.39	n.s.	n.s.	n.s.	n.s.
Variables	**M**	**SD**	**1.**	**2**	**3**	**4**
1.			1	0.64**	0.66**	0.39**
2.			0.62**	1	0.72**	0.58**
3.			0.34**	0.49**	1	0.62**
4.			-0.14**	0.36**	0.47**	1

Note: N = 910. *p < .05 **p < .01; Regarding covariates and variables: 1= Positive intercultural contact; 2= Cognitive Empathy; 3= Positive attitudes on refugees' rights; 4= Awareness for refugees' information barriers; Regarding variables: Numbers above the diagonal consisting of ones depict latent correlations, numbers in and below the diagonal depict manifest correlations; n.s.= not significant.

Statutory Declaration (Eidesstattliche Versicherung)

„Ich, Saskia Judith Schubert, versichere an Eides statt durch meine eigenhändige Unterschrift, dass ich die vorgelegte Dissertation mit dem Thema: „German attitudes towards refugees: Associations between dismissive or empathetic perceptive processes and mental health" [Deutsch: „Einstellungen von Deutschen gegenüber Geflüchteten: Zusammenhänge zwischen ablehnenden oder empathischen Wahrnehmungsprozessen und der psychischen Gesundheit"] selbstständig und ohne nicht offengelegte Hilfe Dritter verfasst und keine anderen als die angegebenen Quellen und Hilfsmittel genutzt habe.

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Ich versichere ferner, dass ich die in Zusammenarbeit mit anderen Personen generierten Daten, Datenauswertungen und Schlussfolgerungen korrekt gekennzeichnet und meinen eigenen Beitrag sowie die Beiträge anderer Personen korrekt kenntlich gemacht habe (siehe Author's Contribution- Anteilserklärung). Texte oder Textteile, die gemeinsam mit anderen erstellt oder verwendet wurden, habe ich korrekt kenntlich gemacht.

Meine Anteile an etwaigen Publikationen zu dieser Dissertation entsprechen denen, die in der untenstehenden gemeinsamen Erklärung mit dem/der Erstbetreuer/in, angegeben sind. Für sämtliche im Rahmen der Dissertation entstandenen Publikationen wurden die Richtlinien des ICMJE (International Committee of Medical Journal Editors; www.icmje.og) zur Autorenschaft eingehalten. Ich erkläre ferner, dass ich mich zur Einhaltung der Satzung der Charité – Universitätsmedizin Berlin zur Sicherung Guter Wissenschaftlicher Praxis verpflichte.

Weiterhin versichere ich, dass ich diese Dissertation weder in gleicher noch in ähnlicher Form bereits an einer anderen Fakultät eingereicht habe.

Die Bedeutung dieser eidesstattlichen Versicherung und die strafrechtlichen Folgen einer unwahren eidesstattlichen Versicherung (§§156, 161 des Strafgesetzbuches) sind mir bekannt und bewusst."

Datum   Unterschrift

Author's Contribution (Anteilserklärung)

Die Forschungsdaten der Studien 1 und 2 stammen aus dem in Kapitel 2 erläuterten Untersuchung. Saskia Judith Schuberts Tätigkeit als Wissenschaftliche Mitarbeiterin an der Hochschule für Wirtschaft und Recht Berlin bei Herrn Prof. Dr. Tobias Ringeisen begann nach dem Erhebungszeitraum der Daten, weshalb sie nicht an der Erhebung beteiligt war. Die Konzeptualisierung der Datenerhebung für Studie 1 und Studie 2 erfolgte durch Prof. Dr. Tobias Ringeisen. Im Folgenden wird die Eigenleistung bei der Auswertung der Forschungsdaten sowie der Erstellung der zwei Publikationen detailliert dargestellt.

Saskia Judith Schubert hatte folgenden Anteil an den folgenden Publikationen:

Publikation 1: [Schubert, S., Mahat-Shamir, M., Hamama-Raz, Y., Ringeisen, T.], [Perceiving refugees as threats may backfire on one's health: Relations with intercultural antecedents and psychological distress among Germans.], [Current Psychology], [2022]

Die Fragestellung sowie deren theoretische Herleitung und Einbettung wurden von Saskia Judith Schubert als Erstautorin in Absprache mit Prof. Dr. Tobias Ringeisen entwickelt. Die eigenständige Aufarbeitung der Daten, die eigenverantwortliche Durchführung der statistischen Analysen und die Erstellung und Dokumentation der für Mplus benötigten Syntaxerfolge durch Saskia Judith Schubert. Sie war weiterhin hauptverantwortlich für die Strukturierung des Manuskriptes, die Leitung, Koordination und Durchführung des Schreibprozesses. Die Visualisierungen im Manuskript in Form von Grafiken und Tabellen- sowie die Ergebnisdarstellung erfolgte eigenverantwortlich durch Saskia Judith Schubert. Aus ihren eigenen statistischen Analysen entstanden Tabelle 1-3 und Abbildungen 1 und 2 der Publikation sowie die Tables 1-2, Table A und Figures 1-2 im Manteltext.

Prof. Dr. Tobias Ringeisen hat als Koautor am Erstentwurf des Manuskripts und dessen Überarbeitung mitgeschrieben sowie beratend Anregungen zur inhaltlich-sprachlichen Gestaltung und zur Revision gegeben. Das Feedback von Prof. Dr. Tobias Ringeisen hat Saskia Judith Schubert als Erstautorin in das Manuskript eingearbeitet. Prof. Dr. Tobias Ringeisen hat den Prozess der Datenaufbereitung, -auswertung und -interpretation sowie der Manuskripterstellung und -überarbeitung beratend begleitet und notwendige Res-

sourcen bereitgestellt. Die Editierung und einen übergreifenden Formalcheck des Manuskripts vor Beginn des Einreichungsprozesses hat Saskia Judith Schubert eigenständig vorgenommen. Dr. Michal Mahat-Shamir und Prof. Dr. Yaira Hamama-Raz haben als Koautorinnen beratend Anregungen zur inhaltlichen Gestaltung des Erstentwurfes gegeben und dem finalen Manuskriptentwurf zugestimmt. Prof. Dr. Tobias Ringeisen stimmte der finalen Manuskriptversion ebenfalls zu. Die Journal-Auswahl, die Einreichung sowie die Kommunikation mit dem Journal wurde koordiniert und durchgeführt von Saskia Judith Schubert. Die zur Veröffentlichung notwendigen Überarbeitungen des Manuskriptes im Revisionsprozess wurden nach Rücksprache mit Prof. Dr. Tobias Ringeisen hauptverantwortlich durchgeführt von Saskia Judith Schubert.

Publikation 2: [Schubert, S., Kluge, U., Klapprott, F., Ringeisen, T.], [Germans' awareness of refugees' information barriers regarding health care access: a cross-sectional study.], [BMC Health Services Research], [2023]

Die Fragestellung sowie deren theoretische Herleitung und Einbettung wurden von Saskia Judith Schubert als Erstautorin in Absprache mit Prof. Dr. Tobias Ringeisen entwickelt. Die eigenständige Aufarbeitung der Daten, die eigenverantwortliche Durchführung der statistischen Analysen und die Erstellung und Dokumentation der für Mplus benötigten Syntaxerfolge durch Saskia Judith Schubert. Sie war weiterhin hauptverantwortlich für die Strukturierung des Manuskriptes, die Leitung, Koordination und Durchführung des Schreibprozesses. Die Visualisierungen im Manuskript in Form von Grafiken und Tabellen- sowie die Ergebnisdarstellung erfolgte eigenverantwortlich durch Saskia Judith Schubert. Aus ihren eigenen statistischen Analysen entstanden Tabelle 1-2 und Abbildungen 1 und 2 der Publikation sowie die Tables 1, 3, Table B und Figures 1 und 3 im Manteltext.
Prof. Dr. Tobias Ringeisen hat als Koautor am Erstentwurf des Manuskripts und dessen Überarbeitung mitgeschrieben sowie beratend Anregungen zur inhaltlich-sprachlichen Gestaltung und zur Revision gegeben. Das Feedback von Prof. Dr. Tobias Ringeisen hat Saskia Judith Schubert als Erstautorin in das Manuskript eingearbeitet. Prof. Dr. Tobias Ringeisen hat den Prozess der Datenaufbereitung, -auswertung und -interpretation sowie der Manuskripterstellung und -überarbeitung beratend begleitet und notwendige Ressourcen bereitgestellt. Die Editierung und einen übergreifenden Formalcheck des Manuskripts vor Beginn des Einreichungsprozesses hat Saskia Judith Schubert eigenständig

vorgenommen. Prof. Dr. Ulrike Kluge und Felix Klapprott haben als Koautor*innen beratend Anregungen zur inhaltlich-sprachlichen Gestaltung des Erstentwurfes sowie im Revisionsprozess gegeben und haben dem finalen Manuskriptentwurf zugestimmt. Prof. Dr. Tobias Ringeisen stimmte der finalen Manuskriptversion ebenfalls zu. Die Journal-Auswahl, die Einreichung sowie die Kommunikation mit dem Journal wurde koordiniert und durchgeführt von Saskia Judith Schubert, wobei Prof. Dr. Ulrike Kluge beratend tätig war. Die zur Veröffentlichung notwendigen Überarbeitungen des Manuskriptes im Revisionsprozess wurden nach Rücksprache mit Prof. Dr. Tobias Ringeisen und Prof. Dr. Ulrike Kluge hauptverantwortlich durchgeführt von Saskia Judith Schubert.

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Study 1

Perceiving Refugees as Threats may Backfire on One's Health: Relations With Intercultural Antecedents and Psychological distress Among Germans

Saskia Schubert, Michal Mahat-Shamir, Yaira Hamama-Raz, & Tobias Ringeisen

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Perceiving refugees as threats may backfire on one's health: Relations with intercultural antecedents and psychological distress among Germans

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Abstract

In the recent years, research on the conditions, under which members of the host countries such as Germany perceive refugees as threatening and respond with negative attitudes, has increased. However, little attention has been given to the implications that subjective perceptions of threat among the host community may have for their own psychological health. Using integrated threat theory, the current study examined the relationships between perceived threats, person-centered antecedents in intercultural settings, and psychological distress among Germans, who reflected on incoming refugees. Using a survey company, a sample (N = 1000) was recruited, which matched the German census regarding central demographics. Participants completed a cross-sectional online survey with validated self-report measures. Assessments covered four perceived threat types (intergroup anxiety, symbolic and realistic threat, negative stereotypes), person-related antecedents (social identity as German, quantity and quality of prior intercultural contact), and psychological distress. Applying structural equation modeling, we found that high social identification as German was related to greater perceptions of symbolic/ realistic threat, stronger negative stereotypes and to more intergroup anxiety. Vice versa, high quality of prior intercultural contact experiences was associated with a decrease of all threat types. The quantity of prior intercultural contact showed almost no relations to perceived threats. In terms of indirect effects, greater quality of contact predicted less distress, and greater identity as German predicted more distress, both via symbolic/realistic threat and intergroup anxiety. Taken together, perceiving refugees as a threatening outgroup may signify a self-harming risk, while high quality of intercultural relations may indirectly enhance health.

Since 2015, the European Union has accommodated about 3.5 million refugees. Roughly a third of them have applied for asylum in Germany (Eurostat, 2019). Though refugees are in particular need of social integration, many experience a lack of receptivity by members of the host country (Blomstedt et al., 2007). Although surveys mostly identified welcoming attitudes towards refugees shortly after their arrival, research has documented that such perception has been changing, with considerable proportions of the host countries' populations expressing negative attitudes toward refugees more recently (e.g., Campbell, 2017). In light of these findings, studies have started to examine the antecedents of attitudes and their implications for emotional responses towards refugees in different European countries. The relations between attitudes towards groups and related emotions may be studied with reference to the Integrated Threat Theory (ITT; Stephan et al., 1999; Stephan & Stephan, 2000). ITT proposes different antecedents, which should account for the severity of perceptions of threat. These threats, in turn, should predict negative attitudes, negative emotional reactions and rejecting behavior of the ingroup towards members of an out- group. With realistic threat, symbolic threat, intergroup anxiety, and negative stereotyping, ITT differentiates four types of threat perceptions that can be experienced when being confronted with members of an outgroup. *Realistic threat* refers to the perception that physical and economic

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well-being of the ingroup is endangered through the out-group, while *symbolic threat* emerges through perceived differences in values, beliefs, and norms. *Intergroup anxiety* describes the fear people experience when interacting with outgroup members. *Negative stereotyping* is defined as negative expectations concerning the behavior of out- group members.

