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Migration and Mental Health –
the role of child maltreatment, recalled parental rearing behavior and acculturation: results from representative samples

Migration und Psychische Gesundheit –
Die Rolle von Kindheitsbelastungen, Erinnertem Elterlichen Erziehungsverhalten und Akkulturation: Ergebnisse aus repräsentativen Stichproben

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Abbreviations

CTQ	Childhood Trauma Questionnaire
DSM	Diagnostic and Statistical Manual of Mental Disorders
EP	Externalizing Problems
FEE	Recalled Parental Rearing Behavior Questionnaire (Fragebogen zum Erinnerten Elterlichen Erziehungsverhalten)
ICC/ESOMAR	International Chamber of Commerce/ European Society for Opinion and Market Research
ICD	International Classification of Diseases
IP	Internalizing Problems
GCP	Good Clinical Practice
GHS	Gutenberg-Health Study
PHQ	Patient Health Questionnaire
REP	Representative Survey
SDQ	Strengths and Difficulties Questionnaire

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„Alle Migranten haben dieselbe Grundgeschichte zu erzählen: zunächst ein kleines Sterben, wenn sie ihre Heimat verlassen, dann kurzlebige Euphorie, wenn es so aussieht, als wäre ihnen die Chance geschenkt worden, ihr Lebensmanuskript in einer freien Gesellschaft umzuschreiben, und dann lebenslange Traurigkeit, sobald ihnen klar wird, daß sie die unwiderrufliche Wahl getroffen haben, sich von ihren Wurzeln abzuschneiden. Sie können erfolgreich wirken und ein aufregendes Leben führen – aber sie werden sich immer wie Bürger zweiter Klasse fühlen, ganz gleich wo sie sind. Und diese immense innere Leere werden sie nie im Leben ausfüllen können."

Elena Lappin in „Fremde Bräute" (S. 32-33)[1]

„Jede Einwanderungsbiographie hat[te] einen Bruch."

Emilia Smechowski in "Wir Strebermigranten" (S. 177)

[1] Es handelt sich um ein Originalzitat. Auf die Quelle aufmerksam geworden durch Machleidt (2007)

1 General Introduction

With the highest number of immigrants and refugees since World War II, migration has become one of the most burning issues in society, politics and public health throughout Europe (WHO, 2016). According to the International Migration Report 2017 published by the United Nations (United Nations, 2018), the number of international immigrants worldwide has grown rapidly. In 2018 one in four people in Germany had a migration background (Statistisches Bundesamt, 2019). In consequence of specific vulnerabilities related to migration, the number of immigrants seeking psychotherapeutic, psychiatric and psychosomatic treatment has substantially increased over the last years (Graef-Calliess et al., 2019).

Migration is a universal, continuing and world-wide phenomenon in human history (Bhugra, 2004). Despite wide variation, migratory processes are nearly always accompanied by various changes across different life domains such as living conditions, cultural practices, and family constellation. The adaptation to a new social and cultural environment can be a stimulating experience providing the opportunity for a better life, but it can also be perceived as stressful and challenging. Hence, migration has been portrayed as both a chance and a risk for individuals and societies (cf. Berry et al., 2006).

The experience of migration causes life-impacting changes in one's self narrative like hardly any other life event. In the migration process, the immigrant faces the challenge to translate herself into the cultural scripts of a new society, to which the person herself and her cultural habits might be perceived as different, unknown, and even threatening (Banerjee et al., in preparation). Halperin (2004) succinctly summarized that "immigration challenges the stability of the individual's psychic structure and family organization and it has significant transgenerational implications" (p. 99). Given the manifold psychosocial consequences of migration, the investigation of immigrants' mental health and its determinants have been a major area of research within the field of social and transcultural psychiatry. According to the World Health Organization (2018), immigrants are exposed to an increased vulnerability of developing mental illnesses compared to non-immigrants, albeit the results of prevalence rates are inconsistent. The majority of studies investigated the association between post-migration stressors and immigrants' mental health. However, scarce attention has been paid to the impact of pre-migration experiences. Studies exploring general risk factors like adverse childhood experiences and the association with the current mental health status of adult immigrants are lacking. Whereas research in transcultural psychiatry have neglected to study early childhood experiences, research

on parenting and child maltreatment lacks the explicit investigation of immigration status. Applying a life course perspective, therefore, the main purpose of the current study was to combine both perspectives to broaden the understanding of immigrants' mental health status who live in Germany. In order to explore more universal factors of early childhood experiences in immigrant populations, in two population-based studies *child maltreatment* and *recalled parental rearing behavior* were assessed. Similarities and differences compared to non-immigrants and the association with depression and anxiety were examined. Broadening the age range, the third study investigated in immigrant youth how *acculturation strategies* were related to mental health while also comparing girls and boys.

The current work has been organized in the following way: After presenting a general theoretical background including different psychological models of migration, an overview of epidemiological research exploring immigrant's mental health status is provided, followed by the introduction of the manifold determinants associated with immigrant's mental health (chapter 2). The main chapters present the conducted empirical studies. Chapter 3 includes the study *"Prevalence rates of child maltreatment among 1st generation immigrants, 2nd generation immigrants and non-immigrants– results from a representative German population-based study"*, followed by chapter 4 with the study *„The association between recalled parental rearing behavior and depressiveness: a comparison between 1st immigrants and non- immigrants in the population-based Gutenberg Health Study"*. Chapter 5 is dedicated to the study *„The relationship between acculturation and mental health of 1st generation immigrant youth – does sex matter?"*. Chapter 6 concludes with the general discussion giving an overview of the main results in light of an evaluation from memory-related, sociocultural-historical and psychoanalytical perspectives. For illustrating reasons, a brief excursion to the life narratives is made by presenting Emilia Smechowski's novel "Wir Strebermigranten". After that, the clinical implications which have arisen from the findings and an appraisal of the study's limitations are presented. The last chapter closes with an outlook on future research highlighting the relevance of childhood experiences in immigrant mental health literature.

2 Theoretical background

2.1 Migration in Germany

According to Bhugra (2004) migration refers to the "change in the location of residence" (p. 243). International migration implies crossing national borders, whereas internal migration ("Binnenmigration") occurs within one country (Sieben & Straub, 2018)[2]. In Germany the proportion of immigrants has increased to 23 % of the total population with a growing tendency (Statistisches Bundesamt, 2019). In other words, in 2018 approximately 20.8 million people living in Germany had a history of migration. For immigrant youth under 18 years, the percentage is even higher with 36 %. Immigration is a substantial driver for population growth (Alegría et al., 2017). Regarding the country of origin, the highest numbers of immigrants came from Turkey (2.769.000), Poland (2.253.000), Russian Federation (1.366.000), Romania (965.000), and Italy (868.000; cf. Statistisches Bundesamt, 2019). Hence, immigrants in Germany constitute a heterogeneous group not only in regard of their origin but also of their status (e.g. labor immigrants, asylum seekers) and their motives to migrate. In migration literature, the motives for migration are differentiated between push and pull factors (Sieben & Straub, 2018).

Considering the historical context, different immigration movements to Germany have occurred in the last 50 years due to socio-political and economic changes (Kizilhan, 2018). After World War II, during the economic growth in the 1950s and 1960s, workers from southern European countries seeking work were recruited through governmental agreements with Italy (1955), Greece (1960), Spain (1960), Turkey (1961), Portugal (1964), and Yugoslavia (1968). The so-called "guest workers" ("Gastarbeiter") were mostly poorly educated and were intended to return to their country of origin after a certain period of time (see Morawa & Erim, 2014a). However, in many cases their family members moved to Germany for the purpose of family reunification. In the 1990s, after the dissolution of the Soviet Union, the so-called "Spätaussiedler" re-migrated to Germany. "Spätaussiedler" belonged to a German minority who had been living in the former Soviet Union and other former eastern bloc states. The enlargement of the European Union in 2004 and 2007 influenced immigration within the European Union. More recently, in 2015 refugees and asylum seekers sought protection in Germany from political persecution and violence. As refugees and asylum seekers have mainly been

[2] The current work's target population are people who immigrated from another country to Germany (1st generation immigrants) and their offspring (2nd generation immigrants). Therefore, the term *immigrant* will be used in order to indicate international migration (vs. national migration).

forced to leave their home country, they represent a distinct group who differs from other immigrant groups (Kizilhan, 2018). The majority of asylum seekers came from Syria and the Arab Republic (35.9 %), Albania (12.2 %), Kosovo (7.6 %), Afghanistan (7.1 %), Iraq (6.7 %), Serbia (3.8 %), and Eritrea (2.5 %; BAMF, 2015).

2.2 Psychological models of migration

The affective, cognitive and behavioral components resulting from changes and burdens within the complex migration process are termed the *psychology of migration* (Kizilhan, 2018). Despite the enormous heterogeneity among immigrants, psychological models of migration have been suggested to describe and identify specific characteristics which are similar within the experience of cross-cultural transition (Sieben & Straub, 2018). Most approaches conceptualize migration as a stressful life event and even traumatic, but also emphasizing the potential of migration for personal development. Although in variable extent, all psychological models underscored that the experience of migration is greatly determined by contextual factors such as societal, political and historical conditions.

2.2.1 Critical life event

Applying a stress and coping approach, migration is considered as a *critical life event* (Kirkcaldy et al., 2006). In contrast to age-normative development tasks, critical life events are not related to age, their occurrence is less probable and they only affect certain people (Filipp, 2001). Critical life events are potentially threatening challenges which activate the individual's coping mechanisms in order to maintain psychological functioning. As a result, different developmental outcomes can occur: psychological growth, return to the functional level before the event, or psychological, respectively physical dysfunction (Filipp, 2001). From this perspective, the migration experience imposes considerable demands on the individual to adjust to an unfamiliar environment. These adaptions and learning processes can exceed the individual's coping capacities causing stress, which in turn increases the vulnerability for mental disorders. In contrast, managing to cope with the migration-related stressors offers the opportunity of personal growth.

2.2.2 Acculturation model

Berry's (1997) model of acculturation and adaptation is an established and broadly applied concept with enormous influence on theory and research in cross-cultural psychology. Psychological acculturation describes the process of cultural and psychological changes while adapting

to a new cultural environment after migration. In particular, the encounter between the immigrated person and members of the larger society represents a key aspect in the transformation of behavior, values and attitudes. Acculturation takes place both at the individual and the societal level (Berry et al., 2002) interacting with each other (Demiralay & Aichberger, 2018). Hence, the process and the outcome of acculturation are highly variable and dynamic for the individual and society as whole. However, research and the public debate about integration have paid more attention to personal changes of immigrants compared to changes in the larger society resulting from the intercultural contact (Sonnenberg & Titzmann, 2020).

Berry (1997, 2002) proposed two distinct dimensions underlying the psychological acculturation process: maintenance of the heritage culture and maintenance of the host culture. According to the bi-dimensional approach, four acculturation strategies can be distinguished (Figure II- 1): integration, assimilation, separation, and marginalization. *Integration* describes a strong involvement in both the culture of origin and the host culture. Intergroup relations to members of the larger society as well as to members from the original culture are endorsed. *Assimilation* refers to a strong orientation towards people, habits and practices of the receiving culture combined with low maintenance of the heritage culture. In contrast, *separation* is characterized by strong maintenance of the heritage culture and limited intercultural contact to the host society. *Marginalization* is defined by low involvement in both cultures neither valuing intergroup contact nor cultural maintenance.

		Is it considered to be of value to maintain one's identity and characteristics?	
		yes	no
Is it considered to be of value to maintain relationships with larger society?	yes	**Integration**	**Assimilation**
	no	**Separation**	**Marginalization**

Figure II- 1. Acculturation strategies according to Berry (1997).

Acculturation strategies and the prediction of acculturative stress within the acculturation framework have been an object of interest in mental health research (see section 2.4.3 and chapter 5). The term *acculturative stress* was introduced as an alternative term for *culture shock*, and refers to a stress reaction in response to conflicts resulting from intercultural contact (Berry, 1997; Berry et al., 2002). In other words, acculturative stress can occur when the challenges within the acculturation process exceed one's capacity to cope with them.

Adaptation describes the long-term aspect of acculturation. In the literature, two interrelated but conceptually distinct facets have been proposed: psychological and sociocultural adaptation (Berry et al., 2002; Ward & Rana-Deuba, 1999). Psychological adaptation entails affective components referring to emotional well-being, mental health, and life satisfaction. Sociocultural adaptation comprises cognitive components referring to learning skills and abilities in the intercultural encounter based on a social learning paradigm (Ward & Rana-Deuba, 1999).

2.2.3 Phase models

Many authors have highlighted the processual and dynamic character of the migratory experience. Bhugra (2004) described four stages with distinct stressors occurring in each phase. The *pre-migration phase* is characterized by the decision and by preparations to migrate. For example, in this phase the loss of the familiar social network can be a significant stressor. Other stressors in this stage differs tremendously depending on the reason for migration and whether the migration is voluntary or forced. Further, psychological, social and biological vulnerabilities are pivotal factors at the level of pre-migration. The *phase of the migration* itself follows, namely the physical movement from one place to another. The *post-migration phase* describes the process of adjusting to a new sociocultural environment. In the fourth stage the immigrant might be confronted with stressors such as poorer living conditions and discrimination experiences in the receiving society.

After the *preparatory stage* and the *act of migration*, Sluzki (1979) has described three stages. The different stages in the migration process, however, are not necessarily linear and are profoundly influenced by contextual factors (Kizilhan, 2018) such as grade of multiculturalism in the majority country and the larger population's acculturation attitudes. According to Sluzki (1979), in the *period of overcompensation*, the individual is occupied with maintaining psychosocial functioning in daily life and endeavors to adapt to the new sociocultural context. For this purpose, inconsistencies and discomfort are denied. The *period of decompensation* is characterized by reshaping new realities and maintaining "continuity in terms of identify and its comparability with the environment" which might be competing with each other (Sluzki, 1979, p. 7-8). As this internal transformation likely involves conflicts and ambivalence, the vulnerability for psychopathology increases in this stage. The last phase describes *transgenerational* adjustment and integration. Machleidt and Heinz (2018) extended Sluzki's psychological stages of the migratory process by elaborating the affective components occurring in each stage which follow a cyclical nature ("Emotionslogik im Migrationsprozess"; p. 35). According to the authors the experience of migration contains complex and ambivalent emotions like pleasure and curiosity about the novel, but also anxiety about and defense of the unfamiliar. Mourning and

sorrow, for instance at the loss of the familiar network, play a pivotal role at the affective level. Assuming an overlap between challenges of migration with developmental tasks in adolescence, the authors proposed the metaphor of *cultural adolescence* ("kulturelle Adoleszenz", p. 35) to describe the process of migration and the involved intrapsychic transformation. For instance, adolescents in puberty have to deal with the developmental task to detach from parental figures, seek new relationships, establish a stable identity and to find her or his role in society. Analogously, immigrants are confronted with leaving the society they originated from and bonding to unfamiliar people while finding their place in the new community. They further face the challenge to integrate values and norms of the country of origin and those of the larger society into their (bicultural) self-concept. Like in adolescence, the occurrence of distress symptoms is more likely in a vulnerable phase of identity formation. However, the authors also used the metaphor to highlight the dynamic character and the maturing aspect of migration, just as this is the case for adolescence.

2.2.4 Psychoanalytic models

Within a psychoanalytic framework, migration is conceptualized as *trauma*. From a psychoanalytic perspective, a traumatic event endangers the psychic capacity of the ego which "provides a minimal sense of safety and integrative intactness. It results in overwhelming anxiety or helplessness, and produces an enduring change in the psychic organization." (Cooper, 1986, p. 44). It is important to note that the term trauma in psychoanalysis is not identical with its use in DSM-5 and ICD. Following the psychoanalytic definition, migration represents a cumulative trauma with profound and lasting consequences (Grinberg & Grinberg, 1984; Sieben & Straub, 2018). According to Grinberg and Grinberg (1984) the migratory process entails intense sorrow, fear of the unknown and strong feelings of helplessness. Although substantially varying in magnitude, duration and origin, anxieties of different qualities such as separation anxiety and/or superego anxiety due to conflicting societal norms appear in the migration process. Due to the loss of first objects, lost parts of the self and the native culture, migration activates a painful process of mourning (Kürsat-Ahlers, 1995 as cited in Gavrandidou, 2006; Machleidt & Heinz, 2018; Sieben & Straub, 2018). Besides the prevailing feeling of mourning people and places, Ainslie et al. (2013) point to the mourning for culture itself termed as "cultural mourning" (p. 665). In consequence, a "state of disorganization" (Grinberg & Grinberg, 1984, p. 28) usually emerges after migration. Defending against these overwhelming feelings of psychic pain and distortion, different (unconscious) mechanisms can emerge: Immigrants might react with "manic overadaptation" (Grinberg & Grinberg, 1984, p. 27) while denying the sorrow by an immediate, contra-phobic adoption of the new environment' habits and norms (Machleidt &

Heinz, 2018). A contrasting attempt to neutralize painful feelings is the idealization of the country of origin which can be expressed by solely adhering to norms and practices of the origin culture, possibly accompanied by (regressive) isolation, for instance in a separated residential neighborhood. In more extreme intensity, the idealization of people within the familiar culture context and the simultaneous devaluation of the members of the receiving country, and contrariwise, can be understood as *splitting* (Machleidt & Heinz, 2018). Due to a gradual, demanding process of working through the feelings of mourning ("sorrow of the lost world"; Grinberg & Grinberg, 1984, p. 37), integrating denied and split emotions and internalizing new relations with good objects, a matured self-concept can emerge (Kürsat-Ahlers, 1995 as cited in Gavrandidou, 2006). For a successful integration, the interaction with people of the receiving country and their capacity to deal with the "alien" (cf. Machleidt & Heinz, 2018) play a pivotal role. Concluding with Grinberg and Grinberg's (1984) words: "Migration constitutes a catastrophic change to the extent that certain structures are transformed into others through a series of modifications and through moments of disorganization, pain, and frustration. Once these moments have been worked through and overcome, the possibility of true growth and enriched development of the personality will arise." (p. 35).

2.3 Migration and mental health

Extensive research has dealt with the question whether immigrants are more likely to suffer from a mental disorder compared to the general population. Literature on this research question has provided two hypotheses, namely the *migration morbidity* hypothesis and *immigrant paradox* hypothesis (Dimitrova et al., 2016). According to the migration morbidity approach, immigrations show worse psychological adjustment such as reduced mental well-being compared to the majority population, whereas the immigrant paradox hypothesis proposes better health outcomes among immigrants despite the socio-economic disadvantage they often face. In context of the immigrant paradox, researchers have argued that resilient and healthy people more likely migrate explaining their higher initial well-being in the receiving country, the so-called *healthy migrant effect* (Razum & Twardella, 2002). Empirically, the results of epidemiological studies exploring the prevalence of mental distress among different immigrant groups compared to the host society, however, are still scarce and partially contradictory. The lack of epidemiological data is especially the case for the German immigrant health literature (Mösko et al., 2018; Schouler-Ocak et al., 2015), in contrast to traditional immigrant countries such as the US and Canada providing most of the relevant research (cf. Dimitrova et al., 2016). Given the help-seeking bias in clinical samples, population-based data, however, is required to determine

prevalence rates of mental disorder among immigrants. Accordingly, this knowledge is necessary to specify the demand for psychotherapeutic treatment.

The next section gives an overview of the scattered evidence of epidemiology research on immigrants' mental health focusing on studies conducted in Germany. Findings are presented both for adult and adolescent immigrants. Further, the presented findings are narrowed to studies investigating depression and anxiety disorders as targeted endpoints. Depression and anxiety disorders belong to the most prevalent psychiatric disorders worldwide (World Health Organization, 2017) and the empirical studies of the current work explore depression and anxiety as outcome variable[3].

2.3.1 Epidemiology: Immigrant adults

According to the World Health Organization (2018), immigrants tend to show higher prevalence of depression and anxiety than non-immigrants. However, research investigating the relation between immigration status and depression, respectively anxiety disorders is inconsistent. In a population-based sample of 271 immigrants, Glaesmer et al. (2009) found no differences between immigrants and the German host society regarding symptoms of depression and general anxiety disorder. Based on a reanalysis of the German Health Survey, however, significantly higher 4-week, 12-month and lifetime prevalence rates of mental disorders were found for immigrants compared to the German population (Bermejo et al., 2010). After adjusting for age, sex and socioeconomic status, the difference was highest in affective disorders (4-week prevalence: 11.7 vs. 5.8 %; 12-month prevalence: 17.9 vs. 11.3 %; lifetime prevalence: 24.9 vs. 18.2 %). In an European Social Survey among immigrants aged 25 to 65 years across 21 countries, Gkiouleka et al. (2018) found that immigrants in Germany reported significantly higher rates of depressive symptoms than non-immigrants. Hence, this finding replicated those of a former study based on an European Social Survey revealing higher levels of depressive symptoms among immigrants (Missinne & Bracke, 2012). Likewise, in a cross-national, household panel survey across 11 European countries with 28,517 participants aged over 50 years, 1st generation immigrants showed moderately higher depression scores (OR: 1.42; 95% CI 1.28–1.59) than non-immigrants after controlling for confounding variables (Aichberger et al., 2010).

Lindert et al. (2009) concluded from their meta-analysis that the combined prevalence rates for depression among labor migrants were 20 percent, respectively 21 percent for anxiety. In a meta-analysis by Swinnen and Selten (2007), no conclusive evidence for increased risk of mood

[3] with expectation of chapter 3 which also explored externalizing problems

disorders among immigrants emerged despite slightly higher odds ratios. The inconclusive findings of the meta- analysis point to the difficulty to synthesize study findings due to high heterogeneity of the results (Lindert et al., 2009). Attempting to reduce this heterogeneity, Risch et al. (2012) included only studies using clinical structured interviews in population-based samples. In accordance with the prior meta-analyses, the authors concluded from 15 reviewed studies that no conclusive evidence can be drawn for elevated prevalence rates of mood and anxiety disorders among immigrants compared to the general population. Likewise, in a recent systematic review, Foo et al. (2018) found no sufficient evidence for a higher prevalence of depression or other mood disorders among immigrants. In contrast, Bas-Sarmiento et al. (2017) showed in their systematic review that 13 out of 21 included studies found higher prevalence of mental disorders among immigrants compared to the native population. According to this review, immigrants more likely experience depression and anxiety which are directly related to the stress experienced in the migration process.

Smaller studies compared different immigrant groups from various countries of origin while exploring their vulnerability for psychopathology. For example, Mewes et al. (2010) found no difference in the mental health status between immigrants from East-Europe, former Soviet Union and Turkey. In a community-recruited sample, however, elevated depression level and lower quality of life among Turkish immigrants compared to immigrants from Poland were found. Depression scores of Polish immigrants were comparable to those of the German population (Morawa & Erim, 2014b). In a random sample studies by Wittig et al. (2008) Polish and Vietnamese immigrants had higher depression and anxiety scores compared to the German sample without migration background. A study in a primary care sample showed that Turkish patients reported a greater age-adjusted severity of depression and somatoform symptoms compared to non-immigrated patients (Sariaslan et al., 2014).

Given these mixed results, the association between the experience of migration and psychopathology requires more clarification. The review of the current immigrant health literature suggests that immigrants' prevalence rates of psychopathology are comparable to the general population. Yet, there is evidence that there are specific risk groups in immigrant populations with higher vulnerability to mental disorders depending on several determinants (see section 2.4; Butler et al., 2015; Mösko et al., 2018). Further, methodological challenges account also for mixed results in migration health research (cf. Maehler & Brinkmann, 2016). Methodological considerations are discussed in more detail in each limitation section as well as in the general discussion (see section 6.5).

2.3.2 Epidemiology: Immigrant youth

Immigrant youth are considered a particularly vulnerable group suffering from psychological distress. They face various stressors including acculturative stress, social disadvantages and the mastering of age-salient development tasks (Motti-Stefanidi et al., 2012; Nakash et al., 2012). Accordingly, much research was undertaken to determine the prevalence of mental distress among immigrant youth compared to their non-immigrated peers. A systematic review by Kouider et al. (2014), which included 36 studies from Europe, indicated an elevated risk for internalizing problems in immigrant children and adolescents. Unlike, no difference in externalizing problem behavior was found between immigrant and non-immigrant youth. The authors concluded that a migration status itself, particular among 1st generation immigrants, can often be understood as a risk factor for children's and adolescent's mental well-being. Brettschneider et al. (2015) analyzed the self-reported data of 6,719 adolescents aged 11–17 years who participated in the baseline survey of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS). The results indicated that mental health problems measured by the Strengths and Difficulties Questionnaire (SDQ) were significantly higher among 1st generation immigrants compared to 2nd generation immigrants and non-immigrants. Particularly adolescents of both sexes with a Turkish background had an increased risk of distress. A meta-analysis including 51 European studies with *N*=224,197 immigrant children and youth overall rather supported the migration morbidity hypothesis than the immigrant paradox hypothesis (Dimitrova et al., 2016). In contrast, a recent study by Mood et al. (2016) found evidence for the "immigrant health paradox". Immigrant adolescents aged 14–15-years from England, Germany, the Netherlands, and Sweden (*N*=18,716) reported better mental health with respect to both internalizing and externalizing symptoms than the majority population. However, the authors did not differentiate between generation status. Several other studies of smaller sample sizes have demonstrated a positive relation between immigration status and psychological distress (Dimitrova et al., 2016; Hölling et al., 2008; Nakash et al., 2012; Shoshani et al., 2016), particularly for 1st generation immigrants (Brettschneider et al., 2015; Flink et al., 2012; Kouider et al., 2014). Nevertheless, Motti-Stefanidi and Masten (2017) argue in line with a resilience perspective to shift the focus from a negative-deficient perspective on immigrant youth's mental health, which is mainly represented in research, to a perspective focusing on positive adjustment which most of immigrant youth accomplish.

2.3.3 Own epidemiologic research on immigrants' mental health

In order to deepen the understanding of immigrants' mental health status, we conducted two studies based on representative samples, with the first study focusing on adult immigrants and the second study on adolescent immigrants.

In the Gutenberg Health study, a population-based study (*N*=14,943 age 35 to 74 years) with n=3,525 participants having a migration background, we explored mental health outcomes and suicidal ideation comparing 1st and 2nd generation immigrants to non-immigrants (Beutel et al., 2016). After controlling for sex, age and socioeconomic status, prevalence rates of depression were significantly higher among 1st generation immigrants (OR=1.24; CI=1.01-1.52), generalized anxiety (OR=1.38; CI=1.13-1.68), panic attacks (OR=1.43; CI=1.16-1.77) and suicidal ideation (OR=1.44; CI=1.19-1.74) in comparison to the majority population. 2nd generation immigrants did not differ from non-immigrants in their social profile and mental health characteristics. We conducted further analyses comparing Polish (*n*=295) and Turkish (*n*=141) immigrants as the largest subgroups within 1st generation immigrants. With non-immigrants as reference group, the results revealed that Turkish 1st generation immigrants of both sexes had higher prevalence rates of depression (OR=2.40; CI=1.40-4.13), panic attacks (OR=2.62; CI=1.48-4.64) and suicidal ideation (OR=3.02; CI=1.80-5.04), whereas Polish immigrants more often reported suicidal ideation (OR=1.80; CI=1.26-2.58). Finally, 1st generation immigrants born in Turkey had more than twice the rate of depression (22.4 %) in comparison to 1st generation immigrants born in Poland (9.6 %) which resembled the prevalence rate of depression among non-immigrants (6.8 %). Particularly, 1st generation Turkish women reported by far the highest prevalence rate of depression (35.1 % vs. 14.8 % among Turkish men), panic attacks (25 % vs. 11.7 % among Turkish men) and suicidal ideation (28.6 % vs. 18.3 % among Turkish men), but no sex difference emerged for generalized anxiety (16.7 % vs. 13.3 % among Turkish men).

Applying the same research questions in a sample of immigrant youth, in another study we compared internalizing problems (e.g. depressiveness) and externalizing problems (e.g. conduct problems) of adolescent 1st and 2nd generation immigrants with non-immigrants in a representative school survey (Klein et al., 2017). Self-reported data of 8,518 pupils aged 12–19 years attending different school types were analyzed. We found a similar pattern as in the study detailed above: Particularly 1st generation immigrants reported more internalizing and externalizing problems than 2nd generation immigrants or non-immigrants. The differences, however, were small. Moreover, adolescents with migration background suffered from educational disadvantage, especially 1st generation immigrants.

The mechanism underlying the higher prevalence of distress in 1st generation immigrants have not yet been profoundly understood. Therefore, the current work aimed to expand the knowledge of potential influences factors on 1st generation immigrants' mental health (see section 2.5).

2.4 Determinants of immigrants' mental health

How can the overrepresentation of some immigrants in risk group be explained? There is consensus that migration itself is not per se a risk factor for reduced mental well-being considering the enormous variation of migratory processes and outcomes. Evidently, the experience of migration is accompanied by internal and external risks (Bhugra et al., 2014) with effect on the immigrant's health status. In contrast to the majority population, immigrants face various risk factors which can impair their mental health and lead even to mental disorders (Mösko et al., 2016; Schouler-Ocak et al., 2015). Hence, much research effort has been undertaken to identify moderating factors between immigration status and mental health. In this context cultural aspects, migration-related, and psychosocial factors play a pivotal role (Schouler-Ocak et al., 2015). Kirkcaldy et al. (2006) highlighted the need for epidemiological studies to precisely distinguish between specific migration-related risks and general risk factors such as economic burden and psychosocial marginalization, which are often interlaced. In the following section, findings from research focusing on the investigation of risk and resilience factors affecting immigrants' mental well-being are presented. The overview comprises a selection of sociodemographic, migration-related, psychological, and context variables.

2.4.1 Sociodemographic variables

In epidemiology research, it is well established that *socio-economic status*, *sex*[4] and *age* are relevant influence factors on mental and somatic health. These general risk factors are at the same time interrelated with immigration status.

Generally, one of the major influence factors on mental health is *low socioeconomic status* (Hudson, 2005). Poorer socioeconomic conditions are associated with higher prevalence of depression (Schlax et al., 2019), and even predict mortality risk in the general population (Lantz et al., 2010). Immigrants face social inequalities both in the labor market and education system, have on average a lower educational level, less income and are more likely to be unemployed

[4] In the empirical studies of the current work the question was provided: "Geschlecht: männlich oder weiblich". In order to adequately reflect the assessment the term *sex* is used to due methodological reasons and stringency. If explicitly the social and cultural role is emphasized, the term *gender* is used.

compared to the larger population (Statistisches Bundesamt, 2019). These socio-economic disadvantages affect the next generation of immigrants growing up in Germany. Particularly immigrants with lower income are at risk for psychological distress (Setia et al., 2012). A study by Dunn and Dyck (2000) indicated that socioeconomic factors were more important in explaining the health status of immigrants than of non-immigrants.

According to the World Health World Health Organization (2016) women are more frequently affected both by anxiety disorders and depression worldwide. Epidemiological, cross-national data on depression showed that women had a two-fold increased risk of depression compared to men (Kessler & Bromet, 2013). Several studies indicated difference in health outcomes between immigrant women and immigrant men (e.g. Kobayashi & Prus, 2012). Female sex constitutes an additional risk factor for psychological symptoms in immigrant and non-immigrant populations (Bas-Sarmiento et al., 2017). Given the fact that almost half of all international migrants are women and girls (International Organization for Migration, 2013), several authors have criticized the lack of sex-specific approaches in the complex interaction between migration-related risk factors, gender-specific vulnerability and psychopathology (Binder-Fritz & Rieder, 2014; Kupper et al., 2018; Spallek & Razum, 2015). Beginning in the country of origin, men and women might differ in health status and exposure to health-related risk factors. During the migration process, for example, the danger to experience sexual violence is much greater for women. In the host country, the social situation, degree of autonomy and both familiar and societal roles undergo modification which are strongly determined by gender (Hondagneu-Sotelo, 2013; Spallek & Razum, 2015). These factors also influence the acculturation process (Bhugra, 2004). Following the theory of intersectionality, Binder-Fritz and Rieder (2014) point to the manifoldness and combination of social disadvantages immigrant women face. For example, in the case of immigrant women in the labor market, they are potentially exposed to structural and interpersonal discrimination due to their gender *and* their immigrant status. Therefore, the authors conclude that the influence of gender on immigrants' mental health can only be understood under consideration of the unique socio-economic and sociocultural context (Binder-Fritz & Rieder, 2014) and further variables like generation status and country of origin (Spallek & Razum, 2015) (see section 2.4.2). Yet, there is a lack of studies considering a gender-perspective in research on immigrants' mental health.

In regard to age, prevalence rates of depression and anxiety vary generally by *age* with a peak in later adulthood (World Health World Health Organization, 2016). As immigrants are simultaneously confronted with migration-related stressors and age-salient development task across their life span, it is necessary to study immigrants' mental health in different age groups.

2.4.2 Migration-related factors

The health status of immigrants depends on the context of migration (Alegría et al., 2017). Various migration-related factors like the country of origin (e.g. Dingoyan et al., 2017), reason for the migration (e.g. Lindert et al., 2009), legal status (cf. Peña-Sullivan, 2019) and generation status (e.g. Beutel et al., 2016) contribute to differences in mental health outcomes between immigrant groups. As mentioned above (see section 2.3.1), studies have suggested that particularly immigrants from Turkey are at elevated risk for distress (Beutel et al., 2016; Igel et al., 2010; Morawa & Erim, 2014b). Dingoyan et al. (2017) conducted a multi-centered study with 662 adults with Turkish migration background stratified by age, sex, and education. The participants were interviewed by bilingual interviewers in order to assess lifetime prevalence according to the DSM-IVTR. The highest lifetime prevalence rates were found for any mood disorder (41.9 %), any anxiety disorder (35.7%) and any somatoform disorder (33.7%). Compared to data on lifetime prevalence of the German population, the authors concluded that Turkish immigrants are more likely to suffer from psychological disorders in their life time. The elevated risk in Turkish immigrants might be explained by the increased levels of perceived discrimination they face (see section 2.4.4).

Numerous studies illustrated the importance to differentiate between immigrant generations. Mainly US studies found better mental health outcomes across the spectrum of mental disorders among 1st generation immigrants (cf. "immigrant paradox"; Salas-Wright, Kagotho, et al., 2014; Salas-Wright, Vaughn, et al., 2014) compared to 2nd generation immigrants. Other studies made the opposite observation suggesting that 1st generation immigrants were more vulnerable to mental distress (Maksimović et al., 2014), whereas the health status of 2nd generation immigrants resembled those of non-immigrants (Beutel et al., 2016). Many scholars replicated the generation differences in samples of immigrant youth with higher distress among 1st generation immigrant children and adolescences (Brettschneider et al., 2015; Flink et al., 2012; Klein et al., 2017; Kouider et al., 2014). Generation status is related to specific differences in the socio-cultural socialization processes and familiar contexts in which 1st generation immigrants and 2nd generation immigrants grow up. 1st generation immigrants have experienced the migratory process and the settlement in the new country themselves with associated challenges like language problems and the loss of familiar ties. 2nd generation immigrants, however, face the challenge to grow up in two cultures during their childhood which might result in more familiar and intergenerational conflicts (Motti-Stefanidi & Masten, 2017). This is particularly the case if values within in the family system and the environment outside of the family clash. As 2nd generation immigrants are often better socio-culturally adjusted (e.g. better language skills)

than their immigrated parents, they might be at a higher risk for taking inappropriate level of parental responsibility within the family system (Tumani, 2016).

Another important determinant of immigrants' mental health is the cause for migration. The motives for migration are manifold and can be of financial, political or familiar nature. Obviously, forced migration due to wars, political persecution and violence causes higher stress with detrimental effects on mental health than a voluntary migration. In a meta-analysis, Lindert et al. (2009) showed that the combined prevalence rates for depression (44%) and anxiety (40%) among refugees were more than twice as high as the prevalence among labor migrants (20%, respectively 21%). Main risk factors for refugees' mental health are traumatic experiences and posttraumatic stress (see section 2.4.5).