Multiple studies provided evidence that these threats predict attitudes towards the respective outgroups (e.g., Stephan et al., 2000, 2009). However, existing research focused mainly on realistic and symbolic threat, and to a lesser extent on intergroup anxiety and negative stereotyping (e.g., Velasco González et al., 2008; Wike et al., 2016). So far, studies rarely analyzed all four threat types simultaneously (e.g., Stephan et al., 1999, 2000a). In terms of outcomes, most of the available studies focused on attitudes (e.g. Velasco González et al., 2008; Yitmen & Verkuyten, 2018; Stephan & Stephan, 2000). Yet, little attention has been given to the implications that subjective perceptions of threat may have for the mental health of the attitude holders. Psychological distress constitutes a common affec- tive manifestation of impaired mental health, which may arise if members of the ingroup are confronted with an outgroup that is perceived as threatening (e.g., Goodwin et al., 2016; Ketturat et al., 2016). Building on these findings, it thus seems promising to examine, whether members of the host nation suffer from heightening stress responses, if they perceive refugees that had arrived in their country as threatening. Considering their potential for subsequent interventions, it is also worth exploring, which antecedents may reduce or enhance threat perceptions and may thus indirectly modulate the stress response towards refugees.

ITT acknowledges six different antecedents of heightened threat perceptions: intensified ingroup identification, little and/or negative contact experiences, emerging intergroup conflict, high status inequalities, high relevance, and little knowledge about the other group (Stephan et al., 2000a, b; Stephan & Stephan, 2000). *Ingroup identification* describes the intensity with which members of a group feel a sense of belonging to that certain group, incorporating its morals, values and characteristics. *Contact experiences* refer to the quantity as well as the quality of interactions between the ingroup and the outgroup. If both groups compete for resources and/or have opposite goals, group interaction may become hostile and take on the form of *intergroup conflict*. *Status inequality* characterizes perceived power differences between the outgroup and the ingroup. *Relevance* signifies whether positive social policies for the outgroup involve personal costs for the members of the ingroup. Finally, an ingroup may have little and/or inaccurate *knowledge* about characteristics and goals of an outgroup, which increases certainty about the outgroup and intensifies perceptions of threat.

Multiple evidence suggests that little knowledge about the other group, scarce and/or negative intergroup contact as well as prior intergroup conflicts reinforce threat perceptions and negative attitudes towards an outgroup (e.g., Kahn et al., 2017; Velasco González et al., 2008). Many of these studies, however, were predominantly conducted in the work context, education, or sports. In intercultural settings, contact experiences and group identity are proposed to be the primary antecedents, which should predict whether an ingroup perceives a culturally different outgroup as threatening (Velasco González et al., 2008; Louis et al., 2013; Yitmen & Verkuyten, 2018). Known as the contact hypothesis, it is suggested that less contact enhances threat, while more and/or better contact can decrease uncertainty about characteristics of the outgroup and therefore reduce threat and prejudice (Allport, 1954; for a meta-analysis see Pettigrew & Tropp, 2006). Despite empirical evidence for their relevance as antecedents, however, only few studies examined the role of contact and group identity in intercultural settings at once, thereby seldom differentiating the quality and the quantity of contact (Velasco González et al., 2008).

In response, the current study drew on the assumptions of ITT to examine the relations between the four types of perceived threats, selected antecedents (here: quality and quantity of intercultural contact and social identity as German), and psychological distress among Germans reflecting on the incoming refugees. Understanding these relations can be important for theoretical as well as for practical reasons. Identifying the antecedents of threat perceptions and distress experienced by Germans when thinking of refugees helps to specify ITT's assumptions on threat development for selected intercultural settings (e.g., Velasco González et al., 2008). If one can identify which antecedent is related to which type of threat, and how these variables are related to psychological distress, informational interventions (such as governmental campaigns which shape social identity; Mols et al., 2014) or educational programs (such as group-based awareness trainings in education or the workplace which shape contact experiences; Paluck, 2006) can be designed more target-oriented to lower refugee-related threat perceptions and distress. Addressing these selected antecedents inherits additional potential to reduce other threat antecedents such as intergroup conflicts, and prevent discrimination, which may indirectly foster refugees' mental health as well (Ringeisen et al., 2020).

Threat Perceptions, Attitudes, and Emotions in Intercultural Settings

A number of studies identified the four types of perceived threat to predict more negative attitudes towards migrants and their societal integration (for an overview see Stephan

& Stephan, 2000). In their study about prejudice against immigrants in the Netherlands Velasco González et al. (2008) found that Dutch participants held negative stereotypes about Muslims and perceived them as a symbolic threat to their values and their social identity as Dutch. Both threat types predicted greater prejudice regarding Muslim immigrants. Other studies suggest that the perception of realistic threats through possible terrorist attacks and criminal offenses precede negative attitudes towards immigrants (Wike et al., 2016; Eid, 2014; Shadid & van Koningsveld, 2001). There is limited research that exam- ined all four types of threat perception in intercultural settings: Stephan et al. (1999) found perceived realistic threat, symbolic threat, intergroup anxiety, and negative stereotypes to be predictors of negative attitudes towards Mexican immigrants in the USA. It was also Stephan et al. (1998), who found the four threat types to be important predictors of attitudes towards immigrant groups - specifically Moroccans, Russians, and Ethiopians- in Spain and Israel.

Only few studies addressed threat perceptions regarding refugees, their antecedents, and/or outcomes such as attitudes or negative emotions (for an overview see e.g., Ringeisen et al., 2020). For instance, Yitmen and Verkuyten (2018) examined the attitudes of the Turkish host community towards Syrian refugees. They found realistic and symbolic threat perceptions to amplify negative attitudes towards refugees. Regarding the relations between threat perceptions and emotional reactions, the few existing studies could show that, if refugees are perceived as a realistic threat, for instance as competitors for scarce resources (Ceobanu & Escandell, 2010), a burden to services of the social welfare system, or as potential perpetrators to the physical well-being (IPSOS, 2016), hostility of the host society towards refugees intensified, which went along with greater anxiety and more psychological dis- tress (Trines, 2017).

According to Stephan et al. (2000a), negative emotional reactions such as stress, anger, or anxiety towards members of an outgroup emerge in defense when individuals perceive an outgroup as a threat to the values, beliefs, and morals of their ingroup. Intergroup anxiety, in particular, should occur when ingroup members are worried to be embarrassed or rejected in an interaction with the outgroup (Stephan & Stephan, 1985). In support of these assumptions, Stephan et al. (2000a) found that US-Americans reported stronger prejudice about Mexicans when they were anxious about interacting with Mexicans or when they attributed negative traits to them. In turn, adverse emotions resulting from intergroup anxiety in intercultural settings can also lead to hostility towards the outgroup, and may further increase anxiety and psychological dis- tress (Trines, 2017).

Antecedents of Perceived Threats Among the Host Community in Intercultural Settings

Drawing on the assumptions of ITT, previous studies differentiated the role of the six antecedents for threat perceptions in selected contexts such as context, education, or sports (e.g., Louis et al., 2013; Stephan et al., 2000b). Across these studies, intergroup conflict and knowledge emerged as important predictors of all four types of threat perceptions towards an outgroup, especially if both groups share a history of disputes and interpersonal clashes. These may be linked to power differences or status inequality (e.g., Prot, 2015; Stephan & Stephan, 2000).

These antecedents, however, seem to be irrelevant when analyzing attitudes towards refugees because most members of the host communities neither experienced inter- personal violence from refugees nor group-based verbal disputes. Instead, group identification and the quality of contact experiences seem to be of greater importance because the respective intercultural settings involve limited points of contact between refugees and members of the host country. According to a research overview from van Assche (2019), positive contact with an outgroup in intercultural settings reduces prejudice and anti-immigration attitudes significantly (Pettigrew & Tropp, 2006; Dhont et al., 2014) and buffers from threat perceptions and related negative emotions (Trines, 2017). Vice versa, a strong cultural group identity is linked to negative attitudes against outgroups (Bemak & Chung, 2018).

So far, only few studies focused on the social identification as German among members of the host community, or investigated the role of both the quality and quantity of intercultural contact experiences for threat perceptions regarding immigrants (Louis et al., 2013) or incoming refugees in particular (Yitmen & Verkuyten, 2018). Existing research mostly concentrated on either the quantity or the quality of contact. Based on these desiderata, we included both types of contact experiences in our study, which examined group identification based on nationality, as well as the quality and the quantity of intercultural con- tact, as possible antecedents of threat perception towards refugees.

Social Identity Based on Nationality

Strong identification with one's nationality increases the risk to perceive immigrants as threatening and to express negative attitudes towards them (Cohrs & Stelzl, 2010). Yitmen and Verkuyten (2018) found that negative behavioral intentions among the Turkish host community towards Syrian refugees were linked to higher social identification

as Turkish, and a higher perception of threat. Louis et al. (2013) identified the national identification of Australians and Canadians as an antecedent of symbolic threat perceptions, negative attitudes and dehumanizing emotions towards immigrants.

The negative affective responses towards migrants may be particularly strong if the group identity as members of the host nation becomes salient (Bemak & Chung, 2018). Thus, if group identity based on nationality is salient, perceived threat will more likely result in aggressive and retaliatory responses towards non-nationals or migrants (Fischer et al., 2010). This means that behavior is guided by factors of group identity (i.e., beliefs and values derived from group membership) rather than interpersonal factors (Wright, 2015). In their study about ingroup identification among White and African-American college students, Stephan et al. (2002) found ingroup identification based on ethnicity to be related to racial attitudes, with symbolic and realistic threat serving as mediators. Similar results have been found in other studies (e.g., Riek et al., 2006).

Quality and Quantity of Contact Experiences

Velasco González et al. (2008) found that more intergroup contact is associated with less negative stereotyping. While the authors only assessed the quantity of contact, they proposed that quality of contact could be more clearly related to symbolic and realistic threat perceptions. The amount of time, the host community has been in contact with foreigners, for instance refugees, only depicts the mere extent of exposure, namely quantity of contact, while the quality mirrors whether the contact was perceived as positive or negative (see Velasco González et al., 2008). In general, increasing contact may reduce negative stereotyping against cultural outgroups and thus prejudice. Positive contact between host communities and migrants in the sense of endorsing multiculturalism, however, reduces both stereotyping and symbolic threat and may therefore indirectly buffer from prejudice against migrants (Velasco González et al., 2008).

In the context of migration, research found that realistic and symbolic threat perceptions of ethnic minorities as an outgroup mediate the relationship between the *quality of contact* and attitudes (Stephan et al., 2002). More negative contact experiences led to stronger perceptions of symbolic and realistic threat, as well as intergroup anxiety. The latter also served as mediating factors between quality of contact and attitudes towards immigrants (Velasco González et al., 2008). More positive contact between members of the host community and immigrants decreased intergroup anxiety and therefore indirectly prejudices.