2.4.3 Acculturation strategies

Acculturation strategies have been related to mental health outcomes. The findings, however, have suggested variation in strength and direction of this relationship (Koneru et al., 2007). The most replicated result is that marginalization appears to be the least adaptive pattern constituting a risk factor for well-being (Berry, 1997; Berry & Hou, 2017; Kupper et al., 2018; Phinney, 1991). In contrast, integration has typically been identified as the acculturation strategy associated with the lowest intensity of acculturation stress, and therefore being protective for mental health (Koneru et al., 2007). Separated and assimilated acculturation profiles have been suggested to have intermediate positions (Berry, 1997; Morawa & Erim, 2014a). For example, in a large international study with 5,366 immigrant youth who had settled in 13 countries supported previous evidence that an integration profile was related to both psychological and sociocultural adaptation (Berry et al., 2006). In contrast, participants with a diffuse profile, resembling the marginalized profile, had the worst psychological and sociocultural adaptation outcomes. Similar results were also found in a clinical sample with 471 Turkish patients showing that levels of depressive symptomatology were negatively associated with integration and positively with marginalization (Morawa & Erim, 2014a). In this study female sex was associated with higher depression scores, but not with acculturation pattern. Evidence for the association between separation, respectively assimilation and mental health is mixed. For example, in a population study Arab Americans who were more orientated towards American culture reported better mental health, whereas the orientation towards Arabic culture was not related to mental health outcomes (Jadalla & Lee, 2012). These results are consistent with those of Kupper et al. (2018) who found in a recent study with 416 adolescents that immigrants who felt more strongly oriented towards German culture reported less severe levels of depression. Orientation towards the culture of origin, however, was not associated with their depression scores.

Participants in a clinical sample with assimilation as acculturation style reported more depressive symptoms than those with separation as acculturation style (Behrens et al., 2015). The authors argue that an assimilation pattern often implies the denial of emotional roots of origin which might lead to an identity crisis jeopardizing a secure self-concept which in turn increases the vulnerability to emotional distress. In the separation pattern the emotional distress is compensated by avoiding potential conflicts with the members of the host culture by focusing predominantly on family ties and the culture of origin's social network (Behrens et al., 2015). Other studies demonstrated that a separation profile was related to reduced physical and mental health in immigrants living in Germany (Brand et al., 2017; Schmitz & Berry, 2009).

Overall, the inconsistent findings in acculturation research might be multifold explained. According to Behrens et al. (2015) the reasons cover both the heterogeneity of the immigrant group (e.g. different countries of origin, motives for migration) and the host countries (e.g. immigration policies, acculturation attitudes of the larger population). Moreover, methodology issues such as the operationalization of acculturation and the dimensionality of the model determine the results (Maehler & Shajek, 2016). As noted above only few studies have considered sex-specific approaches in acculturation research although sex is likely to be an additional confounding factor. For example, a study by Maksimović et al. (2014) demonstrated gender-specific risk constellations for increased depression in dependence of generation status and acculturation orientation among 2932 employees of a German university hospital. Compared to non-immigrants, 1st generation immigrants of both sexes were at higher risk for depression. Among 2nd generation immigrants, this was only the case for women but not for 2nd generation men. Whereas a strong orientation towards the host culture was associated with increased depression for 2nd generation women, this acculturation orientation had an opposite effect in 1st generation male immigrants (namely a lower level of depression). In line, Müller and Koch (2017) identified sex differences in acculturative stressors among Turkish immigrants.

2.4.4 Contextual variables

The acculturation model has been criticized due its psychological perspective which neglects social and contextual variables (Viruell-Fuentes et al., 2012). The stressors immigrants might encounter after migration are related to the socio-political and structural prerequisites in the receiving countries. Given the association between the socio-political context and immigrant's mental health (Porter & Haslam, 2005), policies aimed at fostering integration and immigrants' social participation promote adjustment. At a societal level, common prejudices as well as discriminatory attitudes and behavior of the larger society against certain cultures and religions

shape the environment immigrants adapt to (cf. Sam & Berry, 2010) and determine societal and intergroup context variables (Dimitrova et al., 2016).

Perceived discrimination has consistently been shown to have a detrimental effect on immigrant's emotional well-being and mental health (Butler et al., 2015; Liebkind & Jasinskaja-Lahti, 2000). The pathway between perceived discrimination and health outcomes was explored in a longitudinal study from the German Socio-Economic Panel (SOEP) with 8,307 immigrants confirming that discrimination has a damaging effect on mental health. The notion that immigrants with reduced mental health are more prone to report subsequent discrimination was not supported by the data (Schunck et al., 2015). Igel et al. (2010) demonstrated the interrelation between perceived discrimination, country of origin and sex in a sample with 1,844 immigrants from diverse countries living in Germany. Men reported more experiences of discrimination than women did and that there was a stronger association with males' self-reported health status. Consistent with others studies (Morawa & Erim, 2014b), immigrants with Turkish origin were at highest risk of perceived discrimination compared to other immigrant groups. In this context, it has often been argued that a 'visible' minority status enhances the risk for adverse health outcomes (Berg et al., 2014), even after controlling for perceived discrimination and sociodemographic factors (De Maio & Kemp, 2010). A further contextual variable refers to the concept of *cultural distance* describing the degree of cultural similarities and differences between two or more cultural groups (Berry et al., 2002). Generally, greater cultural distance (e.g. in language, habits, religion) between the immigrant's culture and the receiving culture is related to higher levels of acculturative stress as the adjustment process concerning practices and values becomes more challenging.

2.4.5 Trauma

With the growing numbers of refugees and asylum seekers in recent years, researchers have paid increased attention to traumatic events in the migratory processes and the deleterious impact on mental health. Refugees are more likely to experience multiple forms of trauma such as war-related violence, torture and political persecution (Kim et al., 2019). The relation between exposure to trauma and an increased risk for mental disorders are well documented. Hence, refugees represent a particularly vulnerable group for mental distress including post-traumatic stress disorder (PTSD), albeit prevalence rates have substantially varied across studies (Hynie, 2018; Lindert et al., 2009). Pre-migration trauma includes events like combat, being a civilian in a terror zone, witnessing death or seeing dead bodies, or experiencing natural disasters (cf. Kim et al., 2019; Sangalang et al., 2019). Recent research in refugee samples has focused on comparing the influence of pre- and post-migration traumatic experiences on mental

health status in the country of resettlement (e.g. Dowling et al., 2019). As trauma exposure is rarely assessed in immigrant samples other than refugees, in a U.S.-based representative sample Sangalang et al. (2019) explored the association between traumatic events prior to and after migration, post-migration stressors and mental distress comparing refugees and immigrants. For both groups, pre-migration and post-migration trauma aggravated the risk for psychological distress. Interestingly, the factor family conflict was the most consistent risk factor for poor mental health across refugee and immigrant groups. The authors concluded that pre-migration trauma should be assessed also in immigrants who are not labeled as refugees, as their findings suggested that traumatic experiences seem to be more common among immigrants than is broadly recognized.

2.5 Current study

2.5.1 Life course approach

Spallek et al. (2011) proposed a life course epidemiology perspective in immigrant health research. The authors criticized that most studies on immigrants' health do not explicitly take health-related factors in the pre-migration stage into account. However, knowledge about the exposure to risk factors in different life phases is essential to describe and understand the health status of immigrants across generations. In life course epidemiology, long-term effects of "physical or social exposures during gestation, childhood, adolescence, young adulthood and later adult life" on the later health situation are examined (Kuh et al., 2003, p. 778). According to the conceptual framework for migration and health, Spallek et al. (2011) illustrated the different and potentially accumulated exposures immigrants might face during the course of their lives (see Figure II- 2). Different exposures occur along a time axis in three stages: in the country of origin, during migration, and in the host country. Additionally, this approach offers a generational perspective by considering genetic factors and the transfer of cultural beliefs, health behavior (e.g. nutrition, alcohol consumption), and socio-economic conditions to the 2nd generation of immigrants. In contrast to other models in immigrants' health research, the authors included the critical period of early childhood in the country of origin in their framework. Immigrants' social and physical exposure during childhood might differ between those in their countries of origin and those of the German population. Distinctive nutrition, hygiene, and prevalence of infectious diseases before migration also contribute to different health outcomes in immigrants. As further example, Spallek et al. (2011) provided the higher risks for stomach cancer among specific immigrant populations due to higher odds of infection with Helicobacter pylori in early age. Despite the methodological issues of retrospectively assessing exposures in

childhood, studies applying this life course approach "will provide new insights in the development of disease and the health situation of migrants" (Spallek et al., 2011, p. 7).

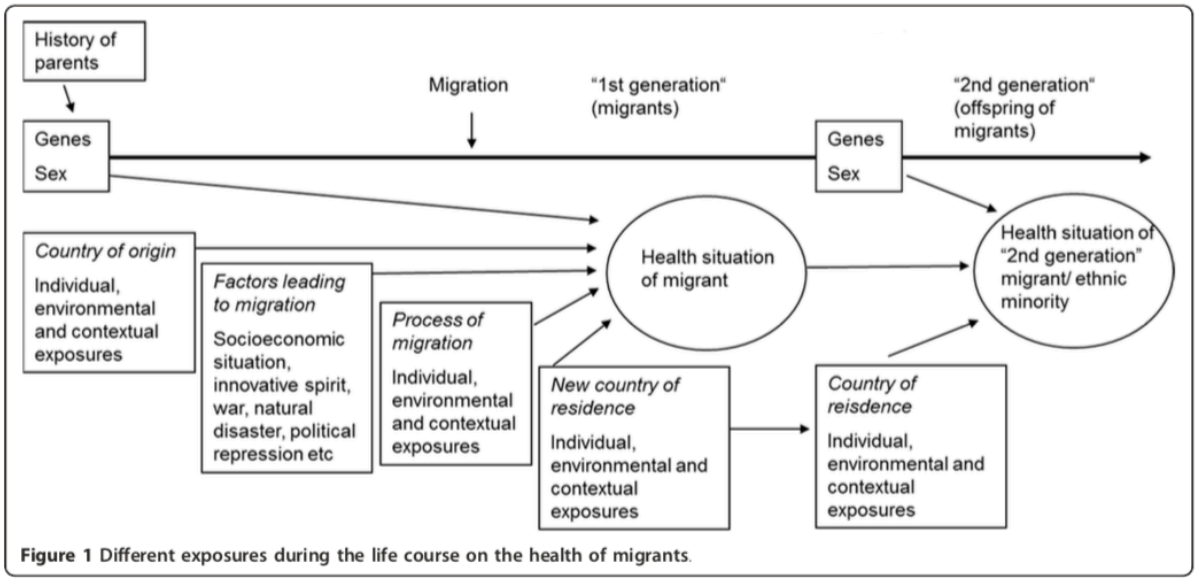

Figure II- 2. Different exposures during the life course on the health of migrants (cited from Spallek et al., 2011, p. 4).

However, the model's scope is immigrant's general health. Specific exposures and risk factors for psychopathology in immigrants are not mentioned, although the importance of childhood experiences in the development of mental disorders is well documented. A well-known example are children's experiences with their primary care givers. Therefore, the current study aimed to provide an answer to Spallek's question: "Which factors and exposures in the life course of migrants do we have to consider in migrant studies in order to understand adequately the current health situation of migrants?" (p. 1) by suggesting an exploration of more universal factors of early childhood experiences in immigrant population.

2.5.2 The relevance to study childhood experiences in immigrant mental health literature

In the vast majority of immigrant mental health literature, pre-migration traumatic experiences as contributing factor for distress are lacking. If pre-migration traumatic experiences are considered in frameworks investigating immigrants' mental health, they are nearly always linked to the migratory experience itself and *not* to the pre-migration context (cf. section 1.5). In other words, there is a paucity of considering the well-known risk factors of adverse childhood experiences which occurred unrelated to the later migration. For example, Foster (2001) suggested

guidelines for clinician conceptualizing trauma and traumatogenic factors which might cause severe psychological distress in immigrants. Despite her emphasis on different time lines in the migratory process and the cumulating effect of traumatic experiences, pre-migration trauma was defined as trauma occurring "just prior to migration" (p. 155). Surprisingly, even in psychoanalytic literature, traditionally highlighting the relevance of early interpersonal experiences, only a few authors analyzed the role of recalled childhood experience within the complex relation between migration and later symptomology. Ainslie et al. (2013) summarized that „much of the psychoanalytic literature on immigration and trauma, however, has not extended to the study of specific traumatic experiences across and within different immigrant communities." (p. 675). In early works Grinberg and Grinberg (1984), however, noted that the feeling of helplessness and the painful experience of object loss caused by the migration, might be more intense and harmful when the individual had already suffered from such feelings in childhood. Consequently, in vulnerable persons "migration favors the emergence of latent pathology" and "has the potential for providing the starting point for serious psychic disturbances" (Grinberg & Grinberg, 1984, p. 27). In the same vein, the psychoanalyst Akhtar (1995) stated that "the extent to which an individual has achieved the intrapsychic capacity for separateness prior to immigration will also influence the effects of the actual separations involved in immigration" (p. 1055). In addition, the process of mourning as key aspect in the psychodynamic work with immigrants (e.g. Machleidt & Gün, 2018; cf. section 1.2.4), requires intrapsychic capacity. Given the cumulating effect of trauma and the higher risk of re-victimization, more studies are required to explore and contextualize the potential pathogenic impact of migration-related experiences. These experiences might be interrelated to, even trigger, an already existing higher vulnerability due to adverse childhood situations in the personal history.

2.5.3 Childhood experiences and immigrants' mental health

The lack of considering early childhood experience is surprising as a large epidemiology body of literature has confirmed that childhood experiences with primary caregivers profoundly shape later human development and functioning (e.g. Enns et al., 2002; Klein et al., under review; Overbeek et al., 2007). Two conceptually distinct, but interrelated, aspects of childhood experiences are considered in the current study: *Parental rearing behavior* and *child maltreatment*.

2.5.3.1 Parental rearing behavior

"Perceived parental rearing behavior has been established as an etiological factor in the subsequent development of psychopathology and life satisfaction (Petrowski et al., 2014; Rikhye et

al., 2008). Adverse parenting experiences with the primary caregiver in childhood have been related to a higher vulnerability for depression (Sakado et al., 2000; Valiente et al., 2014), anxiety (Ihle et al., 2005; Someya et al., 2000), eating psychopathology (Herraiz-Serrano et al., 2015) and personality disorders (Cheng et al., 2011) in adult life. The three main dimensions of parental rearing behavior refer to emotional warmth, rejection and punishment as well as control and overprotection (cf. Schumacher et al., 1999). Particularly, low parental emotional warmth and high parental control have been identified as risk factors for mental disorders (Enns et al., 2002; Overbeek et al., 2007). According to Bowlby (1973, 1980) the experience of parental rejection in childhood can evolve into dysfunctional inner working models of self and others. The negative self-model is characterized by the generalized feeling to be unwanted and unworthy, while the negative other-model is characterized by the expectation that the environment is unsupportive and unreliable. Parental overprotection and strict control inhibit the child's development of self-efficacy, autonomy and sense of agency due to the discouragement of independent exploration (cf. Nolte et al., 2011). Consequently, challenges tend to be perceived as threatening leading to worries and avoidant coping strategies (Spada et al., 2012). Accordingly, Turgeon et al. (2002) found that anxious patients recalled more parental overprotection compared to non-anxious controls." [5] (Klein et al., p. 1)

2.5.3.2 Child maltreatment

Child maltreatment refers to early-life exposure such as abuse and neglect occurring mostly within close interpersonal relationships. In literature, five forms of child maltreatment are usually studied: emotional, physical, and sexual abuse, as well as physical and emotional neglect. Albeit varying in form, frequency and severity, child maltreatment is highly prevalent in the general population (Witt et al., 2017). Exposure to child maltreatment has tremendous long-term effects on mental and physical health. Previous meta-analyses and systematic reviews have demonstrated the significant impact of abuse and neglect in childhood on mental sequelae in adulthood: Li et al. (2016) reported pooled odds ratios between any form of maltreatment (neglect, physical and sexual abuse) and depression (OR=2.03) and anxiety (OR=2.70). Likewise, Norman et al. (2012) analyzed 124 studies and found associations between depressive disorders and physical abuse (OR=1.54), emotional abuse (OR=3.06) and neglect (OR=2.11). Further, child maltreatment was related to drug use, suicide attempts and risky sexual behavior. Hughes

[5] This paragraph is cited from: Klein, E. M., Brähler, E., Petrowski, K., Tibubos, A. N., Burghardt, J., Wiltink, J., . . . Beutel, M. E. (under review). Recalled parental rearing behavior in adult women and men with depressive and anxiety symptoms: Findings from a community study. *Zeitschrift für Psychosomatische Medizin und Psychotherapie*.

et al. (2017) replicated the long-term consequences of experienced child maltreatment on mental health in a recent systematic review and meta- analysis. The analyses were extended to somatic health outcomes and health behavior suggesting weak or modest relations between adverse childhood experiences with physical inactivity, overweight, and diabetes as well as moderate associations with smoking, poor self-rated health, cancer, heart disease, and respiratory disease.

2.5.4 Research gap

As the reviewed literature in the introduction demonstrated so far, many determinants of immigrants' mental health have been investigated. Whereas post-migration stressors undoubtedly account for higher distress among immigrants, the impact of pre-migration experiences, however, has received scant attention in transcultural research on immigrations' mental health. Providing a theoretical framework, Spallek et al. (2011) suggested a life course approach in studying immigrants' mental health acknowledging the importance of the critical phase in childhood on subsequent mental health outcomes. To broaden the perceptive to exposure before migration is in line with developmental and psychoanalytic approaches. Grinberg and Grinberg (1984) highlighted that latent pathology rooted in childhood such as experienced privation can emerge due to a stressful migratory process and intensifying feelings of anxiety and helplessness. Research consistently showed that aversive experiences in the pre-migration context such as trauma exposure significantly increase the risk for acculturative and psychological distress in the post-migration phase (Li, 2016; Li & Anderson, 2016). Yet, empirical studies investigating pre-migration stressors are mainly carried out in refugee populations (Hollander, 2013; Schweitzer et al., 2006) and are conceptualized within the migration context as these stressors seem to be directly linked to the force to migrate (e.g. exposure to war). As mentioned above, a study by Sangalang et al. (2019) showed that family conflicts were consistently associated with reduced mental health both in refugees and immigrants. These findings indicated that family relationships and functioning might equal or even be more significant for mental health than traumatic experiences. In addition, it is not only important to explore differences and similarities of childhood experiences between immigrants and non-immigrants, but also to consider different pathways to mental health. This notion is particularly salient in research on parenting due to diverse cultural childrearing scripts which have to be acknowledged in order to avoid ethnocentrism (see chapter 4 for more details). Further, as described in section 1.4.1, sex-specific approaches are often lacking in the investigation of immigrants' psychopathology.