Current Study

Studies so far rarely analyzed implications of subjective threat for psychological health in intergroup settings that considered all four threat types at once. Moreover, with regard to intercultural intergroup settings, research seldom investigated whether contact experiences and social identification with one's nationality serve as antecedents of threat perception if members of the receiving society get in touch with an outgroup, in our case refugees. Building on these desiderata, the present study examined the relationships between all four types of perceived threats, selected antecedents, and psychological distress among Germans as members of the host community, who reflected on refugees that had been living in Germany for a few years. In terms of a proposed chain, we examined whether three antecedents (social identification with being German, quality and quantity of prior intercultural contact experiences) served as direct predictors of four threat types (realistic and symbolic threat, intergroup anxiety and negative stereotyping), which, in turn, should have a direct enhancing effect on psychological distress. Therefore, the antecedents were expected to have indirect effects via threat perceptions on distress. Based on the assumptions of ITT (Stephan & Stephan, 2000) and the presented summary of the literature, we visualized the conceptual relations between the study variables in fig. 1 and formulated the following hypotheses.
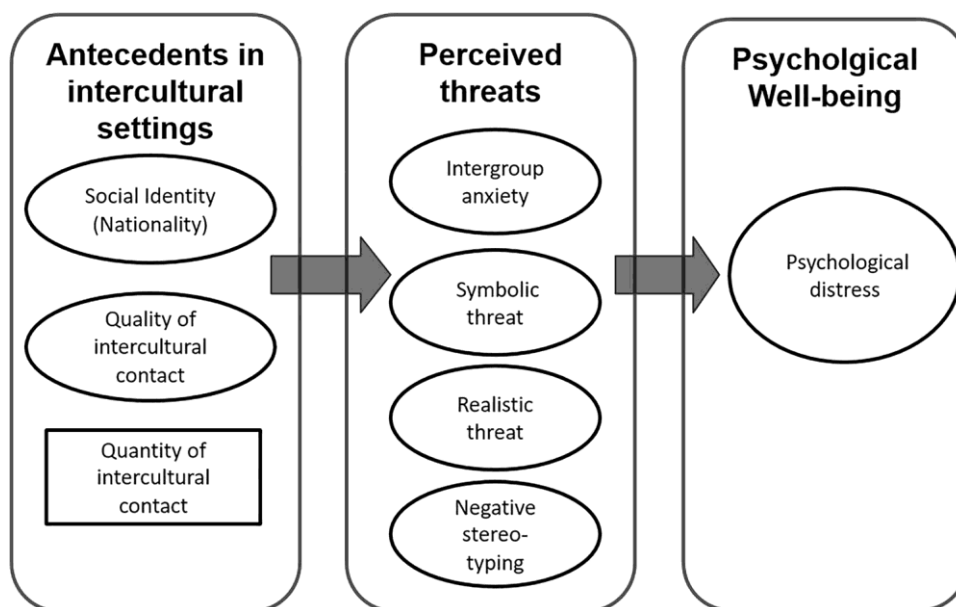
Hypothesis 1: Antecedents, Threat Perceptions, and Distress

Aligned with existing research on social identity (Louis et al., 2013; Yitmen & Verkuyten, 2018; Cohrs & Stelzl, 2010; Fischer et al., 2010; Riek et al., 2006) and positive contact experiences (Stephan et al., 2002; Velasco González et al., 2008) as antecedents of threat perceptions, we hypothesized that high identification as German would relate to higher scores on all four threat types, while quantity and quality of intercultural contact should show inverse relations. Addressing a lack of research, we tested whether the path coefficients of quality/quantity of contact on each threat type would differ in strength. Following-up on prior studies on threat perceptions and emotional outcomes in intercultural settings (Ceobanu & Escandell, 2010; Trines, 2017; Stephan et al., 2000a), we further hypothesized that higher level of threat across all four threat types should be related to greater psychological distress among Germans, when thinking about refugees.

Hypothesis 2: Indirect Effects

Aside from the above-specified unidirectional pathways and in accordance with research that examined threat

Fig. 1 Conceptual relations between antecedents, threat types and psychological distress based on ITT

perceptions as mediators between antecedents and emotions (Stephan et al., 2000a Stephan et al., 2002; Velasco González et al., 2008), we tested for indirect effects. We hypothesized that the indirect pathways from the three antecedents via the four threat types on distress are significant.

Method

Sample

The sample consisted of 1000 Germans (M_{age} = 47.47, SD = 15.10) of which 50,8% identified as female and 49,2% as male. All participants were aged 18 or older, ranging from 19 to 77 years. 64.2% reported being employed. With regard to education, six participants did not complete schooling; 158 completed secondary school qualification (8th grade), 399 completed the secondary school certificate (10th grade), and 218 completed A-levels with a higher education entrance qualification, which is the highest school degree in Germany, allowing graduates to apply for universities or colleges. 219 participants completed a degree at university or college. All participants reported to have German citizenship. In terms of cultural background, 957 indicated that German is their mother tongue. The vast majority were born and raised in Germany (n = 971); the remaining 29 participants reported to have been born in Austria, Bulgaria, the Czech Republic, Denmark, Indonesia, India, Israel, Kazakhstan, Lebanon, the Netherlands, Poland, Russia, Syria, the USA, Turkey, and Vietnam.

Procedures

After receiving permission from the Institutional Review Board of the author's universities and all relevant administrative units, an online survey was realized with the help of an internet survey company. In order to generate an approximation of a representative adult sample with regard to age, gender distribution, education, and location of residence in accordance with the German Bureau of Statistics, the survey company drew a random sample of 2086 from a panel of more than half a million Germans. This sample was invited to take part in the survey (response rate = 48%). Before the start of the survey, the participants were provided with detailed written instructions how to complete the questionnaires. They were specifically informed that participation in the study was voluntary and that all their answers would be confidential, and that they were not obliged to answer a question if they felt uncomfortable doing so. When entering the survey, the participants provided written informed consent. It took 20 min on average to complete the survey.

Measures

We assessed antecedents, subjective perceptions of threat, and psychological distress with well-established instruments, which had been validated with German-speaking samples. Except for the quality and quantity of intercultural con- tact, the wording of the items and/or the instructions were adapted to assess the constructs of interest with reference to the refugees who had arrived in Germany in previous years. Regarding the two facets of contact, we decided to assess previous intercultural experiences with migrants in general,

not with refugees in particular. Two reasons accounted for this decision. First, refugees are a very heterogeneous group with respect to ethnicity, cultural background and country of origin, which members of the host community can hardly distinguish from other migrants in daily interactions (e.g., Brücker et al., 2017). Second, previous studies found that the vast majority of members in the receiving societies have none or at maximum little contact with refugees. Under such conditions, quality of contact with refugees cannot validly be assessed (Kessler & Fritsche, 2018).

Antecedents of Threat Perceptions

Aligned with Velasco González et al. (2008), *the quantity of intercultural contact* was assessed by one item, which captures the frequency of personal contact experiences with foreigners. Participants were asked: *"How often are you involved with foreigners living in Germany on a daily basis?"*. Answers could be given on a four-point scale from *"Almost never"* [1] to *"Very often"* [4].

To assess the *quality of intercultural contact*, we used the subscale "Enjoyment of intercultural interactions" from the German version (Fritz et al., 2005) of the *Intercultural Sensitivity Scale* (ISS; Chen & Starosta, 2000). The subscale comprises four statements (α = .87) that cover attitudes and affective responses towards intercultural situations, as well as behavioral strategies, in particular adaptive communication. All items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). An item example is *"I gladly socialize with people from different cultures."*. Factor loadings in the original study by Chen and Starosta (2000) ranged between .52 and .67. The factor loadings for our study ranged between .85 and .89. Crohnbach's Alpha was .92 in the current study.

Social identity as German was assessed with the respective six-item scale by Maehler (2012). The scale comprises five statements (α > .85) about attitudes towards the social identification as being German. The items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). An item example is *"I am proud to identify with Germany."* The factor loadings in our study ranged from .82 to .90, while the loadings in the original study were .59 to .80 (Maehler, 2012). Cronbach's Alpha in our study was .93.

Threat Perceptions

Aligned with the assumptions of ITT (Stephan & Stephan, 2000), we assessed all four types of subjective threat perceptions, namely intergroup anxiety, symbolic threat, realistic threat, and negative stereotyping. *Symbolic and realistic threat* were assessed with a total of 6 items, which are commonly used to assess facets of xenophobia in regular

large-scale surveys on group-related attitudes towards migration in Germany: Two items from the MITTE studies (e.g., Decker et al., 2014), three items from the ALLBUS studies (General Population Survey of the Social Sciences; Diekmann et al., 2015), and one item from the group-related misanthropy survey (Kühnel et al., 2012). All six items were slightly rephrased to assess xenophobia with regard to refugees who had come to Germany, and provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). Two items captured symbolic threats (e.g., *"Germany is infiltrated with too many foreign influences due to the numerous refugees.");* four items assessed perceptions of realistic threat (e.g., *"In addition to the foreigners living in Germany, the recently arrived refugees take away jobs from Germans.").* In the current study, the two subscales of symbolic and realistic threat did not reflect adequate discriminant validity, and were thus merged for subsequent analyses (see section statistical analyses). The factorial loadings ranged from .68 to .91. Cronbach's alpha was .91.

Intergroup anxiety was assessed by means of an adjective-based scale (Bermeitinger et al., 2017), which comprised three emotion terms (anxious, fearful, worried; α = .82). Participants were asked: *"Please indicate to which extent you feel each of the following emotions when you think about the refugees coming to Germany."* Answers could be given on a five-point scale from *"Not at all"* [1] to *"Extremely"* [5]. The factor loadings ranged from .73 to .82.

We assessed *negative stereotyping* with the four items from the German version (Werner & von Collani, 2004) of the *Ambivalence toward Men Inventory* (Glick & Fiske, 2001), which capture negative attitudes about men assuming they feel superior towards women. The wording was slightly adapted to address male refugees in particular. We decided to use the respective measure for two reasons. First, the majority of refugees who applied for asylum in Germany are young men (Eurostat, 2019). Second, young male migrants perceive greater discrimination than females (Güngör & Bornstein, 2009). Cronbach's alpha for this study was 0.92, compared to values around .85 in the original studies. Participants rated four statements such as *"When refugees "help" women, they only do it to proof their superiority."* on a Likert scale, ranging from 1 ("strongly disagree") to 4 ("strongly agree"). Factor loadings of the original study were .67 to .53 while factor loadings for this study ranged from .89 to .79.

Psychological Distress

Psychological distress was measured with the *K6 Scale* (Kessler et al., 2002), which is widely used to assess the effects of major life events with traumatic potential (e.g., Goodwin et al., 2016). Keyed to the influx of refugees in recent years, participants were asked to rate how often they

Table 1 Fit indices of confirmatory factor analyses and structural equation models

Models	df	χ^2	p	CFI/ TLI	RMSEA (90% CI)	SRMR
Model 1	522	1862.59	.001	.933/ .920	.051 (.048-.053)	.047
Model 2	467	1579.16	.001	.942/ .931	.049 (.046-.051)	.036
Model 3	414	1397.61	.001	.946/.936	.049 (.046-.052)	.037
Model 4	414	1397.61	.001	.946/.936	.049 (.046-.052)	.037

CFI comparative fit index, *TLI* Tucker-Lewis Index, *RMSEA* root mean square error of approximation (90% CI is presented in brackets), *SRMR* standardized root mean square residual; Model 1 = baseline CFA; Model 2 = modified CFA; Model 3: original SEM; Model 4: transformed SEM;

felt six different emotional states during the last 30 days. Examples include nervous, hopeless, restless or fidgety. The six items were rated on a five-point Likert scale ranging from 1 ("none of the time") to 5 ("all of the time"). In this study, factor loadings were ranging from .75 to .88; Cronbach's Alpha was .93.

Statistical Analyses

We used Mplus version 8.00 (Muthén & Muthén, 1998- 2012) to examine the hypothesized latent associations between the study variables by means of structural equation modeling (SEM). In the first step, multi-factor confirmatory factor analysis (CFA) was run to evaluate the measurement model and determine the latent correlations among the study variables (models 1 and 2) (Brown, 2015). Based on the CFA results, the latent associations between antecedents, subjective perceptions of threat and distress were investigated by means of SEM (model 3). For all models, age, gen- der (1 = male, 2 = female), level of education, economical status (average household income in Euros) and country of origin (1 = German-born, 2 = German with migration back- ground) were included as covariates. There were no missing values on the study variables. For the CFA and the SEM, the Satorra-Bentler estimation method was employed, which calculates a mean-adjusted, corrected chi-square and provides maximum likelihood parameter (MLR) estimates that are robust to violations of normality of item distributions (Muthén & Muthén, 1998- 2012). In order to test the indirect effects of the antecedents via the threats on distress, we used the model indirect command in MPlus, which calculates bias-corrected boot- strapped confidence intervals (boot = 2000). As the MLR estimation is not available for the bootstrapping command, we calculated the confidence intervals from an analogous model with the standard maximum likelihood estimation (ML) to test the indirect effects. Model fit was estimated using primary fit indices as recommended by Hu and Bentler (1999): The Chi-Square Test of Model Fit ($\chi2$), the Root Mean Square Error of Approximation (RMSEA) including the 90% confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized

Roo Mean Square Residuals (SRMR). For the CFI and the TLI, a value close to 1 exemplifies an excellent model fit, a value >.95/.90 a good/acceptable model fit. For the SRMR and RMSEA, a value close to 0 denotes a perfect model   fit, whereas values ≤ .06/.08 are good/acceptable (Hu & Bentler, 1999).

To test the strength of relations of quantity and quality of intercultural contact with each threat type separately, we applied the two-stage method as proposed by Kwan and Chan (2011). In SEM, standardized path coefficients are meaningfully comparable but cannot be tested against each other if the variables of interest are assessed with different metrics, as it was the case in the current study. To overcome this obstacle, at stage 1 we transformed the original SEM with standardized paths (model 3) by reparametrization into an SEM with non-standardized paths (model 4), which allows to test the differences in path strength meaningfully. Because the transformed model is covariance-equivalent to the original model the fit indices for both models are identical (see Table 1). At stage 2, equality constraints were imposed on the non-standardized paths of both contact predictors on one threat type to statistically test their difference via Wald tests. Separately for each threat type, we therefore compared the transformed model with freely estimated paths (model 4) with transformed models in which the paths of quantity and quality of intercultural contact on intergroup anxiety (model 5: $\beta_1 = \beta_2$), symbolic-realistic threat (model 6: $\beta_3 = \beta_4$), or negative stereotyping (model 7: $\beta_5 = \beta_6$; see

Table 3 and Fig. 2) were constrained to equal.[1] If a Wald test revealed significant test statistics, the equality constraint would substantially worsen the model fit and, thus, the compared path coefficients of both contact predictors would differ substantially (see Table 3).

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[1] To reduce complexity in Figure 2 and in the result section, only those regression coefficients are numbered whose strength were compared by means of Wald tests.

Fig. 2 Standardized path coefficients between antecedents, perceived threats, and psychological distress in model 3. Note. Only those regression paths are numbered whose strength were compared by means of Wald tests. *p < .05. **p < .01. ***p < .001
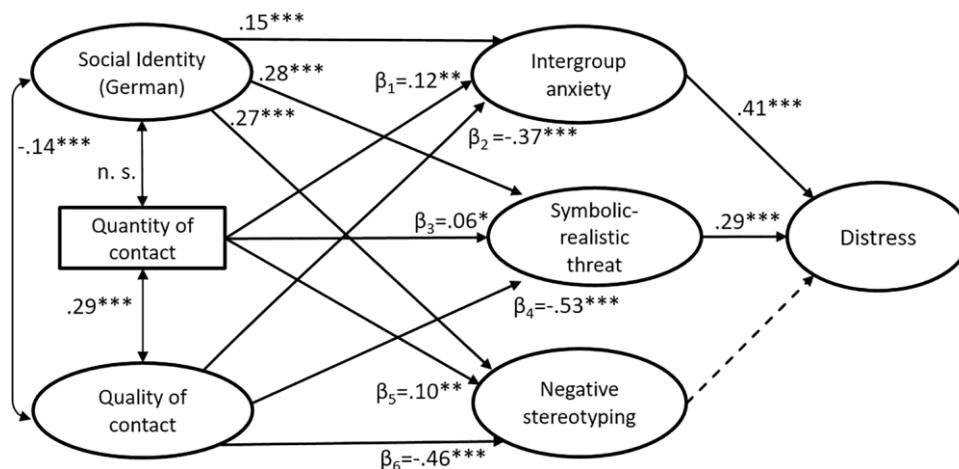
Table 2 Latent correlations of antecedents, perceived threats, and psychological distress in model 2

Constructs	M	SD	2	3	4	5	6	7
1. Social Identity as German	3.11	.896	−.030	−.139***	.356***	.351**	.191***	.108**
2. Quantity of intercultural contact	2.59	.947		.288***	−.110**	−.057	−.005	−.023
3. Quality of intercultural contact	2.95	.893			−.571***	−.480***	−.361***	−.391***
4. Symbolic & realistic threat	2.07	1.05				.818***	.655***	.584***
5. Negative Stereotyping	2.41	1.02					.596***	.489***
6. Intergroup anxiety	2.29	.985						.617***
7. Psychological distress	2.05	1.12						

N = 1000. *p < .05. **p < .01. ***p < .001

Table 3 Results of the Wald tests for comparing the regression coef- ficients of quantity/quality of contact separately on each threat type based on the transformed model

Regression coefficients on	Wald χ²	df	p
Intergroup anxiety ($\beta_1 = \beta_2$)	64.96	1	< .001
Symbolic-realistic threat ($\beta_3 = \beta_4$)	166.19	1	< .001
Negative stereotyping ($\beta_5 = \beta_6$)	113.90	1	< .001

Wald χ2 = chi-square statistics of the Wald tests; df = degrees of freedom of the Wald tests

Results

Preliminary Analysis

To evaluate the measurement model and determine the latent correlations among the study variables, multi-factor CFA was conducted. The indices for the initial CFA (model 1) revealed a satisfactory fit (see Table 1). The standardized model solutions yielded a correlation of .94 between the two latent factors of symbolic and realistic threat. This suggests that the participants could not discriminate between the two threat types, which were

therefore merged into one subscale. The repeated CFA (model 2) yielded a good model fit (see Table 1).

The factor loadings ranged from .82 to .90 for social identity. For quality of intercultural contact, they were between .85 and .90, for symbolic and realistic threat from .68 to .90, from .82 to .89 for negative stereotyping, from .73 to .82 for intergroup anxiety and from .76 to .87 for psychological distress. Screening the latent correlations, the hypothesized patterns could largely be confirmed (see Table 2).

Relations among Antecedents, Threat Perception and Psychological Distress

To control for variance overlap between the measures, SEM was applied to determine the unilateral latent relations between antecedents, threat perceptions, and psychological distress. The baseline SEM (model 3) is depicted in Fig. 2. Its fit indices reflected a good fit (see Table 1). In the SEM, we allowed the three antecedents, as well as the three threat variables to covary. While social identification as German and quality of contact were negatively related to each other ($r = -.14$; $SE = .04$; $p < .01$), quantity of contact was only related to quality of contact ($r = .29$; $SE = .03$; $p < .01$). All

threat types exhibited substantial positive relations to each other *(r ranging from .58 to .72; all SE = .03; all ps < .01).*

Concerning our first hypothesis, the hypothesized relations were mostly congruent with the observed patterns. High social identification as German was associated with stronger intergroup anxiety *(β = .15; SE = .04, p < .01)*, a higher perception of symbolic and realistic threat *(β = .28; SE = .03, p < .01)*, and stronger negative stereotyping *(β = .27; SE = .03, p < .01)*. As hypothesized, the quality of contact showed reversed relations with threat perceptions: More experiences of previous positive intercultural contact predicted lower levels of intergroup anxiety *(β₂ = −.37; SE = .04, p < .01)*, symbolic-realistic threat *(β₄ = −.53; SE = .03, p < .01)*, and negative stereotyping *(β₆ = −.46; SE = .03, p < .01)*. Against our expectations, a greater quantity of contact was slightly yet positively related to inter- group anxiety *(β₁ = .12; SE = .04, p < .01)*, symbolic-realistic threat *(β₃ = .06; SE = .03, p = .02)*, and negative *stereotyping ((β₅ = .10; SE = .03, p < .01).*

Greater psychological distress with regard to refugees was predicted by higher levels of intergroup anxiety *(β = .41; SE = .05, p < .01)*, as well as symbolic and realistic threat *(β = .29; SE = .06, p < .01)*, while negative stereotyping had no significant effect *(β = −.01; SE = .06, p = .88)*.

Regarding the covariates, we found age *(β = −.15; SE = .03, p = < .01)* and the level of education *(β = −.06; SE = .03, p = .04)* to be negatively associated with psycho- logical stress, meaning that older participants and those with higher educational level reported lower levels of psycho- logical distress. Symbolic-realistic threat *(β = .07; SE = .03, p < .01)* as well as intergroup anxiety *(β = .18; SE = .03, p < .01)* were linked positively to gender, showing that women perceived these threat types more intensely than men. Negative stereotyping was associated negatively with the level of education *(β = −.07; SE = .03, p = .02)*, reflecting that those participants with higher education engaged in less negative stereotypes when thinking of refugees. Age and the level of education were linked to all antecedents, yielding slightly different patterns for social identity as German (for age: *β = .02; SE = .03, p < .01*; for education: *β = −.08; SE = .03, p = .01*) as well as the quality (for age: *β = .12; SE = .03, p < .01*; for education: *β = .23; SE = .03, p < .01*) and quantity of intercultural contact (for age: *β = −.15; SE = .03, p < .01*; for education: *β = .12; SE = .03, p < .01*). Additionally, gender was negatively linked to quantity of contact *(β = −.08; SE = .03, p < .01)*, meaning that male participants reported more contact than women.

The original SEM (model 3) was successfully reparametrized into an SEM with non-standardized paths (model 4), as indicated by the identical fit indices (see Table 1). Applying the Wald test, we found the regression coefficient of quantity of contact on intergroup anxiety to be significantly weaker than the regression coefficient of quality of

contact *(β₁ = .12 vs. β₂ = −.36, p < .001)*. The same pattern emerged comparing the paths of quantity/quality of contact on symbolic-realistic threat *(β₃ = .06 vs. β₄ = −.55, p < .001)*, and comparing the paths of quantity/quality of contact on negative stereotyping *(β₅ = .10 vs. β₆ = −.47, p < .001; see Table 3)*. For each threat type, the associations with quality of contact were therefore stronger than with quantity of contact.

Indirect Effects

Testing for indirect effects via bias-corrected bootstrap- ping based on the SEM with standardized paths (model 3), revealed the following significant paths: Social identity as German had an indirect amplifying effect on psycho- logical distress via intergroup anxiety *(b = .061, p < .001, CI_lower = .026, CI_upper = .108, SE = .018, CR = 3.508)*, as well as via symbolic and realistic threat *(b = .088, p < .001, CI_lower = .043, CI_upper = .144, SE = .021, CR = 4.144)*. Vice versa, the quality of contact had an indirect attenuation effect on psychological distress via symbolic and realistic threat *(b = −.166, p < .001, CI_lower = −.257, CI_upper = −.084, SE = .035, CR = −4.784)* and via intergroup anxiety *(b = −.153, p < .001, CI_lower = −.230, CI_upper = −.099, SE = .026, CR = −5998)*. Lastly, intergroup anxiety also served as a mediator between quantity of contact and distress *(b = .049, p = .003, CI_lower = .015, CI_upper = .101, SE = .017, CR = 2.938)*.

Discussion

The aim of this study was to examine, whether social identity as German and quality/quantity of prior intercultural contact enhance or reduce different types of threat perceptions that Germans may experience when they think about the refugees, who had arrived in Germany previously. Further, we explored the impact that these subjective threat perceptions can have on the psychological distress of Germans. Aligned with the assumptions of the ITT, we found greater identification as German to be associated with greater intensity levels across all four threat types. The more the sample identified as German, the more they perceived incoming refugees as a threat to their physical and economic integrity as well as to their morals and values (realistic and symbolic threat), and pictured refugees in more negative stereotypes as hostile towards women. Further, in terms of an attenuation affect, the better the prior experienced intercultural contact, the less the participants experienced intergroup anxieties, the less they described refugees in terms of negative stereotypes, and the less they perceived refugees as threats to their physical and economical status quo and their values. Against our

hypothesis, the quantity of contact also exhibited slight positive associations with all threat types although the quality of contact consistently showed stronger relations. Our findings on the quantity of contact partly contradict the studies from Pettigrew and Tropp (2006) and Velasco González et al. (2008), which found the frequency of contact to decrease prejudice and negative stereotyping and therefore improve the relation between members of the host community and ethnic minorities. The unexpected positive effect of quantity of contact on threat perceptions may be explained by the low frequency of contact experiences because all participants reported having "almost never" or at maximum "seldom" contact with foreigners. One could argue that such a lower frequency of contact may increase interaction fears because of the lack of experiences with intercultural situations. Having seldom instead of no contact may increase uncertainty, which may explain its reinforcing effect on negative stereotyping and threat perceptions regarding refugees, which can be attenuated if members of the host society get to know more about the group. Such interpretation is in line with findings showing that at least moderate frequency of regular contact is necessary for the ingroup to change their views on the outgroup (Pettigrew & Tropp, 2006).