In sum, on the one hand, studies on immigrants' development of psychopathology, mostly from transcultural psychiatry have neglected to study early childhood experiences. On the other hand,

research on parenting and child maltreatment lacks the explicit investigation of immigration status. There are studies addressing these research questions in immigrant youth (see section 4.1), however, despite the known long-term effects of parenting and child maltreatment on psychological well-being, studies in adult immigrants are missing. The current work aims to combine both perspectives to broaden the understanding of immigrants' mental health status. To the best of my knowledge, no studies so far exist exploring parenting and child maltreatment in population-based samples taking immigration status into account. Such approaches will additionally facilitate knowledge about health care needs and have clinical implications for tailored mental health services (see section 6.4).

2.5.5 Overview of empirical studies: research questions and method

The studies of this work adapt a life course approach by exploring the association of immigrants' early childhood experiences with their mental health status in a retrospective study-design. Within the life course framework for studying migration, the examination of immigrant children and youth belongs to the central questions (Jasso, 2003). Therefore, one study of the current work focuses on immigrant youth.

Given the research gap, the first study explored the prevalence of child maltreatment taking generation status and its association with distress into account. The additional aims of two further studies were to deepen the understanding of the mechanism underlying previous empirical findings which indicated diminished mental health in adult and adolescent 1st generation immigrants (see section 2.3.3). In one study, differences and similarities in recalled parental rearing behavior in adult immigrants were assessed. The other study is the only one based on a sample of adolescent immigrants, in which the association between acculturation styles and mental health was explored. The two last studies explored sex-related differences. All studies were conducted in representative samples with random participant selection. Data was assessed using validated questionnaires. Due to the association between immigration status and general socio-economic determinates of health, analyses were adjusted for sex, age and socio-economic variables.

The following section will present a general overview of the analyzed samples with respective comparison groups, main outcome variables, research questions, and applied questionnaires (see Table II-1). In each chapter, the literature related to the specific research questions, the formulated hypothesis and method will be described in more detail.

2.5.5.1 Outcome: Child maltreatment

The first study was based on a survey representative of the German population in regard to age, sex, and region. This study considered generation status by comparing 1st generation immigrants, 2nd generation immigrants, and non-immigrants.

The following research questions were addressed:

1. Are there differences regarding the prevalence rates of child maltreatment (emotional, physical, and sexual abuse, emotional and physical neglect) comparing 1st generation immigrants, 2nd generation immigrants, and non-immigrants?
2. How are physical forms, respectively emotional forms of child maltreatment associated with depressiveness and anxiety across the groups?

2.5.5.2 Outcome: Recalled parental rearing behavior

Extending previous findings of elevated depressiveness among 1st generation immigrants (Beutel et al., 2016), the second study was based on the Gutenberg-Health study. First generation immigrants were compared to non-immigrants regarding their recalled parental rearing behaviors and their association with depressiveness. Further, the country of origin of 1st generation immigrants was taken into account in the comparisons. Sex-related differences were explored.

The following research questions were addressed:

1. How does recalled parental rearing behavior vary between 1st generation immigrants from different countries and non-immigrants?
2. How is recalled parental rearing behavior associated with depressiveness across the groups?
3. Do women and men recalled maternal and paternal rearing behavior differently?

2.5.5.3 Outcome: Acculturation strategies

The third study also aimed to extend previous evidence for elevated prevalence rates of both internalizing and externalizing problems among immigrant youth (Klein et al., 2017). In a representative school survey, the acculturation strategy (see sections 2.2.2 and 2.3.3) and its association with internalizing and externalizing problems among adolescent 1st generation immigrants were studied. Sex-related differences were explored.

The following research questions were addressed:

1. How do 1st generation immigrant girls differ from 1st generation immigrant boys in their acculturation strategy?

2. How are acculturation strategies associated with mental health (internalizing and externalizing problems) among girls and boys after adjusting for age and educational level?

2.5.5.4 Definition of immigration status

In all studies, immigration status and generation status were defined according to the German micro census (Statistisches Bundesamt, 2019). Participants who were born abroad, migrated to Germany after 1949 and had at least one parent born abroad were considered as 1st generation immigrants. Participants who were born in Germany and had at least one parent born abroad were considered as 2nd generation immigrants. Their countries of origin, respectively those of their mothers and fathers were assessed. Due to the small numbers of single countries, groups of origin were combined according former procedures and geographical, historical and religious characteristics (c.f. Brettschneider et al., 2015).

Table II- 1 *Overview of studies*

Sample	1st generation immigrants	2nd generation immigrants	Non-immigrants	Age	Mental health variable	Outcome variable	Comparison	Previous study
Representative Survey (REP)	*n*=132	*n*=162	*n*=2146	*M*=48.4 *SD*=18.2	Depressiveness anxiety (PHQ-4)	Child maltreatment (CTQ)	1st generation vs. 2nd generation immigrants vs. non-immigrants	-
Gutenberg Health study (GHS)	*n*=743	-	*n*=6518	*M*=58.6 *SD*=10.4	Depressiveness (PHQ-9)	Recalled parental rearing behavior (FEE)	a) 1st generation immigrants vs. non-immigrants b) Among 1st generation immigrants: - country of origin - sex (explorative)	1st generation immigrants: highest level of depressiveness [2]*
Representative school survey	*n*=440	-	-	*M*=16.2 *SD*=1.6	Internalizing Problems (SDQ) Externalizing Problems (SDQ)	Acculturation strategy[1]	Among 1st generation immigrants: - sex	1st generation immigrants: highest level of IP and EP [2]**

Note: PHQ=Patient Health Questionnaire; SDQ= Strengths and Difficulties Questionnaire; CTQ=Childhood Trauma Questionnaire; FEE=Recalled Parental Rearing Behavior Questionnaire (Fragebogen zum Erinnerten Elterlichen Erziehungsverhalten); IP=internalizing problems EP=externalizing problems

[1] =Scale for Measuring Applied Acculturation Strategy; [2] =compared to non-immigrants and 2nd generation immigrants

* Beutel, M.E., Jünger, C., Klein, E.M., et al. (2016). Depression, anxiety and suicidal ideation among 1st and 2nd generation migrants-results from the Gutenberg health study. *BMC Psychiatry, 16(1)*, 288-298.

** Klein, E.M., Wölfling, K., Beutel, et al., (2017). Psychische Belastung und die Akzeptanz von gewaltlegitimierenden Männlichkeitsnormen bei Jugendlichen. *PPmP-Psychotherapie· Psychosomatik· Medizinische Psychologie, 67*(03/04), 152-160.

3 Study 1: Prevalence rates of child maltreatment among 1st generation immigrants, 2nd generation immigrants and non-immigrants– results from a representative German population-based study

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3.1 Introduction

Over the last decades evidence from epidemiological and clinical research has well established that child maltreatment constitutes a major social and public health issue (Gilbert et al., 2009; Leeb et al., 2008). Child maltreatment is defined as "any act or series of acts of commission or omission by a parent or other caregiver that results in harm, potential for harm, or threat of harm to a child." (Leeb et al., 2008, p. 11). Accordingly, acts of commission involve emotional, physical, and sexual abuse, whereas acts of omission refer to physical and emotional neglect. Previous meta-analyses and systematic reviews have demonstrated the harmful long-term impact of adverse childhood experiences on mental sequelae in adulthood (Hughes et al., 2017; Norman et al., 2012). According to Li and colleagues (2016), pooled odds ratios between any form of reported maltreatment and adulthood depression (OR=2.03) and anxiety (OR=2.70) were considerably increased. The impairment of wellbeing and health is particularly severe in repeated and multiple forms of adverse childhood experiences (Terr, 1991). The complex symptomology, which can occur as a result of severe trauma histories such as child maltreatment, was recently acknowledged by the WHO which implemented the new diagnostic entity of Complex-Posttraumatic-Stress-Disorder in the upcoming ICD-11. Further, early traumatization substantially increases the risk for additional victimization and further trauma exposure (Cook et al., 2017; Finkelhor et al., 2009).

3.1.1 Prevalence rates of child maltreatment

Child maltreatment is considered a global phenomenon (Cyr et al., 2013). Although the estimation of prevalence rates of child maltreatment has been a main object of research, the results

are scarce and inconsistent due to methodological challenges (cf. Glaesmer, 2016), high numbers of unreported cases, and reliance on clinical samples (Norman et al., 2012). In a representative German sample with 2,510 participants aged from 14 to 94 years using the Childhood Trauma Questionnaire (CTQ; Klinitzke et al., 2012) prevalence rates were 9% for severe physical neglect, 7.1% for severe emotional neglect, 3.3% for severe physical abuse, 2.6% for severe emotional abuse, and 2.3% for severe sexual abuse (Witt et al., 2017). Corroborating previous studies, child maltreatment was strongly related to sociodemographic variables like female sex and higher age. Unemployed individuals and those with a lower education level were more likely to report a history of child maltreatment (Euser et al., 2010; Gilbert et al., 2009; Häuser et al., 2011; Stith et al., 2009). However, only few studies of population-based samples have explicitly considered migration status as a relevant sociodemographic variable despite large proportions of immigrants in the populations studied.

3.1.2 Immigrant status and child maltreatment

Although child maltreatment is a widespread phenomenon in all societies (e.g. Stoltenborgh et al., 2013), studies investigating prevalence rates of child maltreatment indicated that children and adolescents in immigrant families have an increased risk for child maltreatment (Alink et al., 2013; Euser et al., 2011; Hussey et al., 2006; Schick et al., 2016; Sedlak et al., 2010). Immigrant parents often face structural disadvantages, acculturation stress and intergenerational culture conflicts which cause strains and difficulties within the family system (Dettlaff et al., 2009; Nomaguchi & House, 2013) and which in turn can facilitate harsh parenting, lower family functioning and even maltreatment (Flink et al., 2012; Lansford et al., 2004; Luis et al., 2008; Vaughn et al., 2017). As migration status is often related to factors elevating the risk of maltreatment like lower socio-economic status, it is important to disentangle migration background from related sociodemographic factors (Alink et al., 2013; Euser et al., 2011). One of the few studies considering migration status in the investigation of prevalence rates of child maltreatment in a population-based sample (N=2,504) showed that birth outside of Germany was a predictor for severe forms of emotional abuse, physical abuse and physical neglect after controlling for sex, age and socioeconomic status (Häuser et al., 2011). To date, only a limited number of studies have compared adult immigrants and non-immigrants with regard to various forms of childhood abuse and neglect. For example, in a large US population-based sample Vaughn and colleagues (2017) found that 1st generation immigrants reported less physical and sexual abuse, but higher levels of neglect compared to 2nd generation immigrants and non-immigrants.

Moreover, studies have suggested that the link between physical discipline and its detrimental effect on psychosocial adjustment might also vary across ethnic groups due to socio-culturally different use, meaning and acceptance of corporal punishment (Gershoff, 2002; Lansford et al., 2010). For instance, the significant relationship between physical discipline and worse mental health outcomes was mainly found in European Americans but did not appear to be generalizable to Africans Americans and Hispanics (Lansford, 2010; Whaley, 2000). Whereas the definition of child abuse varies across different socio-cultural contexts, many scholars and clinicians define any form of corporal punishment as maltreatment (e.g. the United Nations). In most instances physical abuse occurs in the context of corporal punishment which is in turn a strong risk factor for physical abuse (Fréchette et al., 2015; Lansford et al., 2015) and other forms of child abuse (Akmatov, 2010).

3.1.3 The current study

Given the paucity of prevalence rates of child maltreatment among adult immigrants, the purpose of the current study was to provide prevalence rates of child maltreatment comparing 1st generation immigrants, 2nd generation immigrants and non-immigrants in a representative sample of the German population. As most studies used the validated Childhood Trauma Questionnaire, we reported the prevalence rates for each single type of child maltreatment in order to promote comparability across different studies. Further, we explored the associations of physical forms, respectively emotional forms of child maltreatment with depression and anxiety symptoms across groups. To disentangle migration status from known risk factors related to higher prevalence rates of child maltreatment, other sociodemographic variables (sex, age, unemployment and education) were taken into account.

Therefore, the current study seeks to address following research questions:

1. How are the prevalence rates of child maltreatment (emotional, physical, and sexual abuse, emotional and physical neglect) comparing 1st generation immigrants, 2nd generation immigrants and non-immigrants?
2. How are physical forms, respectively emotional forms of child maltreatment associated with depressiveness and anxiety across the groups?

Based on the few previous findings, it is assumed that immigrants might have a higher risk of child maltreatment. It is hypothesized that both emotional forms and physical forms of child maltreatment are associated with higher depressiveness across all groups.

3.2 Method

3.2.1 Sample and procedure

The data of the current study was collected by a representative survey of the German population in regard to age, sex, and region. Data was collected by an independent institute for social research (USUMA, Berlin) in 2016. The survey followed established sampling guidelines for generating a representative sample (Koch, 1997). A random-route procedure was applied with random selection of the region, households and target persons living in the households. Each participant who provided informed consent completed several self-report questionnaires at home in the presence of a trained interviewer. Persons with insufficient language German skills were excluded.

Migration status was defined according to the German micro census (Statistisches Bundesamt, 2019). Participants who migrated to Germany after 1949 were considered as 1st generation immigrants. Participants who were born in Germany and had at least one parent born abroad were considered as 2nd generation immigrants. Following former procedures smaller groups of countries of origins were combined (cf. Beutel et al., 2016; Brettschneider et al., 2015; Tibubos et al., 2018).

In total, the sample consisted of 2,510 participants (1,339 women; 1,171 men) covering the age range from 14 to 94 years (M=48.4; SD=18.2). Participants with missing data on their own, or their parents' country of birth (n=70) were excluded.

3.2.2 Ethical Statement

The institutional ethics review board of the University of Leipzig approved the study and procedure. Participants obtained information about the study procedures, data collection and the anonymization of all personal data. All participants received a detailed data privacy statement and provided informed consent. The study adhered to ICH-GCP-guidelines and to the guidelines of the ICC/ESOMAR International Code of Marketing and Social Research Practice.

3.2.3 Questionnaires

The *Childhood Trauma Questionnaire* (CTQ; Bernstein et al., 2003; Klinitzke et al., 2012) is a 28-items questionnaire which retrospectively assesses the exposure to maltreatment in childhood including emotional, physical, and sexual abuse, and emotional and physical neglect on a 5-point response scale (0 = "not at all" to 4="very often"). Klinitzke et al. (2012) evaluated the psychometric properties of the CTQ in a representative sample demonstrating high internal

consistency of each subscale ($\alpha \geq 0.80$). The only exception was the subscale "physical neglect" which should be interpreted with caution. According to Bernstein et al. (2003) the severity of each subscale can be classified into four groups from "none–minimal", "minimal–moderate", "moderate–severe", to "severe–extreme" (cf. Witt et al., 2017). The two last classifications groups indicate the presence of clinically significant abuse or neglect and were therefore defined as scoring above a cut-off score.

The *PHQ-4* is an ultra-brief screening tool for anxiety and depressiveness which has been validated in the general population (Löwe et al., 2010), including populations with migration background (Tibubos et al., 2018). The four items assessed depressed mood and loss of interest as well as anxiety symptoms like worrying and feeling nervous/ anxious. Participants rated the frequency of occurrence in the past two weeks from 0 ="not at all" to 3 ="nearly every day".

3.2.4 Statistical analysis

Descriptive statistics were calculated for prevalence rates using the five subscales of the CTQ. For group comparison between 1st generation immigrants, 2nd generation immigrants and non-immigrants, MANCOVAs considering age, sex and unemployment as covariates were applied. Effect sizes were provided by η^2. χ^2 tests were used for comparisons of categorical variables. Multiple linear regressions with PHQ-4 as outcome variable were analyzed separately for physical maltreatment and emotional maltreatment as independent variables. In order to investigate whether the impact of physical maltreatment, respectively emotional maltreatment on distress might vary across the groups, interaction terms between maltreatment type and migration status were added. In addition to migration status, female sex, age, unemployment, and education (> 12 years) were included in the regression model as control variables. According to a sensitivity analysis (Soper, 2019) the current sample size was adequate to carry out the analyses with sufficient statistical power. Analyses were performed using SPSS Version 23.

3.3 Results

As shown in Table III- 1, 5.4 % of participants were 1st generation immigrants and 6.6 % 2nd generation immigrants. The largest groups of immigrants came from Middle- and South Europe, followed by Arabic-Islamic countries and Former Soviet Union. 1st generation immigrants immigrated in average 28 years ago (*SD*=18.6). 2nd generation immigrants were younger both compared to 1st generation immigrants and non-immigrants. 1st generation immigrants were more likely to be married, reported a lower level of education, were more often unemployed and tended to have a lower household income.

Table III- 1 *Demographic characteristics: comparison between 1st generation immigrants, 2nd generation immigrants and non-immigrants*

	1st generation immigrants (*N*=132)	2nd generation immigrants (*N*=162)	Non-immi-grants (*N*=2146)	Test Statistics
Age *(M; SD)*	49.05 (16.54)	39.19 (17.44)	48.99 (18.26)	$F(2, 2439)=22.19$; $p=.000$; $\eta^2=.018$)
Women; *% (n)*	50.0 (66)	51.9 (84)	53.7 (1153)	*ns*
Family status; *% (n)*				χ^2 (6, 2432)=51.67; $p=.000$; Cramer's V=.10
married	51.5 (68)	32.3 (52)	46.5 (994)	
single	17.4 (23)	50.9 (82)	30.9 (662)	
divorced	25.0 (33)	9.3 (15)	13.4 (287)	
widowed	6.1 (8)	7.5 (12)	9.2 (196)	
Level of education attained, *% (n)*				χ^2 (8, 2441)=35.33; $p=.000$; Cramer's V=.09
Completed Year 9	44.3 (58)	17.3 (28)	30.3 (648)	
Completed Year 10	25.2 (33)	42.6 (69)	38.9 (833)	
Completed Year 12	19.8 (26)	19.1 (31)	15.8 (339)	
University Degree	8.4 (11)	11.1 (18)	9.7 (207)	
Other	2.3 (3)	9.9 (16)	5.3 (114)	
Employment status, *% (n)*				χ^2 (8, 2422)=61.90; $p=.000$; Cramer's V=.11
in Training	1.5 (2)	18.0 (29)	8.0 (171)	
working	59.5 (78)	55.3 (89)	56.3 (1200)	
unemployed	13.7 (18)	6.8 (11)	4.6 (99)	
retired	18.3 (24)	14.3 (23)	27.0 (576)	
Other	6.9 (9)	5.6 (9)	4.0 (85)	
Monthly household income, *% (n)*				χ^2 (2, 2339)=5.79; $p=.055$; Cramer's V=.05
> 2000 €	50.8 (62)	61.0 (94)	61.8 (1274)	
Country of origin*			-	
Middle- and South Europe	38.6 (51)	45.7 (74)	-	
Former Soviet Union	18.2 (24)	5.6 (9)	-	
Arabic-Islamic countries	22.0 (29)	24.7 (40)	-	
Other	21.2 (28)	24.1 (39)	-	

Note. * for 2nd generation immigrants: their parents' country of origin is present

Table III- 2 provides the prevalence rates by severity of each subscale of maltreatment for 1st, 2nd generation immigrants and non-immigrants. Among 1st generation immigrants 7.6 % reported at least moderate emotional abuse, 10.6 % reported physical abuse, 12.9 % sexual abuse, 13.6 % emotional neglect, and 34.8 % physical neglect. 8.8 % of 2nd generation immigrants recalled at least moderate emotional abuse, 8.1 % physical abuse, 6.3 % sexual abuse, 11.9 % emotional neglect, and 18.8 % physical neglect. Accordingly, the prevalence rate for non-immigrants were 6.1 % for emotional abuse, 5.9 % for physical abuse, 7.1 % for sexual abuse, 12.5 % for emotional neglect, and 21.4 % for physical neglect. Overall, physical neglect and emotional neglect were the most prevalent forms of maltreatment. Descriptively, 73 % of 2nd generation immigrants and 70.5 % of non-immigrants reported no abuse and neglect. In contrast, 56.5 % of 1st generation immigrants recalled no abuse and neglect, but they reported more often one or two types of abuse and neglect (for more details see Figure III- 1). A MANOVA with the number of different types of child maltreatment as outcome variable revealed that 1st generation immigrants reported more multiple child maltreatment compared to non-immigrants ($F(2, 2409)=3.4$; $p=.033$; $\eta^2=.003$). The difference, however, disappeared after controlling for sex, age, unemployment and high education ($F(2, 2381)=2.4$; $p=.09$; $\eta^2=.002$).