By means of simultaneously assessing social identification with being German, and quality and quantity of intercultural contact experiences, we were able to differentiate their relations with all four threat types, and thus to specify their individual contribution as threat predictors. Comparing the role of both contact variables for threat experiences, the quality of intercultural contact seems to be of primary importance whose beneficial effects may transfer to the perception of refugees. Different interpretations may account for these effects. Simply having intercultural contact with foreigners does not help Germans to perceive other migrant groups – in our case refugees – as less threatening. On the contrary, having almost none or little contact may even increase threat perceptions because members of the host community may overestimate cultural differences and experience intensifying feeling of anxiety about how to interact in a suitable manner (Pettigrew & Tropp, 2006). Vice versa, Germans who collected positive contact experiences with people with other cultural backgrounds might feel less afraid of uncertainty in interaction with refugees because they might have improved their ambiguity tolerance in similar situations. Positive intercultural contact experiences may help Germans to perceive the heterogeneity of refugees regarding morals, values, personal backgrounds and goals more precisely, enabling them to take a more differentiated and individualized look at refugees as a group. Positive contact experiences may serve as a filter, which helps Germans to adopt a more empathetic outlook on refugees, better perceive their individualized needs, and thus

develop an understanding for similarities instead of differences (Pagotto et al., 2010).

Taken together, our findings corroborate the results of previous studies, which found that high social identification with one's nationality increases negative attitudes and negative behavioral intentions towards immigrants via threat perceptions (Yitmen & Verkuyten, 2018; Louis et al., 2013). Positive intercultural contact experiences, on the other hand, that members of the host community collected with culturally dissimilar groups decreased their risk to adopt a right-wing ideology, and reduce perceived threats and prejudices towards refugees and immigrants (van Assche, 2019). As other studies suggested, positive contact experiences are motivating people of one group to engage further in inter-cultural interaction situations with members of the other group while negative contact experiences might compromise this interest and feed intergroup anxiety as well as negative expectations regarding the interaction (Paolini et al., 2018; Prati et al., 2021). That said, the results of our study highlight the importance of fostering opportunities for Germans to experience positive intercultural contact in order to motivate them to continue engaging in intercultural contact situations, which thus seems to be crucial to buffer from threat perceptions and lower anxiety when interacting with members of cultural outgroups, especially regarding refugees.

With regard to the predictors of psychological distress as the outcome variable, we found that intergroup anxiety as well as symbolic and realistic threat displayed strong direct and positive associations with psychological distress, while the relation with negative stereotyping was not significant. In terms of indirect effects, the quality of intercultural contact decreased psychological distress via symbolic/realistic threat and intergroup anxiety, while the social identification with being German – and in part the quantity of contact
- showed contrary patterns. Defining oneself by nationality may increase the risk to perceive refugees as outsiders, which may maximize the perception of cultural differences (symbolic threat) and unfairly distributed resources between nationals and non-nationals (realistic threat), and increase anxiety and even hostility when interacting with refugees in daily life, which negatively affects mental health in terms of greater distress (Ringeisen et al., 2020; Yitmen & Verkuyten, 2018). On the contrary, previous positive contact experiences with foreigners may enable Germans to perceive refugees and their needs in a more differentiated and individualized way, and possibly consider them as part of a culturally diverse German population, which reduces the perception of cultural differences (symbolic threat), buffers from anxiety when interacting with refugees in daily life, and may even foster curiousness to learn more about their needs by engaging in further interaction situations with refugees, rather than avoiding them (Paolini et al., 2018; Prati et al., 2021). Activating a category of social identity,

which defines refugees as a part of the German population, may enable Germans to adopt a more empathetic and individualized outlook on refugees, which may be conducive to social inclusion and integration, and therefore enhance mental health of Germans.

Aligned with the assumptions of ITT, our results on social identification with being German and the quality of contact extend the findings and implications of prior studies (Stephan et al., 2002; Velasco González et al., 2008) by showing strong indirect effects on mental health. Moreover, previous research concentrated on prejudice and attitudes towards ethnic minorities as the outcome variable. We could show that threat perceptions not only play a role for the cognitive facet of attitudes among members of the host community, but also seem to go along with affective reactions, which are related to these attitudes (Ketturat et al., 2016). So far, studies that examined the outcomes of threat perceptions concentrated mostly on the cognitive facet of prejudice against an outgroup. In this study, we focused on the mental health consequences of perceived threats in terms of psychological distress. Our results imply that the three threat types, which depict affective correlates of psychological distress are more relevant mediators between antecedents and distress, com- pared to negative stereotyping, which is cognitive in nature.

Strengths and Limitations

The present study has a number of strengths. To our knowledge, it is the first study to examine the relations between all four threat perceptions as proposed by ITT, their antecedents, and health outcomes in terms of distress by means of SEM at a latent level and with focus Germans as the members of the host community when thinking of incoming refugees. In our model, we differentiated the effects of frequency and the quality of intercultural contact experiences while specifying group identity with reference to national identification. Lastly, we tested the model with regard to the recent context of Germans and arriving refugees, which, to our knowledge, no other study has focused on yet.

Some methodological limitations need to be taken into account as well. First, due to the response rate of 48% in the randomly selected sample, generalizations to the German population cannot be made. Nevertheless, the study is based on a big sample of 1000 participants, which is an approximation of a representative German sample. Second, the cross- sectional design of the study does not allow determining causality in the relations among the study variables. Third, one might argue that the study is limited in its reliance on self-report measures. Instead of revealing actual differences, participants may have differed in their capability and willingness to report intensity levels across the study variables (Bryant et al., 1996). However, we were particularly interested in the self-perception of the participants as affective

manifestations of attitudes and its health-related correlates are essentially subjective in nature. We thus decided to focus on self-report for the current study but used only validated, well-established instruments for the questionnaire.

Fourth, the items of realistic and symbolic threat showed strong intercorrelations, which did not allow us to distinguish the effects of these two threat types. Therefore, we had to model these threats simultaneously in the SEM. Fifth, because previous research pointed out that members of the host community only seldom have contact with refugees and cannot distinguish them from other migrant groups, we assessed the quantity and quality of contact experiences regarding migrants in general. For future research, we encourage researchers to assess both measures with regard to refugees directly.

Future Directions and Conclusion

With our focus on the members of the host community and their perception of refugees, we were able to expand the empirical evidence for the ITT to include a recent context of rising levels of negative attitudes from Germans towards arriving refugees. With our study, we could show that perceiving refugees as threats poses a self-harming health risk for Germans, especially for the ones identifying highly with being German as they have a higher risk of feeling culturally threatened by the previously arrived refugees. This can lead to increased psychological distress while positive contact experiences have a reverse effect. Germans that experienced positive intercultural interactions are less prone to perceiving refugees as threatening. Instead, they benefit from these interactions with less psychological distress and therefore an increased mental health.

The present results suggest that the frequency of con- tact with foreigners in itself cannot lower the psychological distress Germans experience when thinking of refugees; neither can interactions with people in intercultural settings. However, the latter can cause a positive change of the way Germans perceive refugees which in turn can reduce psychological distress. The quality of intercultural contact experiences is crucial to benefit from a multi-ethnic and intercultural German society and to obtain or enhance mental health of both, refugees and Germans. This observation is important, especially for practical approaches to lower threat perceptions of Germans and support solidarity between them and refugees. The German government could for example fund buddy programs for people of culturally different background who work in similar jobs/ branches, in order to promote intercultural contact experience, as it poses as crucial antecedent of low threat perceptions. Additionally, the government could embed the program in an information campaign that is targeted towards the merits of approaching intercultural contact, as an engaging

counterpart against dividing tendencies in politics, society and media (see also Paolini et al., 2018). Educational programs, awareness trainings in the workplace and informational campaigns can help fostering intercultural contact and evolve social identities towards a less exclusive group identity if they are based on seeing people as social beings who are being drawn towards group they perceive as similar to themselves, in one way or another (Mols et al., 2014). Following the example, social identity with being German could evolve towards a more open understanding of who is German, in order to reduce the amplifying effect on Germans' threat perceptions towards refugees.

Further research should focus more on the effect of attitudes towards refugees and their predictive strength regarding the psychological distress of Germans. There should be more studies on antecedents of threat perceptions in the context of refugees, especially to figure out under which conditions contact frequency has negative or positive effects on threat perceptions, and which determinants are relevant for qualitative intergroup contact. We encourage future research, which examines whether our results also apply to other countries and to members of other host communities. A high social identity on the national level in the respective countries should be taken into account as a factor that can influence attitudes towards refugees as well as psychological distress of the host societies. An increased knowledge about these processes on an international level can help finding practical solutions to enhance a shared social identity and the united growth of societies where cultural diversity is seen as a chance and enrichment, not as a burden or a threat.

Declarations

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Study 2

Germans' awareness of refugees' information barriers regarding health care access:

a cross-sectional study

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Germans' awareness of refugees' information barriers regarding health care access: a cross-sectional study

Saskia Schubert[1*], Ulrike Kluge[2], Felix Klapprott[2,3] and Tobias Ringeisen[1]

Abstract

Background In light of their experiences on the refuge and upon their arrival in the receiving society, refugees may have differentiated needs regarding health care. However, negative attitudes of the members of the receiving society and a lack of information pose as barriers for refugees when trying to access health care services. In that sense, it is largely unknown, which antecedents positively affect Germans' perception of information barriers that refugees face. Based on an extended version of the Empathy-Attitude-Action model, this study examined selected predictors of problem awareness in the form of perceived information barriers that refugees face, emphasizing the role of positive intercultural contact experiences.

Methods A sample of members of the receiving society, here: Germans (N = 910) completed a cross-sectional online survey with validated self-report measures. From the perspective of Germans, assessments covered positive intercultural contact, attitudes on refugees' rights, the recognition of refugees' socio-emotional support needs as a form of cognitive empathy, and the perception of refugees' information barriers when accessing health care. We conducted structural equation modeling to examine hypothesized latent associations and specified three different models with unidirectional paths between the study variables, each allowing another direct path from intercultural contact to the variables. We determined the best model using the chi-square-difference test and tested for indirect effects along the paths through bias-corrected bootstrapping.

Results Our results show consistency with the Empathy-Attitude-Action model. We found Germans' cognitive empathy toward refugees to be associated with more positive attitudes and a greater awareness of refugees' information barriers. We further found more positive intercultural contact to be associated with greater cognitive empathy toward refugees and with more positive attitudes. While these contact experiences showed a slightly direct negative effect on Germans' perception of refugees' information barriers to accessing health care, the indirect effects via cognitive empathy and positive attitudes were positive.

Conclusion Previous positive intercultural contact may be directly and indirectly linked to greater awareness for refugees, helping Germans as the receiving community (1) to become more empathetic toward refugees, (2) to improve their attitudes toward refugees' rights and to (3) raise consciousness for information barriers that refugees face when trying to access health care services.

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In the last ten years, the number of displaced people around the world has doubled. Due to wars, violent conflicts, and persecution 82.4 million people worldwide were forced to flee and abandon their homes, friends, and families of whom 1.23 million refugees found shelter in Germany [1]. With that, the country hosted the fifth-largest number of people displaced across country borders worldwide [1]. For instance, 1,056,416 Ukrainian refugees have been registered in Germany since the war started in February 2022, with a further influx to be expected with the war still going on [2]. Such high numbers of refugees pose a challenge for the health care infrastructure of receiving countries such as Germany, as refugees face multiple stressors through- out the process of arriving and resettlement that require access to adequate health care. Aside from traumatic experiences during the flight, especially social stressors such as a lack of support in daily life, rejection or even discrimination can lead to multiple psychological issues that make it necessary to receive treatment [3–6]. In terms of a downward spiral, refugees' health may further deteriorate if their health care needs are met insufficiently [7].

Despite the great need for adequate health care, refugees in Germany often report a lack of knowledge about how to access and use health care [8]. Healthcare for citizens in Germany is financed by the statutory health insurance scheme, ensuring the coverage of treatment. However, the medical care for refugees seeking asylum in Germany is based on the Asylum Seekers Benefits Act (in German "Asylbewerberleistungsgesetz") [9], which deter- mines that asylum seekers are entitled to the treatment of acute illnesses and pain, including necessary medical and dental treatment and supply of medicines or other services required for recovery from illnesses. Particularly vulnerable persons, such as pregnant women, minors, traumatized persons, or persons with disabilities, are entitled to further necessary medical care.

In case of an acute need for medical treatment, there are different procedures that give refugees who are registered as asylum seekers access to medical care, depending on the federal state laws in Germany. In six federal states, refugees can receive electronic health cards, which facilitate access to health care and offer a more extensive medical care; three other federal states are currently in the process of implementing the card. In the remaining seven federal states, the responsible municipal offices issue treatment vouchers that refugees can use to see a doctor [9].

It is the responsibility of the government and the federal state offices to ensure treatment and provide refugees with access to appropriate information on the health care system in general, on their support options in particular or where to go in order to get help [9, 10]. In every- day life, however, refugees tend to experience rather the opposite. Bureaucratic, complicated, and legally strenuous processes pose a barrier for refugees when trying to obtain adequate information about accessing and utilizing health care services [9, 10]. Negative experiences with state and/or health authorities, e.g. due to language barriers or distrust can reinforce an already existing lack of information or a reluctance to try accessing health care services at all [8, 11, 12]. If public authorities do not adequately provide refugees with relevant information, members of the host com- munity could serve as gatekeepers[1] and help refugees to become familiar with health care options and appropriate contacts, provided they are aware of the information barriers that refugees often face [13]. With this in mind, it is important to find out, how Germans can help to facilitate refugees' access to health care services. This includes exploring Germans' awareness of refugees' health care information barriers and its antecedents, as increased awareness may provide a bridge to taking supportive action [13]

Antecedents to awareness and the intention to help may include empathy, positive attitudes, and previous positive contact experiences with people of other cultural backgrounds [14–16]. However, there is little research on the interplay of these factors in the context of refugee support in Germany [17, 18]. Existing research on refugees has focused on negative attitudes that not only cause and exacerbate refugees' mental health issues, but may also obstruct their access to health care services [11, 19, 20]. Building on existing research, we therefore used and extended the Empathy-Attitude-Action-model (EAA- model) [14], which specifies antecedents of prosocial action toward members of the outgroup, to examine the German receiving community's awareness of information barriers refugees may face in accessing health care. Specifically, we examined empathy, positive attitudes, and positive contact experiences as positive antecedents of awareness.

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[1] Civil society cannot take over the state's tasks, but it can supplement and bridge them in emergency and crisis situations (see discussion).

Using the empathy-attitude-action-model to examine Germans' empathy and awareness toward refugees

Batson and colleagues' EAA-model assumes that empathy toward one member of an outgroup expands to empathy toward the entire outgroup, which should pro- mote positive attitudes toward the outgroup and lead to motivation to help [14]. Thus, outgroup attitudes are suggested to serve as a mediating variable between empathy and prosocial action intentions. Empathy consists of an emotional and a cognitive component [21, 22]. Emotional empathy can be defined as an affective response that is similar to another person's emotional state and is based on an understanding of what the person needs to feel better (Eisenberg et al., 1991; 2010) [23, 24]. Such understanding corresponds to cognitive empathy in the sense that the perspective of another person in a given situation is consciously taken [14, 25]. In the EAA-model, attitudes are defined as the overall evaluation of an out- group and its members, whereas prosocial action can be described as the intention to help [14]. In the context of health care, prosocial action may thus refer, for example, to informational support in terms of advice on organizations or websites that might help with getting an appointment with a specialized physician or therapist.

Since its publication in 2002, the assumptions about the enhancing effect of empathy on positive attitudes toward an outgroup and resulting prosocial behaviour, as specified in the EAA-model, have been confirmed by numerous studies with children and adolescents in the context of intercultural contact, including contact between members of the receiving society and refugees; studies with adults are sparse yet also yielded confirming evidence [14, 17, 20]. For instance, previous research has shown that encouraging people to take the perspective of the outgroup (i.e. cognitive empathy) increases emotional empathy, which in turn promotes positive attitudes toward the outgroup [26]. In a study with children in Northern Ireland that looked at their interaction with Syrian refugee children, Glen and colleagues induced empathy and found that attitudes toward the outgroup predicted children's willingness to help incoming refugee children [15]. In another study with Italian children without migration experiences [18], intergroup empathy was found to be associated with higher levels of positive attitudes toward immigrant children and with more pro- social behavioral intentions.

These findings underline that the EAA-model is suit- able for researching the antecedents of intentions to help refugees. Yet, the model and its core constructs need to be redefined in order to explore host society members' awareness of the information barriers which refugees face to accessing health care. As a starting point, Germans need to be able to take the perspective of refugees who

may have suffered multiple stressful experiences during refuge, arrival and resettlement, resulting in severe emotional disturbances that require appropriate treatment [3–6]. Therefore, with regard to empathy, we specifically examined cognitive empathy in our study to assess whether Germans recognize refugees' socio-emotional support needs as a form of perspective-taking [25]. The vast majority of receiving society members have no or at most little contact with refugees and thus most likely could not develop emotional empathy [6, 27].

Given the role of outgroup attitudes when predicting prosocial action, positive attitudes are crucial for peoples' willingness to offer help to members of the outgroup [14, 18]. Negative attitudes against refugees and their rights, on the other hand, reduce prosocial behaviour among members of the receiving society [20]. Positive attitudes toward refugees may thus pose as a counter- weight to negative attitudes, and enhance the willingness of ingroup members to provide information on how refugees can use and access health care. Acknowledging refugees' rights would mean to grant them better access to health care services, as the recognition of a legal asylum status would grant refugees better access to state/public services such as higher education, health care, etc [9]. We therefore operationalized Germans attitudes toward refugees through their positive attitudes regarding refugees' rights.

In addition to redefine the three core constructs, we suggest adapting the EAA-model by including awareness regarding access barriers that refugees face as a prerequisite for prosocial action. As Germans so far reported low to no contact with refugees [6], actual helping action can- not be measured in a valid way. However, prior research suggests that awareness of access barriers to health care can be seen as an important precondition to the motivation of providing informational support [13, 28]. In our context, Germans as members of the receiving society need to perceive refugees' information barriers, when trying to use health care services to jump into action and provide information on health care access [13]. There- fore, in line with Batson et al., [14] we concentrated on Germans' perception of refugees' information barriers regarding health care as an antecedent of helping actions as our outcome variable.

Based on the refined EAA-model and the study findings by Yaya et al. from 2019 [13], we specified our first hypothesis: We propose that Germans' cognitive empathy toward refugees is linked to positive attitudes toward refugees and their rights, and positively connected to the awareness of information barriers, as visualized with bold arrows in Fig. 1. Accordingly, to perceive refugees' information barriers and be able to support them on their way to getting access to health care, Germans first would have to recognize their socio-emotional support needs and
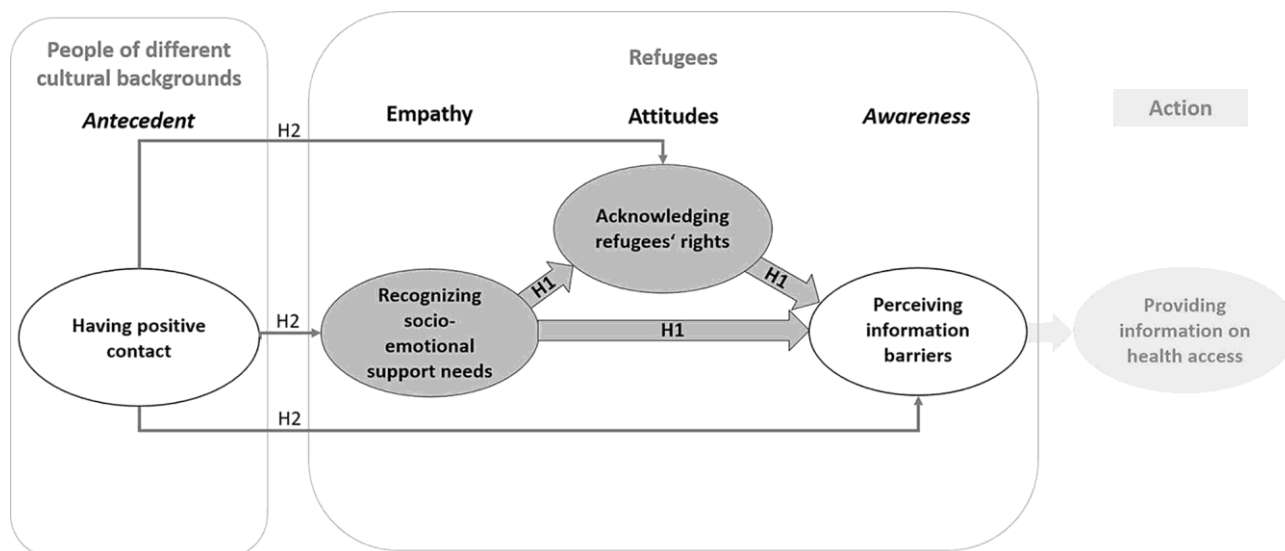
Fig. 1 Extended EAA-model including awareness positive contact with people of different cultural background as an antecedent. *Note.* Dark grey shapes are variables from the original EAA model, white shapes are extensions of the original model, the light grey frames represent the respective outgroup, and the arrows visualize the expected positive relationships according to H1 and H2

acknowledge their rights. We expected greater cognitive empathy among Germans to be linked to a greater awareness of refugees' information barriers regarding access to health services, directly and indirectly via more positive attitudes regarding refugees' rights (see Fig. 1, H1).

The role of positive intercultural contact for empathy and attitude development

In the present study, we propose to extend the EAA- model by including previous positive intercultural con- tact experiences as a relevant antecedent in the model, as they have been found in previous studies to significantly predict empathy, attitudes, and awareness toward socio- cultural outgroups, and the intention to help these out- groups [16, 29]. However, it is not yet known whether positive contact with people of different cultural back- grounds enhances perceptions of information barriers, and whether this effect is direct or mediated by empathy or outgroup attitudes, as suggested by the EAA-model. Previous studies primarily examined the effects of cross- ethnic friendships and empathy on attitudes toward culturally or ethnically diverse groups and on participants' motivation to engage in helping behaviour. For instance, in a study with children from different ethnic back- grounds, Aboud and colleagues found that intergroup contact was associated with positive attitudes toward children with a different ethnic background [29]. Studies conducted among children with and without a migration back- ground in Germany and Italy found similar results [18, 30]. In addition, and in support of the EAA-model, Vezzali et al. found that positive attitudes could lead to an increase of motivation to act helpfully [18]. Johnston and Glasfords study with adults of different ethnic

backgrounds confirmed associations between empathy and outgroup prosocial intentions mediated by attitudes [31]. However, research on contact between refugees and mem- bers of the receiving society is sparse [18], likely because the vast majority of adults in the receiving society report having little or no contact with refugees [27]. Therefore, we de- cided to assess previous positive inter- cultural contact ex- periences with people from different cultural backgrounds in general, as positive experiences with one socio-cultural outgroup are positively linked to empathy, supportive atti- tudes, awareness, and intentions to help other socio-cul- tural outgroups [6, 18].

Extending the EAA, we therefore propose in our second hy- pothesis that prior positive contact with people of differ- ent cultural backgrounds serves as a relevant antecedent, which shows positive and direct associations with cognitive empathy, positive attitudes and awareness of refugees' in- formation barriers (see Fig. 1, H2). There- fore, previous pos- itive intercultural contact should help Germans to perceive greater socio-emotional support needs of refugees to a greater extent, improve their attitudes toward refugees' rights, and enable them to develop greater awareness of ref- ugees' information barriers when accessing health services. Further, we expect indirect associations between having positive contact with people of different cultural back- grounds and with the awareness of information barriers via cognitive empathy and positive attitudes. Figure 1 shows the extended EAA-Model. Empathy, attitudes, and prosocial action as core constructs of the original EAA-model are shown in grey, with action masked out because we did not examine this variable in the present study. Instead, we included.

awareness of information barriers, and further, intercultural contact as an antecedent, which are shown in white. The light grey frames illustrate the outgroup context of each variable.

Method
Sample
The sample consisted of 910 Germans (Mage = 48.40, SD = 14.79) of whom 460 identified themselves as female (50.5%) and 450 as male (49.5%). All participants met three criteria to be included in the study: They reported to (1) have German citizenship, (2) be born in Germany, and (3) their parents to be born in Germany as well.[2] We focused on Germans without migration experience because we wanted to find out how people whose inter- cultural contact experiences had predominantly been collected outside the family context empathize with refugees and perceive their access to health care.

All participants were aged 18 or older. Concerning education, three participants did not complete schooling; 148 completed secondary school qualification (8th grade), 379 completed the secondary school certificate (10th grade), 188 completed A-levels with a higher education entrance qualification, and 192 completed a degree at university or college [6].