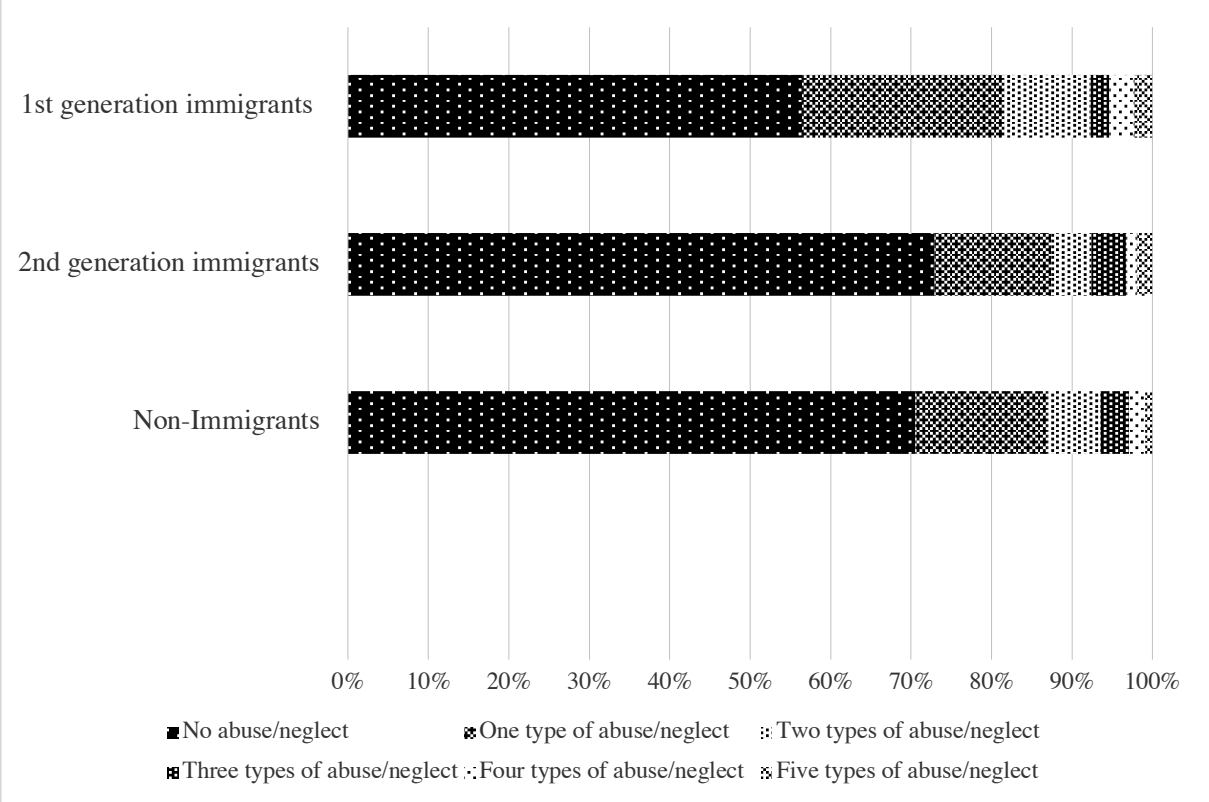

Figure III- 1. Proportions of different forms of child maltreatment among 1st generation immigrants, 2nd generation immigrants and non-immigrants.

Table III- 2 *Prevalence rates of child maltreatment by migration status and severity*

		None-minimal		Slight to moderate		moderate to severe		severe to extreme	
	N	*N*	*%*	*N*	*%*	*N*	*%*	*N*	*%*
Emotional abuse									
1st generation immigrants	131	105	80.2	16	12.2	5	3.8	5	3.8
2nd generation immigrants	160	118	73.8	28	17.5	7	4.4	7	4.4
non-immigrants	2134	1757	82.3	247	11.6	82	3.8	48	2.2
Physical abuse									
1st generation immigrants	132	102	77.3	16	12.1	5	3.8	9	6.8
2nd generation immigrants	160	136	85.0	11	6.9	4	2.5	9	5.6
non-immigrants	2136	1895	88.7	114	5.3	66	3.1	61	2.9
Sexual abuse									
1st generation immigrants	132	106	80.3	9	6.8	12	9.1	5	3.8
2nd generation immigrants	160	135	84.4	15	9.4	7	4.4	3	1.9
non-immigrants	2135	1849	86.6	135	6.3	107	5.0	44	2.1
Emotional neglect									
1st generation immigrants	132	83	62.9	31	23.5	8	6.1	10	7.6
2nd generation immigrants	160	96	60.0	45	28.1	8	5.0	11	6.9
non-immigrants	2135	1278	59.9	590	27.6	127	5.9	140	6.6
Physical neglect									
1st generation immigrants	132	63	47.7	23	17.4	24	18.2	22	16.7
2nd generation immigrants	160	101	63.1	29	18.1	19	11.9	11	6.9
non-immigrants	2135	1261	59.0	417	19.5	281	13.2	176	8.2

Results of the MANCOVA (see Table III- 3) revealed a main effect for migration status ($F(5, 2376)=3.5$; $p=.000$; $\eta^2=.007$) and the covariates age ($F(5, 2403)=43.2$; $p=.000$; $\eta^2=.083$), sex ($F(5, 2376)=18.0$; $p=.000$; $\eta^2=.037$), unemployment ($F(5, 2376)=4.68$; $p=.000$; $\eta^2=.010$) and high education ($F(5, 2376)=4.38$; $p=.001$; $\eta^2=.009$). Physical abuse was more frequently recalled by 1st generation immigrants compared to non-immigrants. Overall, 1st generation immigrants reported the highest level of physical neglect. Older participants were more likely to report higher levels of physical abuse ($F(1, 2387)=5.8$; $p=.016$; $\eta^2=.002$), emotional neglect ($F(1, 2387)=13.6$; $p=.000$; $\eta^2=.006$) and physical neglect ($F(1, 2387)=122.2$; $p=.000$; $\eta^2=.049$). Participants who were unemployed reported significantly higher mean values on all CTQ-scales. High education was negatively associated with physical abuse ($F(1, 2387)=11.4$; $p=.001$; $\eta^2=.005$), emotional neglect ($F(1, 2387)=8.0$; $p=.005$; $\eta^2=.003$) and physical neglect ($F(1, 2387)=10.5$; $p=.001$; $\eta^2=.004$).

Regarding their mental health status, there were no differences in depressiveness and anxiety rates between 1st generation immigrants, 2nd generation immigrants and non-immigrants. Main effects for women ($F(1, 2400)=35.12$; $p=.000$; $\eta^2=.014$) and unemployment ($F(1, 2400)=48.13$; $p=.000$; $\eta^2=.020$) were found for higher distress.

The results of the regression models are presented in Table III- 4. The associations of physical abuse and neglect, respectively emotional abuse and neglect with depression and anxiety symptoms were explored considering migration status (non-immigrants as reference group), interaction terms and covariates. Being a women and unemployment were positively correlated with distress. Physical abuse and neglect were significantly associated with depressiveness and anxiety. Likewise, there was a main effect of emotional abuse and neglect on distress. There was no main effect of migration status on mental health. However, interactions between 1st generation immigrants and emotional neglect as well as between 1st generation immigrants and physical neglect emerged. Among 1st generation immigrants, the correlation between distress and emotional neglect was $r=.47$ ($r_{2nd\ generation\text{-}immigrants}=.27$; $r_{non\text{-}immigrants}=.25$) and between distress and physical neglect $r=.48$ ($r_{2nd\ generation\text{-}immigrants}=.31$; $r_{non\text{-}immigrants}=.22$).

Table III- 3 *Different types of child maltreatment and mental health: comparison between 1st generation immigrants, 2nd generation immigrants and non-immigrants*

	1st generation immigrants		2nd generation immigrants		Non-Immigrants		Test Statistics
	M	*SD*	*M*	*SD*	*M*	*SD*	
Child maltreatment							
Emotional abuse	6.81	3.09	7.35	3.67	6.78	2.94	*ns*
Physical abuse	6.36	2.79	6.15	2.92	5.80	2.25	$F(2, 2387)=4.6$; $p=.009$; $\eta^2=.004$
Sexual abuse	5.75	2.15	5.45	1.54	5.53	1.95	*ns*
Emotional neglect	9.25	4.09	9.26	4.62	9.41	4.36	*ns*
Physical neglect	8.41	3.43	7.26	2.97	7.61	2.91	$F(2, 2387)=4.0$; $p=.018$; $\eta^2=.003$
Mental health							
PHQ-4	1.44	2.32	1.48	2.23	1.35	2.12	*ns*

Note: age, sex, unemployment and education > 12 years were considered as covariates*; M*=means; *SD*=standard deviation ; *ns*=not significant

Table III- 4 *Multiple linear regression for physical and emotional forms of child maltreatment*

	Distress ($F(12, 2379)=27.4$; $p=.000$; $R^2=.12$)				Distress ($F(12, 2375)=41.4$; $p=.000$; $R^2=.17$)		
	β	t	p		β	t	p
Age	-.01	-0.58	.56	Age	.04	2.12	.04*
Sex	-.12	-6.35	.00**	Sex	-.09	-4.72	.00**
Education > 12 years	-.01	-0.43	.67	Education > 12 years	-.02	-1.14	.25
Unemployment (yes)	.12	6.08	.00**	Unemployment (yes)	.11	5.82	.00**
1st generation immigrant	-.03	-1.63	.10	1st generation immigrant	.00	-0.09	.93
2nd generation immigrant	.17	0.86	.39	2nd generation immigrant	.00	0.12	.90
Physical neglect	.14	5.87	.00**	Emotional neglect	.06	2.46	.01**
Physical abuse	.19	7.81	.00**	Emotional abuse	.33	13.36	.00**
Physical neglect x 1st generation immigrant	.05	2.18	.03*	Emotional neglect x 1st generation immigrant	.07	3.16	.00**
Physical neglect x 2nd generation immigrant	.04	1.64	.10	Emotional neglect x 2nd generation immigrant	-.03	-1.23	.22
Physical abuse x 1st generation immigrant	-.01	-0.29	.78	Emotional abuse x 1st generation immigrant	-.03	-1.25	.21
Physical abuse x 2nd generation immigrant	-.03	-1.22	.23	Emotional abuse x 2nd generation immigrant	.03	0.99	.32

Note. Non-immigrants serve as reference group; * = $p < .05$; ** = $p \leq .01$

3.4 Discussion

This study contributes to the existing literature on child maltreatment by exploring the self-reported prevalence of childhood neglect and abuse among 1st generation immigrants, 2nd generation immigrants and non-immigrants in a population-based sample. Compared to non-immigrants, 1st generation immigrants reported elevated prevalence rates of physical neglect and physical abuse. There was no difference in depressiveness and anxiety levels between 1st generation immigrants, 2nd generation immigrants and non-immigrants. Experiences of both emotional and physical child maltreatments showed to have a detrimental effect on mental health across all groups. The relationships between emotional, respectively physical neglect and distress were particularly strong among 1st generation immigrants.

3.4.1 Prevalence of child maltreatment among immigrants and non-immigrants

In accordance with recent research in immigration samples, the current study revealed that immigrants reported more frequent exposure to physical maltreatment than participants without migration background (Alink et al., 2013; Euser et al., 2011; Häuser et al., 2011; Schick et al., 2016). In our study this was the case for 1st generation immigrants, while 2nd generation immigrants did not differ from non-immigrants regarding their rates of physical maltreatment. Physical neglect was fairly common among 1st generation immigrants. More than one third of 1st generation immigrants reported having been exposed to at least moderate physical neglect in their childhood, exceeding the levels of physical neglect reported by 2nd generation immigrants (18.8 %) and non-immigrants (21.4 %). Prevalence rates of physical abuse were significantly higher among 1st generation immigrants (10.6 %) compared to non-immigrants (5.9 %) after controlling for difference in their social profiles. The result that 1st generation immigrants were most likely to report multiple forms of child maltreatment, however, was statistically explained by their higher rates of unemployment and lower educational level. The findings underscore the importance to disentangle the effect of immigration status on child maltreatment from other sociodemographic risk factors like lower education level and employment status, which were associated with 1st immigration status like in previous studies (Alink et al., 2013; Euser et al., 2011; Hussey et al., 2006; Schick et al., 2016; Sedlak et al., 2010). Besides, the elevated rates of physical child maltreatment among immigrants might be also explained from a cross-cultural perspective regarding socio-cultural differences in the practice and acceptance of corporal punishment and its continuum to physical abuse in childrearing. Whereas data comparing prevalence of physical abuse around the globe are either lacking or showing tremendous variation between countries due to procedural factors (Stoltenborgh et al., 2013), studies investigating

the prevalence of corporal punishment provided evidence for large differences across countries (Lansford et al., 2010; Lansford & Deater-Deckard, 2012; Runyan et al., 2010). For example, considering the country of origin more 1st generation immigrants had their descent in the Former Soviet Union compared to 2nd immigrants in our sample. A study exploring physical abuse among children from countries of the Former Soviet Union suggested that physical abuse was quite common with prevalence rates of moderate to severe physical abuse varying from 17 % in Latvia to 30 % in Moldova (Sebre et al., 2004). The high prevalence of physical neglect among 1st generation immigrants should be interpreted with caution. Apart from psychometrical issues with the physical neglect subscale, items like "not enough to eat" and "wore dirty clothes" might rather indicate poor living conditions than neglect in their country of origin where 1st generation immigrants grew up. Therefore, it seems plausible, that some of the conditions assessed by the CTQ could be understood as motivations for migration.

As in previous studies, no differences in prevalence rates of sexual abuse were found (Euser et al., 2011; Schick et al., 2016). Relating to emotional forms of child maltreatment, 2nd generation immigrants reported descriptively the highest proportion of at least moderate emotional abuse (8.8 %; 1st generation immigrants: 7.6 %; non-immigrants: 6.1 %). After controlling for socioeconomic variables, the differences were not significant. In the same vein, the prevalence rates of at least moderate emotional neglect were similar across all groups (1st generation immigrants: 13.6 %; 2nd generation immigrants: 11.9 %; non-immigrants: 12.5 %). A cross-cultural meta-analysis indicated that emotional abuse is a universal problem worldwide (Stoltenborgh et al., 2012). However, our finding in an immigration sample contrasts previous studies which have suggested more frequent occurrence of emotional abuse among immigrant children after controlling for other risk factors (Alink et al., 2013; Euser et al., 2011; Schick et al., 2016). A systematic review (Millett, 2016) with predominantly US samples suggested that immigrants were at lower or equal risk for emotional and physical abuse than non-immigrants after controlling for socioeconomic status. Hence, the discrepancies of prevalence of child maltreatment between the studies underscore the importance to consider different immigrant minority groups across countries, generation status, methodological approaches and definitions of child maltreatment. Further, on a political level legal bans and societal norms of corporal punishment in childrearing differ across countries. For example, legal bans in Germany in 2000 had a decreasing effect on permissive attitudes and use of corporal punishment (Plener et al., 2016).

3.4.2 Child maltreatment and mental health

The mental health status was comparable between 1st generation immigrants, 2nd generation immigrants and non-immigrants. Consistent with the literature, both emotional forms and physical

forms of child maltreatment seem to have a detrimental effect on mental health (Li et al., 2016). Particularly among 1st generation immigrants, we found a strong relationship between emotional, respectively physical neglect and distress in adulthood. Forms of abuse were slightly more strongly associated with more depression and anxiety symptoms than forms of neglect across all groups (Taillieu et al., 2016). Therefore, the result suggested that developmental processes are similar among cultural and ethnic groups (Rowe et al., 1994). In contrast, previous studies found that different sociocultural normativity of physical discipline moderates the effect of the relation between corporal punishment and adverse child outcomes (Lansford et al., 2005; Lansford et al., 2004). Although we unfortunately did not assess attitudes about corporal punishment, physical forms of child maltreatment are likely to be potentially traumatic for all groups, even when corporal punishment is endorsed in certain sociocultural contexts (Mbagaya et al., 2013).