Procedures
After approval by the Institutional Review Board and all relevant administrative units, an internet survey company was used to conduct an online survey. To generate an approximately representative adult sample in terms of age, gender, education, and place of residence in accordance with the German Bureau of Statistics, the survey company drew a random sample of 2086 from a panel of more than half a million Germans, who had previously provided consent to be contacted for survey purposes. This sample was invited to participate in the survey via a link sent to them by the survey company (response rate = 44%). Before the survey began, participants received detailed written instructions on how to complete the questionnaires. They were explicitly informed that participation in the study was voluntary and that all their answers would be treated confidentially, and that participants were not obliged to answer a question if they felt uncomfortable doing so. When starting the survey, participants provided written informed consent. Respondents had to answer three filter questions with 'yes' to be included in the survey to ensure that only Germans participated (do you have German citizenship: yes/no; were you born in Germany: yes/no), were both your parents

born in Germany: yes/no). Completing the questionnaire took less than 20 minutes [6].

Measures
From the perspective of the Germans as the receiving society, we used established self-report instruments validated on German-speaking samples to assess positive contact with people of different cultural backgrounds, recognition of refugees' socio-emotional support needs, positive attitudes toward refugees' rights, and the perception of refugees' information barriers when accessing health care. Except for positive intercultural contact, item wording and/or instructions were adapted to assess them with reference to refugees who had arrived in Germany in previous years, for instance by changing the reference group from "migrants" to "refugees") [6, 8]. After adjustment the wording and/or the introductory statements of the respective measures, we piloted the changes. Six Germans varying in terms of age, gender and educational background checked the adjusted instructions and/or respective items for clarity and understandability. As all items were approved and no potential for further modification was identified, we proceeded with the study.

Antecedent
We used a subscale from the German adaption of the Intercultural Sensitivity Scale with the title "Enjoyment of intercultural interactions" to examine *positive intercultural contact* as an antecedent of empathy, attitudes, and awareness [32, 33]. The subscale includes four statements that capture attitudes and affective responses to intercultural situations, accompanied by a four-point Likert scale (1="strongly disagree" to 4="strongly agree". One item example states "I gladly socialize with people from different cultures." Factor loadings in the original study ranged from 0.52 to 0.83; the corresponding Cronbach's Alpha was 0.87 [33]. In the current study, factor loadings ranged from 0.86 to 0.89 and Cronbach's Alpha was 0.91. We chose to measure positive contact with people from different cultural backgrounds in general rather than with refugees in particular. There were two reasons for this decision. First, refugees are a very heterogeneous group in terms of ethnicity, cultural background, and country of origin that members of the receiving society can hardly distinguish from other migrants in everyday interactions [34]. Second, the vast majority of Germans have no or at most little contact with refugees. Under these conditions, positive contact with refugees cannot be validly captured [6, 27].

Empathy
Recognizing socio-emotional support needs as an operationalization of cognitive empathy was assessed with a subscale consisting of three items of the Berlin Social

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[2] In addition, we asked participants to complete a validated four-item-self- report measure of social identification with being German [48]. The mea- sure reflected a strong identification of the respondents wirh being German (M = 3.15, SD = 0.77).

Support Scale (BSSS) [35]. The original scale includes four items. However, one item was removed that reflected the need for nonspecific support and had a low factor loading of 0.26 in the original validation study. The wording was slightly adjusted to reflect the perspective of Germans on refugees. An item example is "When refugees are down, they need someone who boosts their spirits." The items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). In the original study, factor loadings for the three-item scale, excluding the afore-mentioned low factor loading item ranged from 0.46 to 0.54; Cronbach's Alpha was 0.73. In our study, the loadings were between 0.73 and 0.92. Alpha was 0.89.

Attitudes

Positive attitudes toward refugees' rights, which would grant refugees better access to public services such as health care, were assessed using a three-item subscale of Eurobarometer 53 validated by Manzoni [36, 37]. The items were provided with a Likert scale ranging from 1 ("strongly disagree") to 4 ("strongly agree"). An item example is "Naturalization should be eased for refugees with residence." In our study, the loadings ranged from
0.66 to 0.82. Cronbach's Alpha was 0.78.

Awareness

Awareness of information barriers that refugees face in accessing health care was measured using a four-item scale developed by Maier et al. [8] Initially, this scale was develop to assess the perceived information barriers that migrants may encounter when accessing the health care system in Germany. The wording was slightly adjusted to reflect the awareness of Germans for the information barriers that refugees may face. The instruction was "Please estimate the extent to which refugees are familiar with using health services in Germany." The items were provided with a Likert scale ranging from 1 ("not at all") to 4 ("a great deal"). An example of an item is "Refugees don't receive the information they need." Factor loadings originally ranged from 0.63 to 0.76 and Alpha was 0.88. In our study, the loadings ranged from 0.82 to 0.89. Cronbach's Alpha was 0.92.

Statistical analysis

We used Mplus version 8.00 to examine the hypothesized latent associations between the study variables using structural equation modeling (SEM) [38]. Age and gen- der (1 = male, 2 = female), the level of education, and economical status in terms of monthly income were included as covariates in the model.

In a first step, we conducted a multifactorial confirmatory factor analysis (CFA) to evaluate the measurement model and determine the latent correlations among the

study variables (Model 1). We then specified different SEMs with unidirectional paths between the study variables, reflecting the assumptions of the modified EAA- model on the relationships among cognitive empathy, attitudes, awareness of information barriers, and the antecedent of having positive intercultural contact. To examine whether positive intercultural contact displays direct relations with empathy, attitudes, and aware- ness, we computed three different models and gradually increased the number of direct paths from contact to the remaining study variables. Model 1 as the baseline model included direct effects from intercultural contact on cognitive empathy, from empathy on positive attitudes, and from attitudes to awareness of information barriers. In Model 2, we added a direct path from contact on attitudes. In Model 3, we included an additional path from contact on perceived information barriers. Model 1 was tested against Model 2, and Model 2 against Model 3, using the χ^2-difference test [39]. If the test yields a significant result, this indicates that the less restrictive model, which considers an additional path, fits the data better. In the final step, we tested for indirect effects using boot- strapped confidence intervals (boot = 2000). As boot- strapped confidence intervals are not available with MLR estimation, we used the confidence intervals from an analogous model with ML estimation.

The Satorra-Bentler method for model estimations was used for all analyses. This approach yields maximum like- lihood parameter (MLR) estimates and a mean-adjusted χ^2 value that is robust to violations of normality of item distributions [38]. Model fit was estimated using primary fit indices as recommended by Hu and Bentler: The Chi- Square Test of Model Fit (χ^2), the Root Mean Square Error of Approximation (RMSEA) including 90% confidence intervals, the Comparative Fit Index (CFI), the Tucker-Lewis Index (TLI), and the Standardized Root Mean Square Residuals (SRMR) [40]. For the CFI and the TLI, a value close to 1 represents excellent model fit, and a value > 0.95/0.90 a good/acceptable model fit. For the SRMR and RMSEA, a value close to 0 denotes a perfect model fit, while values ≤ 0.06/0.08 are good/acceptable [6, 40].

Results
Preliminary analysis

Multifactorial CFA was performed to evaluate the measurement model and to determine latent correlations among study variables. Indices for the original model showed a good fit (χ^2 = 196.014, df = 95, p < .0001, CFI = 0.986, TLI = 0.980, RMSEA = 0.034, CIs (0.027-
0.041), SRMR = 0.023). Factor loadings for having positive intercultural contact ranged from 0.86 to 0.90, for recognizing socio-emotional support needs from 0.75 to 0.93, for acknowledging refugees' rights from 0.66 to 0.83,

Table 1 Latent correlations of the study variables

Constructs	M	SD	1	2	3	4
1. Positive intercultural contact			-	0.64**	0.66**	0.39**
2. Recognition of socio-emotional support needs of refugees				-	0.72**	0.58**
3. Positive attitudes toward refugees' rights					-	0.62**
4. Awareness of refugees' information barriers						-

N = 910; **p ≤ .01.

and for perceiving information barriers of refugees from 0.83 to 0.89. When latent correlations were screened, the hypothesized patterns were largely confirmed (see Table 1). In addition, the correlations between the latent constructs and the demographic covariates of age, gen- der, education level, and economic status were examined. Educational level was positively associated with all four variables, meaning that higher education was related to more positive intercul-tural contact (ß = 0.22, p < .001), better recognition of so-cio-emotional support needs (ß

= 0.18, p < .001), greater acknowledgement of refugees' rights (ß = 0.23, p < .001), and to greater perceived infor-mation barriers (ß = 0.15; p < .001). Older participants re-ported more positive contact (ß = 0.08; p = .03), better recognition of socio-emotional support needs (ß = 0.12; p < .001), yet a lower perception of information barriers for refugees regarding access to health services (ß = − 0.10; p = .002). Gender was only associated with aware-ness of information barriers, with men perceiving more bar-riers (ß = − 0.10; p = .002), while economic status showed no associations with the model variables.

Relations among positive contact, empathy, positive atti-tudes, and awareness of barriers

In a second step, SEMs with unidirectional paths were specified to control for variance overlap between the measures and to determine the unilateral latent relations between the variables. To determine the patterns of asso-ciation between positive intercultural contact and the other study variables, three versions of the SEM were computed and compared. Apart from the unidirectional pathways be-tween cognitive empathy, positive attitudes, and awareness of refugees' information barriers, Model 1 included a direct path from positive intercultural contact on cognitive empa-thy (all paths are marked "1", as shown in Fig. 2). For Models 2 and 3, we added direct pathways from positive intercul-tural contact to attitudes, and to awareness of information barriers, respectively (marked with "2" in Model 2, and with "3" in Model 3; see Fig. 2).

For Model 1, fit indices again reflected good fit (Hu & Bentler, 2004) ($\chi2$ = 260.676*; df = 97; CFI = 0.977; TLI = 0.969; RMSEA = 0.043; SRMR = 0.036) [40]. Results indicate that more positive intercultural contact was related to greater recognition of refugees' socio-emotional support needs (β = 0.63, p < .001), which in turn was related to more positive attitudes toward refugees' rights

Table 2 Results of the $\chi2$-Difference-Test

Comparison	Scaled x2	df	p-value
Model 1 and 2	43,78644999	1	0.000
Model 2 and 3	9,701371573	1	0.002

(β = 0.72, p < .001), and greater perceived information bar-riers (β = 0.31, p < .001). More positive attitudes toward refugees' rights were also associated with perceiving greater information barriers (β = 0.41, p < .001). Adding the pathway of positive intercultural contact to attitudes in Model 2 improved the model fit ($\chi2$ = 205.159*; df = 96; CFI = 0.985; TLI = 0.979; RMSEA = 0.035; SRMR = 0.028; see Table 2 for model comparisons) indicating that direct en-hancing effects of positive intercultural contact on cog-nitive empathy and positive attitudes toward refugees' rights can be supported. Model 3 showed the best model fit ($\chi2$ = 196.363*; df = 95; CFI = 0.986; TLI = 0.981; RMSEA = 0.034; SRMR = 0.024; for model comparisons, see Table 2) indicating that having positive contact with people of different cultural background serves as a direct positive antecedent of Germans' cognitive empathy, positive atti-tudes toward refugees' rights, and awareness of infor-mation barriers (see Fig. 2).

In terms of covariates, we found gender (ß = − 0.09, p = .002) to be negatively associated with awareness of infor-mation barriers, implying that men perceived fewer infor-mation barriers than women did. With increasing age, par-ticipants also expressed a smaller awareness of information barriers (ß = − 0.17, p < .001). However, age (ß = 0.09, p = .002; ß = 0.12, p < .001) and education level (ß = 0.07, p = .03; ß = 0.24, p < .001) showed positive associations with cognitive empathy and positive intercultural contact. Eco-nomic status was again unrelated to the study variables.