3.4.3 Limitations and future research

The strength of the study is our population-based, non-clinical sample comprising adult immigrants, which is scarce within the field of child maltreatment research. However, several limitations should be considered. The research design was limited to retrospective self-reports of child maltreatment which may be prone to recall bias. Yet, empirical research support stability and reliability of retrospective self-reports on childhood traumatization overtime and mood changes (Bernstein et al., 1994; Frampton et al., 2018; Paivio, 2001). Evidence for the cultural equivalence of the CTQ scale scores was given, however, single items were non-invariant across minority groups (Thombs et al., 2007), particularly for the physical neglect subscale (Rodriguez et al., 2019). As noted above, this finding is in line with previous research indicating psychometrical issues like low internal consistency of the physical neglect subscale (cf. Glaesmer, 2016). Therefore, results found on the physical neglect subscale, like in the current study, might be limited. Beside the mentioned studies, the examination of cultural equivalence of the CTQ has not been adequately addressed requiring more psychometrical research in order to ensure that group differences in immigrant samples are not due to measurement bias. A further limitation refers to the underrepresentation of immigrants in our sample which presents a general methodological challenge in the recruitment of migration samples (Martin et al., 2016). Despite applying a random-route procedure in the sampling, the proportion of immigrants in the sample was smaller compared to that in the general population of Germany (Statistisches Bundesamt, 2019). This discrepancy may indicate that only immigrants with sufficient language skills participated in the current study. The immigrant population we explored in the current study are heterogeneous in terms of their country of origin. Although these limitations

reduce the generalizability of the results, this is, to the best of our knowledge, the first German population-based study examining the relationship between immigrant status, child maltreatment and mental health among adult participants.

3.4.4 Conclusion

Adult 1st generation immigrants were more likely to be exposed to physical abuse and physical neglect in their childhood compared to 2nd generation immigrants and non-immigrants. Whereas 1st generation immigrants did not overall report higher depression and anxiety symptoms, the findings suggested that those of 1st generation immigrants who experienced more neglect were particularly vulnerable for higher distress. Hence, practitioners and policy makers should explore and address the potential higher vulnerability among immigrant families by providing adequate support. To propose appropriate culture-sensitive strategies for support, it seems to be important to take socioeconomic disadvantages, possible cultural variation in the understanding about which childrearing practice is deemed to be abusive (Raman & Hodes, 2012), and resilient factors into account. The current study provides a groundwork for future research into the complex relationship between child maltreatment, migration status and mental health: While research on child maltreatment should consider migration status to disentangle different sociodemographic risk factors, transcultural research on immigrants' mental health should pay more attention to early experiences in childhood in line with a life course perspective (Spallek et al., 2011).

4 Study 2: The association between recalled parental rearing behavior and depressiveness: a comparison between 1st immigrants and non-immigrants in the population-based Gutenberg Health Study[6]

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4.1 Introduction

The impact of immigration on mental health has been a major area of research within the field of social and transcultural psychiatry (Butler et al., 2015). The migratory experience is generally considered as a stressful life event (Kizilhan, 2018). The direction and strength of the relationship between migration and mental health outcomes, however, has remained an issue of debate. In a previous analysis of data from the population-based Gutenberg Health Study, we found that after adjusting for sex, age and socioeconomic status 1st generation immigrants reported significantly higher prevalence of depression (OR=1.24), generalized anxiety (OR=1.38), and suicidal ideation (OR=1.44) than 2nd generation immigrants and non-immigrants (Beutel et al., 2016). Reduced mental well-being in immigrant groups has been explained by post-migration factors like psychosocial and economic burdens in the receiving country, perceived discrimination and acculturative stress (Bermejo et al., 2010; De Wit et al., 2008;

[6] Research proposal, statistical analyses plan and the manuscript were conceptualized and written by the author of this dissertation. Following the standardized procedure of the Gutenberg Health Study, the statistical analyses were performed according to the statistical analyses plan by the co-author Andreas Schulz due to GHS's data transfer restriction.

Missinne & Bracke, 2012). While post-migration stressors undoubtedly account for some portion of higher distress among immigrants, the impact of pre-migration experiences has received scant attention in the research on immigrations' mental health. Providing a theoretical framework, Spallek et al. (2011) have suggested a life course approach acknowledging the importance of the critical phase in early childhood and its impact on subsequent mental health outcomes. In line, recent research has argued that aversive experiences in the pre-migration context like trauma exposure significantly increase the risk for acculturative and psychological distress in the post-migration phase (Li, 2016; Li & Anderson, 2016). Yet, empirical studies considering explicitly pre-migration life experiences are still limited (Li & Anderson, 2016; Spallek et al., 2011) and mainly applied to refugee populations conceptualized within a trauma framework (Bogic et al., 2015; Schweitzer et al., 2006). In order to deepen the understanding of the current mental health situation of adult immigrants, however, we need to consider more universal factors of early childhood experiences. For example, a large epidemiology body of literature has confirmed that quality of parenting profoundly shapes later human development and mental well-being (Enns et al., 2002; Overbeek et al., 2007).

4.1.1 Recalled parental rearing behavior

Quality of parenting is reflected in recalled parental rearing behavior which has been identified as an important etiological factor in a vulnerability model of psychopathology (Petrowski et al., 2014; Rikhye et al., 2008). Perceptions of parental rearing have been represented by the three principal dimensions: rejection/punishment, control/overprotection and emotional warmth (Perris et al., 1980). Parental rejection and punishment are characterized by unaffectionate, hostile and/or dismissive parental behavior towards children. Parental control and overprotection refers to a pattern of tight regulation of children's activities and feelings related to blaming, constricting, and interfering behavior with performance-oriented expectations. Emotional warmth refers to a supportive, affectionate, and praising child-parent interaction. In line with attachment theory (e.g. Bowlby, 1973), parenting styles characterized by high parental control and punishment have been associated with mental disorders like depression and anxiety disorder in adult life. In contrast, emotional warmth provided by the caregiver has been considered as a protective factor for mental health (Ihle et al., 2005; Someya et al., 2000; Turgeon et al., 2002; Valiente et al., 2014). However, it is important to acknowledge that parents' rearing beliefs, attitudes, and behaviors are embedded in a certain social-cultural context, pointing to cultural variation in childrearing and its distinctive impact on mental health (Bornstein, 2012; Darling & Steinberg, 1993).

4.1.2 Variation in recalled parental rearing behavior

Empirical studies have shown that family functioning and parenting styles vary between minority groups and native-born families and have a substantial impact on the development of psychopathology like emotional and behavioral problems among migrant youth (Kouider et al., 2014, 2015; Mousavi et al., 2016). Children and adolescents in immigrant families are considered at an increased risk of parenting stress and lower family functioning (Flink et al., 2012; Lansford et al., 2004; Luis et al., 2008) due to structural disadvantages, acculturation stress and intergenerational culture conflicts (Dettlaff et al., 2009; Nomaguchi & House, 2013). The difference in parenting may also be explained by cultural contexts and parents' socialization goals (Lansford et al., 2004). While some childrearing concepts may be universal and non-cultural specific like protecting and nurturing the child within a responsive child-parent interaction (Bornstein, 2012, 2013; Ekmekci et al., 2015), culture-related patterns and values in parenting have been proposed.

A dominant approach in explaining culture differences in parenting is the distinction between individualism and collectivism which can be conceptualized rather as oscillating levels on one dimension than as two opposite poles (Prevoo & Tamis-LeMonda, 2017). Individualistic-oriented cultures tend to emphasize values like self-fulfillment, autonomy, and independence, whereas more collectivism-oriented cultures stress values such as nurturance, compliance, and interdependence (Triandis, 1989). Accordingly, for example the question to which extent to discipline and control children varies between individualistic and collectivism culture backgrounds. Immigrant parents from more collectivistic cultural backgrounds are more likely to use parenting patterns of control and supervision than individualistic Western majority parents (Daglar et al., 2011; Nauck & Lotter, 2015; Rudy & Grusec, 2006). Parental (over)control, however, may not be necessarily associated with rejection or a lack of emotional warmth in collectivistic culture, in which this parental pattern seems to be more normative and thus, without detrimental impact on mental health (Bornstein, 2013; Rudy & Grusec, 2006). For example, parental control was positively correlated with anxiety among adolescents of European and American origin, but negatively associated with anxiety among Asian, Arab or Mexican peers (Luis et al., 2008; Mousavi et al., 2016).

Further, sex-differentiated associations between maternal and paternal rearing and psychological outcomes are underexplored as most studies consider either parents' or children's sex. Gender-related phenomena like differences in behavior and socialization, however, are culturally embedded (Segall et al., 1998) which affect both the conceptions of the parental role and the perception of the child, how they have been raised and treated (Best & Williams, 1997; H.

Nguyen et al., 2011), and not least mental health outcomes. Previous studies in immigrant samples underscored the importance to analyze maternal and paternal rearing behavior separately due to differences in involvement and cultural conceptualization of parental roles (Lahlah et al., 2014; Miconi et al., 2017; H. Nguyen et al., 2011). Particularly the role of fatherhood and its cross-cultural variation have been understudied (McKelley & Rochlen, 2016; Miconi et al., 2017).

4.1.3 The current study

Although research has acknowledged the association between parenting and mental health among immigrant youth and adolescents, to the best of our knowledge, no study has explored the effects of similarities and differences in recalled parental rearing behavior on distress in immigrant women and men. Our large data set gives us the unique and novel opportunity to identify patterns of parental behavior in 1st generation immigrants living in Germany (as compared to non-immigrants) and to relate these patterns to mental health.

Therefore, the current study seeks to address following research questions:

1. How does recalled parental rearing behavior vary between 1st generation immigrants from different countries and non-immigrants?
2. How is recalled parental rearing behavior associated with depressiveness in these subgroups?
3. Do women and men recalled maternal and paternal rearing behavior differently?

Based on theoretical assumptions and empirical evidence from research in immigrant youth, we assumed differences between the groups regarding parental control and overprotection. No differences regarding emotional warmth were expected. It was hypothesized that emotional warmth is a universal protective factor against depressiveness, whereas paternal rejection and punishment is a risk factor for depressiveness. Further, it was assumed that control/overprotection differs in its impact on depressiveness in adulthood. As a systematic understanding of how paternal and maternal rearing behavior contributes to mental health in immigrants is still lacking, sex-differentiated effects are analyzed at an exploratory level considering mothers and fathers separately. All analyses were controlled for socioeconomic status due to its association with immigration status.

4.2 Method

4.2.1 Sample and procedure

The Gutenberg Health Study (GHS) is a population-based, prospective, observational single-center cohort study conducted in Mainz (Wild et al., 2012 for detailed description of the design and the rationale of the GHS). Targeted individuals were randomly selected from the local registries of the city of Mainz/ Mainz-Bingen stratified in equal strata for age decades, sex, and residence. Individuals who gave written informed consent were included in the study. Subjects with insufficient German language skills and those who were unable to visit the study center due to poor physical and/or mental condition were excluded (*n*=734). Among the excluded participants, *n*=186 did not participate due to insufficient language skills. The total sample at baseline consisted of 15,010 participants who were examined between 2007 and 2012. This study is based on the follow-up data with *N*=8,365 participants (*M*=60.0, *SD*=10.7 years). Due to different socialization processes and different cultural backgrounds, *n*=1,104 2nd generations immigrants were excluded from analysis. Thus, the analysis of this study based on a sample including *N*=7,261 participants.

Migration and generation status were defined according to the German micro census: Participants who were born abroad and migrated to Germany after 1949 were considered as 1st generation immigrants (*n*=743). Participants reported their country of origin, respectively those of their mother and father. Due to the small numbers of single countries, three groups of origin were combined according former procedures and geographical, historical and religious characteristics (cf. Brettschneider et al., 2015). The group "East Europe" (n=223) included Poland, Czech Republic, Slovakia, former Czechoslovakia, Slovenia, Rumania, Bulgaria and Hungary. Countries of the Former Soviet Union (Russia, Armenia, Azerbaijan, Belarus, Georgia, Latvia, Kazakhstan, Kirgizstan, Lithuania, Uzbekistan, Moldova, Ukraine, Estonia, Lithuania) were combined in the Group "Former Soviet Union" (n=99). The third group "Arabic- Islamic countries" (n=108) comprised Turkey, Afghanistan, Algeria, Bangladesh, Egypt, Gambia, Guinea-Bissau, Jordan, Indonesia, Iraq, Kuwait, Lebanon, Morocco, Pakistan, Senegal, Syria, and Tunisia. *N*=313 1st generation immigrants came from other countries. Additionally, information about the time of migration and the primarily spoken language at home were assessed. In the sample, *n*=6,518 non-immigrants were considered as reference group.

4.2.2 Ethical Statement

The ethics committee of the Statutory Physician Board of the State of Rhineland-Palatinate and the local and federal data safety commissioners approved the current study and its procedure.

The present study has followed the Declaration of Helsinki and principles outlined in recommendations for Good Clinical Practice and Good Epidemiological Practice.

4.2.3 Questionnaires

Sociodemographic variables included sex, age in years, living with partner (no/yes), employment (no/yes), and income in Euro. Education, profession and income were used to calculate the socioeconomic status (SES) ranging from 3 to 21 (Lampert et al., 2013).

Adult's perception of paternal and maternal rearing styles and behavior in childhood were measured by the ultra-short screening version of The Recalled Parental Rearing Behavior Questionnaire (Fragebogen zum erinnerten Elterlichen Erziehungsverhalten, FEE; Perris et al., 1980; Schumacher et al., 1999). Twelve items assessed the frequency of certain experiences in childhood on a Likert-Scale from 0="no, never" to 3="yes, always". Each item was scored for mothers and fathers separately. Three independent dimensions were calculated for each parent: 1) Paternal/Maternal Rejection and Punishment (Cronbach α=.75), 2) Paternal/Maternal Control and Overprotection (Cronbach α=.65), and 3) Paternal/Maternal Emotional Warmth (Cronbach α=.82). Following the standardized instruction of the scale, no specific instruction for single-parent or (half-) orphans was provided. The reliable and valid scale showed scalar invariance across sex and age (Petrowski et al., 2014; Petrowski et al., 2012). In addition, the questionnaire has been applied in different countries confirming cross-cultural invariance (Arrindell et al., 2005; Arrindell et al., 2001; Deković et al., 2006).

Depressiveness was assessed with the established Patient Health Questionnaire-9 (PHQ-9; Kocalevent et al., 2013) The scale has been shown to be psychometrically equivalent across immigrant groups (Tibubos et al., 2018). Cronbach alpha in the present study was = .82. Participants rated nine items describing criteria of depression on a Likert-Scale from 0="not at all" to 3="nearly every day".

4.2.4 Statistical analysis

For the characteristics of the study population, variables are presented as frequencies or means with standard deviations. χ^2 tests, respectively *t*-tests were applied for group comparisons. Addressing the first research question, in the first step all 1st generation immigrants in the current sample were analyzed. In the second step, the three subgroups from different countries of origin (Eastern Europe, Former Soviet Union and Arabic- Islamic countries) were explored. Multiple linear regressions with depressiveness as outcome variable were analyzed separately for each subscale of the recalled parental rearing behavior questionnaire adjusting for socio-demographic and migration-related variables. Both paternal and maternal parenting variables were

included. *P-value* < .05 were considered as worthwhile for further interpretation. Due to the large sample, the exactly reported p-values should be interpreted descriptively. Hence, effect sizes (Cohen's d) were calculated. Statistical analyses were performed using R version 3.5.1.

4.3 Results

Table IV- 1 gives an overview of sociodemographic variables, mental health and recalled parental rearing behavior comparing 1st generation immigrants and non-immigrants. As Table IV-1 shows, 7,261 participants were in included with n=743 of the sample being 1st generation immigrants. 1st generation immigrants were more likely women and younger. They had a lower socioeconomic status and were more often unemployed than Germans without migration background. There was a significant difference in the mental health status: 1st generation immigrants reported to feel more often depressed. Further, 1st generation immigrants differed from non-immigrants with respect to recalled parental rearing behavior: 1st generation immigrants recalled their mothers both as more controlling and overprotecting and as more rejecting and punishing. There was no overall difference regarding maternal emotional warmth. Regarding their fathers, 1st generation immigrants reported more paternal control/overprotection and paternal emotional warmth compared to the reference group. No significant difference emerged on the paternal rejection and punishment scale.

Table IV- 1 *Demographic characteristics, mental health and recalled parental rearing behavior: comparison between 1st generation immigrants and non-immigrants*

	1st generation Immigrants (n=743)	Non-Immigrants (n=6,518)	χ^2/t	*p*	*d*
Sociodemographic					
Sex (women)	52.9 %	48.5 %	5.1	**.022**	
Age	57.4 (10.1)	60.3 (10.7)	7.5	**< .0001**	
SES	12.31 (4.25)	12.73 (4.48)	2.3	**.021**	.09
Unemployment (yes)	3.9 %	1.0 %	40.2	**< .0001**	
Partnership (yes)	86.3 %	85.9 %	.04	.83	
Mental heath					
Depressiveness PHQ-9	5.38 (4.12)	4.23 (3.57)	-6.9	**<.0001**	.32
Parental rearing behavior					
Maternal Rejection & Punishment	0.33 (0.50)	0.28 (0.45)	-2.3	**.020**	.11
Maternal Control & Overprotection	0.73 (0.65)	0.55 (0.56)	-6.6	**< .0001**	.32
Maternal Emotional Warmth	1.34 (0.75)	1.34 (0.70)	-.04	.97	-
Paternal Rejection & Punishment	0.30 (0.47)	0.29 (0.46)	-.28	.77	
Paternal Control & Overprotection	0.58 (0.59)	0.42 (0.50)	-6.2	**< .0001**	.31
Paternal Emotional Warmth	1.06 (0.75)	0.98 (0.72)	-2.5	**.0099**	.11

Note. Data are presented in means and standard deviations in brackets or in frequencies; *d* = Cohen's d.

Among 1st generation immigrants, the largest group were immigrants from Eastern Europe. They were in average 25 years old when they immigrated to Germany. The majority of immigrants from Eastern Europe (85 %) speaks German at home. The second largest group were participants who were born in Arabic Islamic countries. At the time of migration, they were about 20 years old. Approximatively half of them stated that German is the preferred spoken language at home. In the group of immigrants from the Former Soviet Union 58% reported speaking German at home. While they have been living almost 10 years less in Germany compared to the other cultural groups, they were comparatively older at the time of migration (*M*=34 years).

Table IV- 2 compares sociodemographic variables, mental health and recalled parental rearing behavior between 1st generation immigrants from Eastern Europe, Former Soviet Union and

Arabic-Islamic countries with non-immigrants as reference group. Whereas no difference between immigrants from Eastern Europe and non-immigrants regarding sociodemographic variables was found, immigrants from the Former Soviet Union and Arabic-Islamic countries were younger, more often unemployed and had a lower socioeconomic status than non-immigrants. Irrespective of the country of origin, immigrants reported significantly higher levels of depressiveness than Germans without migration background. Further, they consistently recalled both their mothers and fathers as more controlling and overprotecting compared to non-immigrants. Additionally, differences were found between immigrants from Eastern Europe and non-immigrants in maternal rejection with higher levels reported by participants born in Eastern Europe. Immigrants from Arabic-Islamic countries showed the lowest mean scores on the paternal rejection and punishment scale.

The analyses of sex differences in recalled parental rearing behavior within the three subgroups were explorative due to the small sample sizes (see Table IV- 3). The results showed that women from Eastern Europe and Former Soviet Union remembered their mothers as more rejecting and punishing than their male counterparts. Women from Arabic-Islamic countries reported higher levels of paternal overprotection and paternal emotional warmth than men from Arabic-Islamic countries.

Table IV- 2 *Comparing 1st generation immigrants from Eastern Europe, Former Soviet Union and Arabic- Islamic countries with non-immigrants*

	Immigrants from Eastern Europe (n=223)	*t; p*	*d*	Immigrants from Former Soviet Union (n=99)	*t; p*	*d*	Immigrants from Arabic-Islamic countries (n=108)	*t; p*	*d*	Non-Immigrants (n=6,518)
Sociodemographic										
Sex (women)	53.4 %	*ns*		59.6 %	4.41; **.036**		37.0 %	5.09; **.024**		48.5 %
Age	59.2 (10.8)	*ns*		54.9 (9.3)	5.72; **<.0001**	.50	53.0 (8.8)	8.50; **<.0001**	.68	60.3 (10.7)
SES	12.56 (4.17)	*ns*		11.83 (3.97)	2.19; **.030**	.20	11.53 (4.77)	12.73; **.015**	.27	12.73 (4.48)
Unemployment (yes)	1.3 %	*ns*		8.1 %	37.2; **<.0001**		5.6 %	16.2; **<.0001**		1.0 %
Partnership (yes)	88.9 %	*ns*		85.9 %	*ns*		82.8 %	*ns*		85.9 %
Migration-related variables										
Years living in Germany	33.91 (12.64)	-		21.04 (7.72)	-		32.84 (9.61)	-		
Speaking German at home*	85.5 %	-		58.4 %	-		52.9 %	-		
Mental health										
Depressiveness (PHQ-9)	5.42 (3.84)	-4.44**;<.0001**	**.33**	5.96 (4.11)	4.02; **.0001**	.48	6.58 (5.27)	-4.06; **.0001**	.65	4.23 (3.57)
Parental rearing behavior										
Maternal Rejection&Punishment	0.35 (0.48)	-2.05; **.041**	.15	0.35 (0.51)	*ns*		0.24 (0.51)	*ns*		0.28 (0.45)
Maternal Control&Overprotection	0.69 (0.61)	-3.16; **.002**	.25	0.77 (0.72)	2.73; **.008**	.39	0.82 (0.75)	-3.20; **.0019**	.48	0.55 (0.56)
Maternal Emotional Warmth	1.35 (0.69)	*ns*		1.30 (0.77)	*ns*		1.19 (0.73)	*ns*		1.34 (0.70)
Paternal Rejection & Punishment	0.35 (0.49)	*ns*		0.23 (0.41)	*ns*		0.16 (0.37)	3.01; **.0035**	.28	0.29 (0.46)
Paternal Control & Overprotection	0.56 (0.57)	-3.21; **.0015**	.28	0.54 (0.52)	2.03; **0.46**	.24	0.71 (0.73)	-3.38; **.0012**	.58	0.42 (0.50)
Paternal Emotional Warmth	1.02 (0.71)	*ns*		1.14 (0.77)	*ns*		1.08 (0.75)	*ns*		0.98 (0.72)

Note. *d* = Cohen's d; *ns*= not significant

Table IV- 3 *Sex differences within immigrants from Eastern Europe, Former Soviet Union and Arabic-Islamic countries*

	Immigrants from Eastern Europe				Immigrants from Former Soviet Union (n=99)				Immigrants from Arabic-Islamic countries (n=108)			
	Women (n=95-115)	Men (n=82-99)	*t;p*	d	Women (n=38-46)	Men (n=29-37)	*t;p*	d	Women (n=23-32)	Men (n=47-52)	*t;p*	*d*
Parental rearing behavior												
Maternal Rejection& Punishment	0.42 (0.55)	0.27 (0.37)	-2.39; **.017**	.32	0.49 (0.60)	0.18 (0.30)	.3.04; **.003**	.63	0.32 (0.53)	0.20 (0.50)	*ns*	
Maternal Control&Overprotection	0.73 (0.66)	0.64 (0.55)	*ns*		0.74 (0.76)	0.81 (0.67)	*ns*		0.93 (0.77)	0.77 (0.74)	*ns*	
Maternal Emotional Warmth	1.29 (0.76)	1.42 (0.61)	*ns*		1.28 (0.77)	1.33 (0.65)	*ns*		1.23 (0.74)	1.17 (0.73)	*ns*	
Paternal Rejection& Punishment	0.32 (0.50)	0.38 (0.50)	*ns*		0.26 (0.49)	0.19 (0.27)	*ns*		0.18 (0.45)	0.15 (0.33)	*ns*	
Paternal Control& Overprotection	0.55 (0.62)	0.57 (0.52)	*ns*		0.46 (0.49)	0.65 (0.54)	*ns*		0.91 (0.75)	0.61 (0.71)	*ns*	
Paternal Emotional Warmth	1.05 (0.75)	0.98 (0.66)	*ns*		1.16 (0.89)	1.12 (0.59)	*ns*		1.33 (0.76)	0.95 (0.71)	-.2.09; **.042**	.52
Mental health												
Depressiveness (PHQ-9)	5.89 (3.71)	4.86 (3.93)	*ns*		6.56 (4.63)	5.05 (3.01)	*ns*		8.07 (6.10)	5.66 (4.51)	*ns*	

Note. *ns*=not significant

In order to investigate whether the impact of parental rearing behavior on depressiveness varies across the groups, multiple regression analyses were conducted. For this purpose, separate regression models stratified by the subscales of recalled parental rearing behavior were performed with depressiveness as outcome variable (see Table IV- 4). Sociodemographic variables were included in the models as control variables. The regression models were also adjusted for migration-related factors (speaking German at home) and country of origin. A dummy variable for the item "speaking German at home" with the category "does not apply" for non-immigrants was created and included in the model. Main effects of maternal and paternal rearing behavior were explored. The specific influence of parental rearing behavior in each group (Eastern Europe, Former Soviet Union, Arabic-Islamic countries; non-immigrants as reference group) were considered in the regression models by adding interaction terms of country of origin and maternal, respectively paternal rearing behavior. Results of the regression models revealed that being a woman, younger age, lower SES and not having a partner were risk factors for depressiveness. Across all models, paternal and maternal rejection and punishment as well as paternal and maternal control and overprotection were significantly associated with higher depressiveness, whereas paternal and maternal emotional warmth was negatively associated with depressiveness. Looking on each model more closely, the results suggested that the direction of the relationship between paternal rearing behavior and depressiveness differed between the groups: The results obtained from the regression model considering maternal and paternal control/ overprotection suggested that maternal control/ overprotection was related with higher scores of depressiveness among immigrants from Arabic-Islamic countries. However, paternal controlling and overprotecting behavior seems to be a protective factor for depressiveness in immigrants from Former SU. Paternal rejection/punishment was associated with higher levels of depressiveness among immigrants from Arabic-Islamic countries, the same direction like for non-immigrants. In contrast, for immigrants from Eastern Europe paternal rejection/punishment had an opposite impact on depressiveness: Recalled experiences with a more rejecting and punishing fathers was associated with lower levels of depressiveness. In the regression model with parental emotional warmth as independent variable, no interaction between parental emotional warmth and country of origin emerged. In this model, not speaking German at home was correlated with depressiveness.

Table IV- 4 *Multiple linear regression for parental control & overprotection, parental rejection & punishment and parental emotional warmth*

	Depressiveness		
Parental Control (C) & Overprotection (OP)			
R^2=.09; F(17,6043)=33.8; p< .0001	*b*	*t*	*p*
Age	-.43	-9.65	**< .0001**
Sex (women)	.86	9.60	**< .0001**
SES	-.08	-7.82	**< .0001**
Partnership (yes)	-.64	-4.76	**< .0001**
Eastern Europe	1.1	2.63	**.01**
Arabic-Islamic countries	.80	1.23	.22
Former Soviet Union	1.9	2.94	**.003**
Not Speaking German at home (yes)	.70	1.70	.09
Maternal Control & Overprotection	.78	7.13	**< .0001**
Paternal Control & Overprotection	.42	3.38	**.001**
Maternal C&OP in Eastern Europe	.28	0.45	.65
Maternal C&OP in Arabic-Islamic countries	2.4	3.19	**.001**
Maternal C&OP in Former Soviet Union	.96	1.07	.29
Paternal C&OP in Eastern Europe	-.73	-1.11	.27
Paternal C&OP in Arabic-Islamic countries	-1.4	-1.90	.06
Paternal C&OP in Former Soviet Union	-3.1	-2.63	**.01**
Parental Rejection (R) & Punishment (P)			
R^2=.09; F(17,6109)=37.0; p< .0001	*b*	*t*	*p*
Age	-.45	-10.3	**< .0001**
Sex (women)	.91	10.2	**< .0001**
SES	-.06	-6.33	**< .0001**
Partnership (yes)	-.76	-5.70	**< .0001**
Eastern Europe	1.2	3.30	**.001**
Arabic-Islamic countries	1.1	2.26	**.02**
Former Soviet Union	1.3	2.58	**.01**
Not Speaking German at home (yes)	.63	1.65	.10
Maternal Rejection & Punishment	.80	6.71	**< .0001**
Paternal Rejection & Punishment	.92	7.94	**< .0001**
Maternal R&P in Eastern Europe	.27	0.45	.65
Maternal R&P in Arabic-Islamic countries	-1.0	-1.22	.22
Maternal R&P in Former Soviet Union	-.59	-0.51	.60
Paternal R&P in Eastern Europe	-1.2	-2.04	**.04**
Paternal R&P in Arabic-Islamic countries	4.4	3.57	**.0004**
Paternal R&P in Former Soviet Union	.31	0.25	.80

Parental Emotional Warmth (EW)			
R^2=.07; F(17,5904)=27.1; p< .0001	*b*	*t*	*p*
Age	-.51	-11.2	**< .0001**
Sex (women)	.98	10.4	**< .0001**
SES	-.07	-6.93	**< .0001**
Partnership (yes)	-.72	-5.23	**< .0001**
Eastern Europe	.81	1.33	.18
Arabic-Islamic countries	1.1	1.34	.18
Former Soviet Union	1.1	1.18	.24
Not Speaking German at home (yes)	.99	2.41	**.02**
Maternal Emotional Warmth	-.30	-3.54	**.0004**
Paternal Emotional Warmth	-.37	-4.41	**< .0001**
Maternal EW in Eastern Europe	-.38	-0.85	.40
Maternal EW in Arabic-Islamic countries	1.1	1.38	.17
Maternal EW in Former Soviet Union	-.89	-1.02	.31
Paternal EW in Eastern Europe	.65	1.49	.14
Paternal EW in Arabic-Islamic countries	-.73	-0.88	.38
Paternal EW in Former Soviet Union	.90	1.06	.29

Note. C&OP = Control & Overprotection, R&P = Rejection & Punishment, EW = Emotional Warmth; dummy variable (speaking German at home: does not apply) is not presented because not significant

4.4 Discussion

Despite the theoretical notion and empirical research on adolescents from immigrant families that childrearing differs across socio-cultural contexts (Kouider et al., 2014, 2015), knowledge of variation in recalled parenting pattern and its distinctive impact on mental health in adult immigrants is limited. In line with etiological models of vulnerability, the findings of this population-based study affirmed that recalled rearing behavior was associated with depressiveness in adults across all groups. Nonetheless, the results provide evidence for differences between 1st generation immigrants from different countries of origin and non-immigrants in their memories of parents' childrearing pattern and how these childhood experiences affected their adult mental health.

4.4.1 Parental control and overprotection

Regarding our first research question and in line with our hypothesis, 1st generation immigrants consistently remembered both their mothers and fathers as more controlling and overprotective compared to non-immigrants. Consistent evidence indicates that higher levels of control over children's behavior and demanded obedience are more common in collectivist-oriented cultures (e.g. Turkey, Russia) emphasizing interdependence compared to more individualist-oriented cultures emphasizing independence (Matsumoto et al., 2008). Parental control in collectivist-oriented cultures aims to teach children to inhibit the expression of their own needs in order to attend to the needs of their cultural in-group maintaining group harmony (Rudy & Grusec, 2006). Differences in parental control were found both between immigrant parents compared to Western majority parents (Luis et al., 2008; Mousavi et al., 2016) as well as in cross-cultures studies (Deater-Deckard et al., 2011; Rudy & Grusec, 2006). Variations in parental control and overprotection are undoubtedly influenced by cultural norms and values. An alternative explanation for the association between immigration status and parental control might be a changing rearing pattern due to the experience of migration. Research suggested that immigrant parents impose also higher control and overprotection over their children resulting from their own feelings of anxiety and insecurity as they raise their children in a cultural environment which might be dissimilar from the one in which they grew up themselves (Daglar et al., 2011; Prevoo & Tamis-LeMonda, 2017). Yet, in our sample most participants had immigrated as adults, having been raised in the same cultural context as their parents. Regarding sex differences, no differences in parental control between women and men were found. This result contrasted those from a recent meta-analysis indicating slightly higher parental control over boys than over girls

but with a negligible effect size after controlling for the samples' ethnicity and socioeconomic status (Endendijk et al., 2016).

4.4.2 Parental rejection and punishment

Compared to participants born in Germany, 1st generation immigrants recalled their mothers slightly more rejecting and punishing. Particularly women from Former SU and Eastern Europe reported the highest levels of maternal rejection and punishment. Hence, the findings of the current study do not support previous research suggesting general harsh and restrictive childrearing behavior among immigrant parents from the Former SU (Shor, 2000), but point to a gender effect. Although we found no overall difference in parental rejection and punishment between 1st generation immigrants and non-immigrants, the analyses considering countries of origin revealed that participants in the Arabic-Islamic group reported the lowest levels of parental rejection and punishment. This finding contrasts the notion of fathers' traditional disciplinarian role in Arabic-Islamic context (Lahlah et al., 2014; Renzaho et al., 2011). In the same vein, the exploratory analyses of sex differences suggested that particularly women from an Arabic-Islamic country reported the highest levels of parental emotional warmth.

4.4.3 Parental emotional warmth

Whereas 1st generation immigrants in the sample did not differ in their remembrance of maternal emotional warmth compared to non-immigrants, they recalled their fathers as emotionally warmer. However, no difference in paternal warmth was identified across the three groups. The findings confirm our hypothesis that an affectionate, supportive and sensitive responsive parental behavior seems to be a universal childrearing concept (Bornstein, 2012; Mesman et al., 2016; Miconi et al., 2017).

4.4.4 Recalled rearing behavior and depressiveness

With respect to our second research question, our findings suggested that the relationship of emotional warmth and depressiveness was similar between the groups, whereas paternal control, respectively paternal rejection showed a different pattern of relatedness to mental health among the groups. Regarding their mental health status, 1st generation immigrants felt consistently more depressed than non-immigrants with immigrants from Arabic-Islamic countries reporting the highest level of depressiveness across the groups (Beutel et al., 2016 for detailed discussion of this finding). After controlling for socioeconomic status, which varies between groups of origin, depressiveness was associated both with parental rejection and punishment and with parental control and overprotection, and negatively associated with parental emotional

warmth. In line with attachment theory (e.g. Bowlby, 1980), emotional warmth seems to be protective for mental health and functioning irrespective of immigration status and culture. Numerous studies across different nations and ethnic minority groups have shown that a warm, carrying and accepting child-parent interaction is associated with psychological adjustment (see Rohner & Khaleque, 2010 for a meta-analysis). In contrast, parental control and rejection can result in the internalization of a dysfunctional inner working models of the self and others (Otani et al., 2016) and induce a feeling of helplessness (Garber & Flynn, 2001). Consequently, the individual's perceived mastery of coping with emotional stress exposure is decreased, elevating the risk for depressiveness in adulthood (Beutel et al., 2017; Petrowski et al., 2014). However, the findings suggest that meaning and consequences of parental control may be more prone for cultural variance (Deater-Deckard et al., 2011). Parental control reflects a more normative child-drearing script in collectivist-oriented cultures and does not necessarily harm individuals' mental health (Dwairy et al., 2006; Kagitcibasi, 2005).

Our findings suggest differences in the meaning and consequences of recalled fathers' rearing behavior. Immigrants from Former SU, who recalled their fathers as controlling and overprotecting, reported less depressiveness. Descriptively, in all immigrant groups paternal control and overprotection was negatively associated with depressiveness compared to non-immigrants, whereas maternal control was positively related to depressiveness across all groups. In accordance, Dwairy and Achoui (2010) found that fathers' rather than mothers' control had an impact on psychological disorder among adolescent in the west, but not in the east. A possible explanation might be that fathers', but not mothers' controlling behavior is experienced as involvement fostering the child-father relationship. The positive impact of parental involvement on the child's well-being has been demonstrated in immigrant families (Leyendecker, 2016; Leyendecker et al., 2018). The finding that a rejecting father seems to have a particularly negative impact on the mental health of immigrants from Arabic-Islamic countries underscores the unique contribution of fathers. Somewhat counterintuitive was the correlation between paternal rejection and depressiveness among immigrants from Eastern Europe. Although speculative, this result might be explained by an interaction effect with the participants' sex as in previous studies a strict and authoritarian father reduced the risk for externalizing symptoms, but only for males (Enns et al., 2002; Lahlah et al., 2014). To disentangle the complex relationship between parents' and children's sex, culture and mental health further research in immigrant samples is required. Nonetheless, the findings of the current study yielded evidence for the assumption that the roles of fathers might differ from the roles of mothers across cultures and minority groups (Dwairy & Achoui, 2010), highlighting the importance to consider perceived fathers

rearing behavior in future research in immigrants (Leyendecker et al., 2018; Strier & Roer-Strier, 2010).