Indirect effects

Testing for indirect effects using bias-corrected boot- strap-ping revealed the following significant paths: having positive intercultural contact had an indirect reinforcing effect on awareness of refugees' information barriers via recognizing their socio-emotional support needs (b = 0.22, p < .001, CIlower = 0.12 CIupper = 0.32, SE = 0.04, CR = 5.796), via positive attitudes toward refugees' rights (b = 0.16, p < .001, CIlower = 0.09, CIupper = 0.24, SE = 0.03, CR = 5.251), and via the two aforementioned
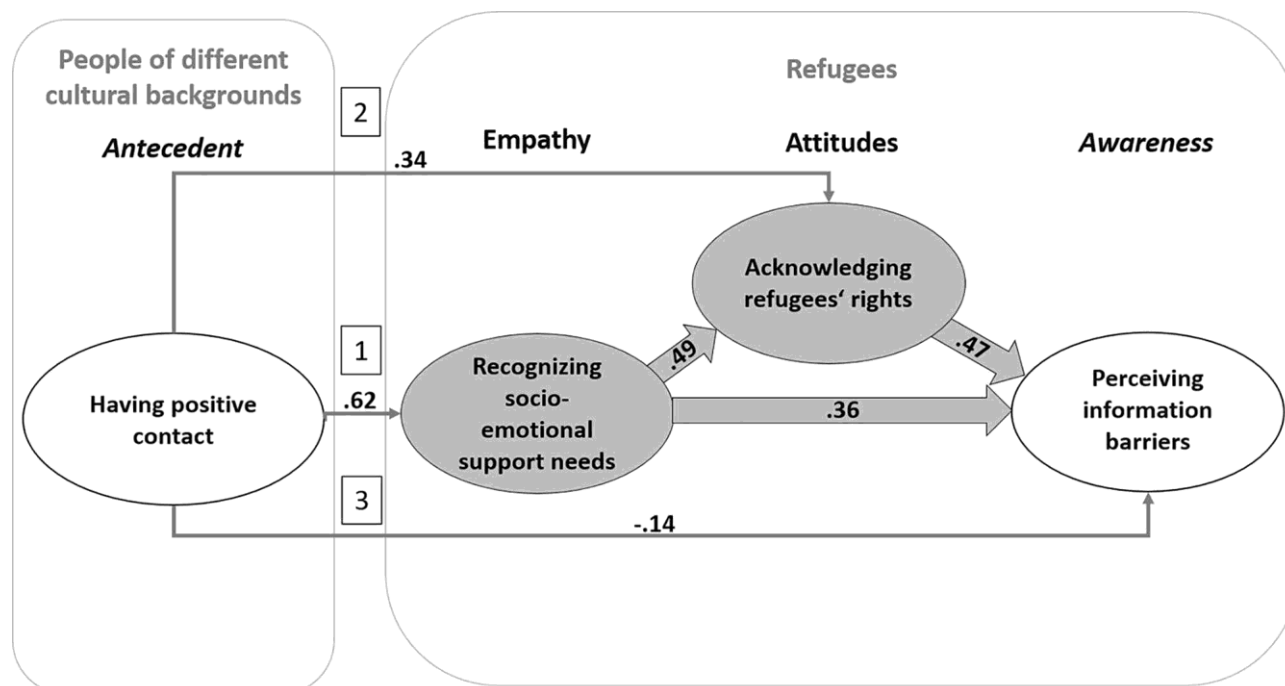
Fig. 2 Final model with latent relations between the study variables. Note: Numbers in squares mark the added paths in model 1, model 2, and model 3

variables (b = 0.14, p < .001, CIlower = 0.09, CIupper = 0.22, SE = 0.03, CR = 5.430).

Discussion

The results of our study on Germans' perception of information barriers of refugees regarding health services are consistent with assumptions of the EAA-model and pre- vious research [13, 14]. We found that Germans' recognition of refugees' emotional support needs is positively associated with the perception of refugees' information barriers, both directly and indirectly through acknowledging refugees' rights (e.g., regarding residence). These findings confirm our first hypothesis, which states that Germans' cognitive empathy toward refugees is associated with more positive attitudes and a greater aware- ness of refugees' difficulties in accessing health care. Our second hypothesis was partly confirmed. We found that having more positive contact with people from different cultural backgrounds was associated with greater cognitive empathy toward refugees and with more positive attitudes toward refugees. However, having positive con- tact had a slightly direct negative effect on the perception of refugees' information barriers to accessing health care, although indirect effects - via recognition of refugees' emotional support needs and acknowledging their rights– were positive.

The positive associations between positive contact, positive attitudes, and awareness of information barriers corroborate previous research [13, 15, 29–31], demonstrating that prior positive experiences with people of

socio-culturally diverse backgrounds improve empathy, attitudes, and awareness toward other socio-culturally outgroups and/or other ethnic outgroups. While previous research mainly concentrated on children and adolescents [17, 20], our study extended the empirical evidence to adults.

The negative direct effect of positive contact on perceiving refugees' information barriers occurred contrary to our expectations, especially considering its positive indirect effects via empathy and positive attitudes. This pattern implies that Germans who report having more positive contact with culturally diverse people perceive fewer difficulties in refugees' access to information about health services in Germany, when controlling for cognitive empathy and positive attitudes toward refugees. At first glance, these findings seem to contradict previous study results that found positive intercultural contact to directly increase the motivation to act in a helpful manner [18, 31]. On second glance, however, the underlying processes may be more complex and require consideration of the interplay of all key constructs at once. Hence, having positive contact alone may not be sufficient, but must fall on fertile ground in terms of an interaction between personal characteristics and specific envi- ron- mental features in order to enhance Germans' awareness for information barriers that refugees face. The formation of empathy, and the formation of a positive attitude to- ward refugees, may constitute a prerequisite to trans- late positive intercultural contact into an increased sensitivity to refugees' difficulties in accessing information

regarding health services. Following this line of reasoning, having positive contact with culturally diverse people may increase Germans' awareness of refugees' information barriers if Germans recognize refugees' emotional support needs and/or if they are more willing to acknowledge refugees' rights (e.g., residence rights or the right to access full health care). Alternative interpretations could be that Germans who have had positive contacts in intercultural situations do not see the barriers in access to information, but in other areas they have experienced as a result of their contact experiences [12, 20]. They might also overestimate the information refugees already receive from caregivers or institutions, which may be overly optimistic, compared with the reality many refugees face regarding health services in Germany. Overall, our study provides new empirical evidence for the validity of the EAA-model for the intercultural context of Germans thinking about the target group of refugees by including and differentiating the effects of positive contact with people from a different cultural background and focusing on problem awareness as a prerequisite for prosocial actions.

Strengths and limitations

This study has several strengths. With its focus on Germany as a receiving society and Germans' perception of refugees' information barriers to health services, it contributes to international research on empathy and pro- social action in the important intercultural context of flight. To our knowledge, it is the first study to examine the relationships between positive contact in intercultural settings, empathy, positive attitudes toward refugees, and awareness of their information barriers with a sample of German adults using structural equation modeling at a latent level. The number of studies examining the assumptions of the EAA-model in the context of refugees and members of the receiving society is small and research on awareness in the process of empathy and helping actions has been scarce [13, 15]. Furthermore, research to date has mostly focused on children or adolescents as the target group [15, 17, 20]. Our study therefore extends the limited empirical evidence that the assumptions of the EAA-model may also apply to adults.

However, some methodological limitations need to be considered. In this study, we could not examine causality between the study variables, due to the cross-sectional design of the study. Additionally, one could argue that the study's reliance on self-reports limits its power. Rather than revealing actual differences, participants may have differed in their ability and willingness to report intensity levels on the study variables [41]. However, we were particularly interested in participants' views because intercultural experiences, perceived needs, and attitudes are essentially subjective in nature. We therefore decided

to focus on validated, well-established self-assessment instruments in the present study [6].

Refugees represent a very heterogeneous group in terms of their socio-cultural background. For future studies, we therefore recommend to survey empathy, attitudes and awareness as core constructs in relation to specific refugee groups in order to identify possible differences. Such differentiation might help to understand, why members of the receiving societies report little contact with refugees, and thus low awareness for refugees' access barrier.

Because the focus of the present study is on the interplay of empathy and attitudes with the antecedent of positive contact on the one hand and problem awareness as a prerequisite for prosocial actions on the other, we decided not to examine prosocial action to ensure clarity of the study design. However, it is desirable to examine the entire process in future research and to test the effect of positive intercultural contact on prosocial action as well.

Future directions and conclusion

Since positive contact with people from different cultural backgrounds is related to greater cognitive empathy and more positive attitudes toward refugees among Germans, this important predictor should be further researched and developed in theory and practice. The role of empathy and positive attitudes as mediators between positive contact and the awareness of information barriers of refugees suggests that these predictors need to be addressed simultaneously to improve refugees' access to health services. Future research should therefore examine the mechanisms of action in more detail to explore the opportunities that positive contact in intercultural settings can provide to promote attitude change toward refugees and raise awareness of obstacles that outgroups are facing when trying to participate in society. As our study has shown, the interplay between environmental factors such as contact experiences and person-centered factors such as cognitive empathy is complex and deserves further exploration.

Legislation on health care for refugees in Germany is complex and extensive as it varies depending on the legal status of the refugee and differs depending on federal state laws and assumed urgency of the treatments. Relevant information, e.g. about what steps are necessary to obtain treatment or which treatments are covered in the area under the Asylum seekers benefit act often do not reach refugees sufficiently [8, 10, 42, 43]. However, good health is an important factor for social inclusion and thus for the German society as a whole [44]. German laypeople could be important supporters if they become aware of refugees emotional and informational struggles in the process of getting health care. By educating

Germans about the current legal situation regarding refugees' access to health services and the barriers refugees face when trying to get access, Germans may recognize the refugees' needs regarding emotional support in the form of consolidation and they may be more willing to acknowledge refugees' rights, for example, regarding their residency and accompanied health care. Media outlets such as public service broadcasting could play an important role in the education process by bringing facts about refugees' access to health care and related struggles to a wider audience [14, 45]. Moderated social media talks about the topic, including experts and, more importantly, refugees that are affected by the lack of information on health care services could reach even more Germans. This form of campaigns could foster Germans' empathy, more positive attitudes toward refugees and raise awareness for their access struggles [14]. Awareness of the problem and subsequent actions by general members of the receiving community (e.g. by giving a refugee information on necessary documents or addressing the issue politically) could help make health care information more accessible to refugees and would be a critical step toward a healthier society that recognizes the needs of all who live in it.

However, German lay people can only be a supporting factor but cannot replace a fast and easily accessible German health care system. The structural and legal barriers refugees face in accessing health services need to be further explored and the resulting implications put into practice. We recommend that future research directly assess the views of health care practitioners and employees from relevant administrative institutions (federal offices, immigrant authorities etc.) regarding the relationships between empathy, attitudes, and prior inter- cultural contact experiences. Health care practitioners within the relevant institutions may reflect societal perceptions and attitudes toward refugees on the one hand, but on the other hand may be very different because of the underlying ethics of their field to support people in need [11, 12]. Knowledge about their perspective on refugees and potential antecedents can give us clues on how to raise awareness and promote a change of attitudes toward displaced people from within the institutions to give refugees better access to the information they need in order to heal.

Abbreviations

BSSS	Berlin Social Support Scales
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
EAA	Empathy-Attitude-Action
MLR	Maximum Likelihood Parameter
SD	Standard Deviation
SEM	Structural Equation Modeling
SRMR	Standardized Root Mean Square Residuals
RMSEA	Root Mean Square Error of Approximation
TLI	Tucker-Lewis Index
UN	United Nations
UNHCR	United Nations High Commissioner for Refugees

Declarations

Ethics approval and consent to participate
We confirm that all methods were carried out in accordance with relevant guidelines and regulations. Ethics approval has been provided by the Institutional Review Board and all relevant administrative units of the Merseburg University of Applied Sciences, where SS and TR were affiliated at the time. When participating in the survey, participants provided written informed consent.

Consent for publication
Not applicable.

Competing interests
The authors report there are no competing interests to declare.

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Curriculum Vitae (Lebenslauf)

Mein Lebenslauf wird aus datenschutzrechtlichen Gründen in der elektronischen Version meiner Arbeit nicht veröffentlicht.

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List of Publications

1. Schubert S, Ringeisen T. Stressbewältigung im Kulturvergleich. In: Ringeisen T, Genkova P, Leong F. (eds) Handbuch Stress und Kultur. 2020; Springer, Wiesbaden. doi:10.1007/978-3-658-27825-0_20-1

2. Ringeisen T, Genkova P, Schubert S. Kultur und interkulturelle Kompetenz: Konzeptualisierung aus psychologischer Perspektive. In: Genkova, P., Ringeisen, T. (eds) Handbuch Diversity Kompetenz: Gegenstandsbereiche. 2015; Springer Reference Psychologie . Springer, Wiesbaden. doi:10.1007/978-3-658-08932-0_48-1

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4. Ringeisen T, Mahat-Shamir M, Ben-Ezra M, Hamama-Raz Y, Schubert S. Krank durch beidseitige Fremdheitserfahrung? Zur Rolle von Stressoren und Einstellungen für die Gesundheit von Einheimischen und Geflüchteten. In: Genkova P, Riecken A. (eds) Handbuch Migration und Erfolg. 2020; Springer, Wiesbaden. doi:10.1007/978-3-658-18236-6_5

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