4.4.5 Limitations and further research

The current study adds to the existing literature which is primarily based on immigrant youth by studying the complex relationship between immigration, mental health and parenting in adults in a population-based study. However, several limitations of the current study are worth mentioning and might be considered in future research. First, the research design was limited to retrospective self-reports of parental rearing behavior facing the issue of recall bias. Retrospective assessment raises the questions whether parenting experiences are an etiology factor for depression or can be explained by a negative bias of perception in depressed individuals (Gerlsma et al., 1992). Yet, empirical research gave evidence for stability of recalled parental behavior across mood changes and over time (Richter & Eisemann, 2001; Wilhelm et al., 2005). The results should be interpreted as subjective mental representations and less as actual experiences of parental rearing during childhood, reflecting a subjective truth which is in line with therapeutic approaches. Despite the notion that parenting has an important impact on mental health in adulthood, the explained variances of depressiveness in the current study is modest which is in line with former studies in adults' samples (Overbeek et al., 2007).

A further limitation is related to a selection bias in our sample which presents a general methodological challenge of surveying populations of immigrant origin (Mendez & Font, 2014): Only immigrants with sufficient language skills were able to participate in the study. As language proficiency and social participation such as the willingness to participate in the current study are key indicators for integration (Martin et al., 2016), it can be assumed that more separated and marginalized immigrants are underrepresented in the sample examined. From research on acculturation attitudes and parenting behavior it is known that immigrated mothers who are more integrated in the culture of the receiving society tend to adapt their child rearing practices to attitudes and behavior of their non-immigrated counterparts (Durgel et al., 2009; Yagmurlu & Sanson, 2009). Hence, immigrated parents oriented strongly towards traditional child rearing values of their country of origin might be excluded in the study leading to potential underestimation of differences in parenting pattern.

Second, despite the strength of the study to consider the unique contribution of mothers and fathers separately, the study is limited by the lack of additional information on characteristics of the family structure in which the child has grown up. In many cultures, caregivers other than parents are involved in childrearing shaping child development (Bornstein & Sawyer, 2006). For example, the applied scale did not measure single parenting or orphanhood. Hence, we

neither considered single parenting nor having more children which both tend to result in higher levels of stress with potential impact on parenting (Liang et al.; Östberg & Hagekull, 2000). This is particular important considering that immigrant mothers have on average slightly more children than native German mothers (Pötzsch, 2018), but lower income.

Even though the sampling was based on a random procedure, which is recommend particularly in cross-cultural research (Berry et al., 2002), a third limitation refers to the combination of immigrants from different countries of origin within one subgroup which was due to the small number of cases from single countries. Therefore, the interpretation and generalizability of our results are limited, although we applied a standard operationalization of migration status according to German micro census. The immigrant population within the subgroups compared in the present study are heterogeneous in terms of cultural identify, language, social situation and acculturation style. The heterogeneity of people and the within-culture variation in one group should be bear in mind while interpreting the results (Prevoo & Tamis-LeMonda, 2017). In the same vein, the recalled rearing practices of the German population without migrations background, which served as reference group, should not be interpreted as "normative" benchmark, particularly when considering the historical German background (Petrowski et al., 2012). Hence, the current findings cannot be generalized uncritically to other socio-cultural contexts and immigrant groups (Bornstein, 2012, 2013). Hence, the current results cannot be applied to 2nd generation migration as rearing patters may change over immigrated generations influenced by different acculturation and socializations processes (Driscoll et al., 2008). In order to develop a full picture of the relationship between migration, childrearing behavior and mental health, additional studies with 2nd generation migration will be needed.

4.4.6 Conclusion

The results of the current study suggested variation in recalled parenting pattern and its distinctive association with mental health among adult immigrants in Germany. Parental warmth seems to be a universal protective factor against depressiveness, whereas the impact of parental control on mental health might be more likely culturally influenced. The current findings pointed to the unique contribution of fathers' rearing behavior on mental health, particularly in immigrant samples. Maternal and paternal roles might differ across cultures and minority groups.

5 Study 3: The relationship between acculturation and mental health of 1st generation immigrant youth – does sex matter?

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5.1 Introduction

In many societies worldwide, the proportion of immigrant youth is steadily growing. According to Federal census statistics (Statistisches Bundesamt, 2019), the proportion of immigrants in the German population under 18 years has risen to about 36 % in 2017. As immigrant youth are confronted with various challenges affecting their mental health like acculturative stress and social disadvantages (Kouider et al., 2015), promotion of their psychological and sociocultural adaptation has become a central social and political issue. In addition to accomplish age-salient developmental tasks like their non-immigrant peers, immigrant youth need to master acculturative tasks such as the adaptation to a new cultural environment (Motti-Stefanidi et al., 2012; Reitz et al., 2014). Although there is evidence that the majority of young immigrants adapt well to their new intercultural situation (Motti-Stefanidi & Masten, 2017), research has consistently demonstrated that immigrant adolescents are at increased risk for psychological distress (Dimitrova et al., 2016; Hölling et al., 2008; Nakash et al., 2012; Shoshani et al., 2016). This is particularly the case for 1st generation immigrants (Brettschneider et al., 2015; Flink et al., 2012; Kouider et al., 2014). Consistent with the literature, a representative school survey with 8518 pupils aged 12 to 19 years attending different school types yielded differences in sociocultural and psychological adaptation between adolescents with migration background and their majority peers. 1st generation immigrants scored higher on internalizing and externalizing problems than 2nd generation immigrants or non-immigrants. The differences, however, were small. Regarding sociocultural adaptation, 1st generation immigrants experienced more educational disadvantages (e.g. more frequent grade repetitions). Regardless of immigration background, young women reported more internalizing problems than their male counterparts. No sex difference emerged for externalizing problems (Klein et al., 2017; see 2.3.3).

5.1.1 Mental health, acculturation and sex

In order to cope with acculturative stress, different acculturation patterns, describing beliefs, attitudes and behaviors related to the culture of origin and the host culture, are applied. On the basis of the bi-dimensional model, Berry (1997) proposed four acculturation strategies: *Integration* describes a strong involvement in both the culture of origin and the host culture. A*ssimilation* refers to a strong orientation to the culture of the receiving society combined with low maintenance of the heritage culture. *Separation* is characterized by strong maintenance of the heritage culture and limited intercultural contact to the host society. *Marginalization* is defined by low involvement in both cultures. Previous research demonstrated that immigrant youths' mental health is related to their acculturation strategy (Berry et al., 2006). Integrated acculturative patterns have been identified as protective factors for psychological adaptation, while marginalization was associated with poor health outcomes (Berry & Hou, 2016; Berry et al., 2006; Nakash et al., 2012). For example, in a recent study of 416 adolescents (M_{age}=16.07, SD_{age}=2.90; 71 % immigrants) Kupper et al. (2018) found higher levels of depressive symptoms among immigrants compared to their non-immigrant peers. Symptom burden was in turn related to participants' acculturation pattern. Immigrants who felt more strongly oriented towards the host culture reported less severe levels of depression. Orientation towards the culture of origin, however, was not related to the depression score. Additionally, the study suggested a difference between girls and boys concerning the strength of the relationship: the negative relation between the orientation towards the host culture and depressive symptoms was more pronounced for boys than for girls. Likewise, previous research has recognized the pivotal role of gender in the relationship between immigrant youths' mental health and acculturation orientation (Hilario et al., 2014). In immigrant youth, there is evidence that girls showed better sociocultural adaption (e.g. school success) while boys had better psychological adjustment (Berry et al., 2006; Motti-Stefanidi et al., 2008). Regarding acculturation orientation, some studies found no gender differences (Hilario et al., 2014; Kupper et al., 2018). In contrast, other studies have provided evidence that girls more often reported an integrated acculturation pattern and a stronger involvement in the host culture, while boys were more orientated towards their ethnic culture of origin or showed an inconsistent acculturation orientation (Berry et al., 2006; Motti-Stefanidi et al., 2008). Studies have suggested that for girls, factors indicating social integration like social support (Turjeman et al., 2008) or school connectedness (Hilario et al., 2014) were important predictors of their mental well-being. As mentioned above, acculturation experiences seemed to play a more salient role for boys' mental health status (Kupper et al., 2018; Turjeman et al., 2008). As the majority of studies explored internalizing problems as indicators for mental health, much less is known about the relationship between acculturation

style, gender and externalizing symptoms. Externalizing problems like conduct problems, however, are highly prevalent among adolescents (Hölling et al., 2007; Ravens-Sieberer et al., 2008) and thus important to assess within a sample of this age group.

5.1.2 The current study

The purpose of the current study is to deepen the understanding of the mechanism underlying our previous empirical finding which indicated reduced mental health of 1st generation immigrants. Given the inconsistent results, the associations between acculturation strategy, mental health and sex among 1st generation immigrant adolescents were explored using self-reported data of a representative school survey. Beyond exploring internalizing problems, this study contributes to the existing research by additionally including externalizing problems as a common form of manifestation of distress in adolescents.

Therefore, the current study seeks to address following research questions:

1. How do 1st generation immigrant girls differ from 1st generation immigrant boys in regard to their acculturation strategy?
2. How are acculturation strategies associated with mental health (internalizing and externalizing problems) among girls and boys after adjusting for age and educational level?

Based on theoretical assumptions and empirical evidence from previous research, we assumed that separation and marginalization are associated with reduced mental health, while integration is a protective factor against distress. Due to previous inconsistent findings, we examined differences between girls and boys regarding acculturation strategy at an exploratory level. It was hypothesized that the strength of the relationship between acculturation strategy and mental health differ between girls and boys, with a stronger impact of acculturation difficulties on boys' mental health.

5.2 Method

5.2.1 Sample and procedure

The current study is based on a subsample of 1st generation immigrants participating in a representative school survey. Self-reported data was collected in randomly selected schools stratified by school type (secondary school, intermediate secondary school, comprehensive school, grammar school, vocational school), school grade and area selected by number of inhabitants (< 10 000 inhabitants, > 10 000 and < 100 000 inhabitants, > 100 000 inhabitants) in North

Rhine-Westphalia and Rhineland Palatinate in 2012. Each participant who provided informed consent completed the questionnaires in their schools in the presence of a trained investigator. For participants aged under 14 years an additional informed consent of their parents was required.

N=440 1st generation immigrants were analyzed in the current study. Participants with missing data on the acculturation scale (n=57) were not considered in the analyses. Dropout analyses revealed that participants with missing values did not differ from the analyzed sample regarding sex, age, country of origin and mental health. 2nd generation immigrants were prior excluded from the study due to anticipated different socialization processes.

5.2.2 Ethic statement

The study design, procedure and applied questionnaires were approved by the institutional ethics review boards. Three positive ethical votes were required and received. The relevant ethical chambers of Rhineland-Palatinate (Mainz, Germany) and both ethical chambers for North Rhine-Westphalia, specifically the ethical chamber Westfalen-Lippe (Münster, Germany) and the ethical chamber of North Rhine (Düsseldorf, Germany) voted positively.

5.2.3 Questionnaires

Migration status was defined according to the German micro census (Statistisches Bundesamt, 2019). Participants who had themselves migrated to Germany and those who had at least one parent born abroad were considered as 1st generation immigrants. The country of origin of their mothers and fathers was also assessed.

The *Strengths and Difficulties Questionnaire* (SDQ; Klasen et al., 2003) is a brief screening questionnaire measuring emotional and behavioral problems. The internationally well-established scale has been evaluated in research and clinical practice (He et al., 2013). A recent study by Runge and Soellner (2019) suggested the validity of the SDQ as screening tools in immigrant children. The subscales internalizing problems (IP) and externalizing problems (EP) with eight items each were assessed (Dickey & Blumberg, 2004). Internalizing problems comprised anxiety symptoms and depressed mood, while externalizing problems covered conduct problems like impulsivity, aggression and hyperactivity. The items were rated on a 3-point scale (1="not true", 2="somewhat true", 3="certainly true"). Values of Cronbach's alpha were acceptable in the current study (Cronbach's alpha IP=.71; Cronbach's alpha EP=.66).

The *Scale for Measuring Applied Acculturation Strategy* (Diehl & Ochsmann, 2000) was applied for measuring the orientation towards both the receiving and heritage cultures. Each acculturation style (assimilation, integration, separation and marginalization) was assessed with three items each covering language use, social contacts, values and attitudes. Participants rated the items on a Likert-scale ranging from 1="not at all true" to 4="totally true". The internal consistency in the current study was good for the separation scale (Cronbach's alpha=.79), acceptable for the assimilation scale (Cronbach's alpha=.68), integration scale (Cronbach's alpha=.68), and marginalization scale (Cronbach's alpha=.61).

5.2.4 Statistical analysis

For group comparisons between girls and boys $\chi 2$- tests for categorical variables were calculated. To analyze sex differences an ANCOVA was used with internalizing problems and externalizing problems as dependent variables, respectively a MANCOVA was calculated with assimilation, integration, separation and marginalization as dependent variables. Before analyzing the acculturation styles, a confirmatory factor analysis (CFA) was calculated first evaluating the suggested four-factor solution of the acculturation scale. The model was estimated with the maximum likelihood method approach. Model fit was evaluated by using following model fit indices (Jackson et al., 2009): Chi-square statistic; the comparative-fit-index (CFI) and the Tucker-Lewis Index (TLI) to describe incremental fit; the root means square error of approximation (RMSEA) was used as an absolute measure of fit. Values of TLI and CFI close to .95 or higher indicate a better fit. RMSEA should be 0.08 or smaller. Multiple linear regression analyses with internalizing problems, respectively externalizing problems as dependent variables and sex and acculturation styles as independent variables were conducted. Interactions terms (sex*acculturation style) were added in the model. Sensitivity analysis was performed according to Soper (2019). A minimum sample of 98 participants was required in order to test a regression model with 12 predictors to observe a small effect (f^2=.02) with a statistical power level of .08. Hence, the current sample size was sufficient to carry out the analyses. All analyses considered age and higher education (i.e. grammar school) as covariates. Data analyses were performed by SPSS Version 21.0 and AMOS© 21.0.

5.3 Results

Participants were aged between 12 and 19 years (M=16.2; SD=1.6). 50.9 % of the sample were girls (n=224). About half of the sample were from countries of the Former Soviet Union (52.5 %), followed by Poland (8.4 %), Arabic-Islamic countries (7.7 %), Turkey (6.6 %), Former Yugoslavia (5.9 %) and countries in Middle- and West Europe (4.5 %). 14.3 % were from other

countries. The four largest groups of country of origin were compared regarding mental health and acculturation controlling for age and education. There were no group differences regarding internalizing problems ($F(3, 330)=1.36$; $p=.27$) and acculturation pattern ($F(4, 330)=1.09$; $p=.36$). However, the groups differed with respect to externalizing problems ($F(3, 330)=3.19$; $p=.024$; $\eta^2=.03$). The highest levels of externalizing problems were found among participants from Turkey ($M=6.62$; $SD=3.07$), followed by participants from Arabic-Islamic countries ($M=5.79$; $SD=2.67$), Poland ($M=5.75$; $SD=2.67$) and Former Soviet Union ($M=4.91$; $SD=2.94$). The distribution of the countries of origin was comparable among girls and boys. No differences emerged for age and grade repetition, but for school type. Whereas more girls attended grammar school, more boys attended vocational school. After controlling for the covariates, girls reported higher levels of internalizing problems than boys. Age was a significate covariate ($F(1, 349)=4.89$; $p=.03$; $\eta^2=.01$) and was correlated positively with internalizing problems. The ANCOVA with externalizing problems as outcome variable revealed no sex differences, but both covariates were significant ($F_{age}(1, 439)=12.43$; $p<.001$; $\eta^2=.03$; $F_{grammar\ school}(1, 439)=6.93$; $p=.009$; $\eta^2=.02$). The results are shown in Table V- 1.

Confirmatory factor analysis revealed that both incremental fit indexes (CFI=.94; TLI=.92) and absolute measures of fit indexes were good (RMSEA=.05) supporting the four- dimensional model ($\chi 2$ (48, $N=440$)=115.5, $p<.001$).

Table V- 1 *Demographic characteristics and mental health: comparison between girls and boys*

	Girls	Boys	Total	Test statistics
***N* (%)**	224 (50.9)	216 (49.1)	440	
Age	16.18 (1.57)	16.28 (1.61)	16.23 (1.59)	*ns*
School type				$\chi 2(4, N=440)=13.23$; $p=.01$ *Cramer's V*=.17
Secondary school	17.9	15.7	16.8	
Intermediate secondary school	18.8	16.2	17.5	
Comprehensive school	11.6	6.9	9.3	
Grammar school	22.8	16.2	19.5	
Vocational school	29.0	44.9	36.8	
Grade repetition (yes)	36.1	38.3	37.2	*ns*
Country of origin				*ns*
Former Soviet Union	50.5	54.5	52.5	
Poland	9.3	7.6	8.4	
Arabic-Islamic countries	6.9	8.5	7.7	
Turkey	6.9	6.3	6.6	
Former Yugoslavia	6.9	4.9	5.9	
Middle- and West Europe	4.6	4.5	4.5	
Other	7.3	7.0	14.3	
Mental health				
Internalization Problems	5.08 (3.11)	3.46 (2.61)	4.29 (2.99)	$F(1, 439)=35.86$; $p=.000$ $\eta^2=.08$
Externalization Problems	5.22 (2.93)	5.19 (2.98)	5.21 (2.95)	*ns*

Note. Percentages are presented for categorical variables; *M (SD)* are presented for continuous variables; *ns*=not significant

Figure V- 1 presents the mean values of each acculturation style separately for girls and boys. Integration was the acculturation style with the highest mean values, followed by assimilation and separation with similar mean scores. The means for marginalization were the lowest. The results of the MANOVA revealed a main effect for sex differences in acculturation style ($F(4, 433)=3.79$; $p=.005$; $\eta^2=.03$). Girls more often showed an integration pattern ($F(1, 436)=7.23$; $p<.007$; $\eta^2=.02$) than boys. Boys scored higher on the separation scale ($F(1, 436)=4.88$; $p=.028$; $\eta^2=.01$) and on the marginalization scale ($F(1, 436)=6.04$; $p=.014$; $\eta^2=.01$) than girls. The covariate age was significant ($F(4, 433)=7.11$; $p<.000$; $\eta^2=.06$). Older adolescents reported higher values of assimilation ($F(1, 436)=6.84$; $p=.009$; $\eta^2=.02$) and integration ($F(1, 436)=12.39$; $p<.000$; $\eta^2=.03$), but lower values of separation ($F(1, 436)=8.08$; $p=.005$; $\eta^2=.02$). There was a main effect of school type ($F(4, 433)=4.71$; $p=.001$; $\eta^2=.04$) with adolescents attending a grammar school reporting lower scores for the separation scale ($F(1, 436)=9.51$; $p=.002$; $\eta^2=.02$).

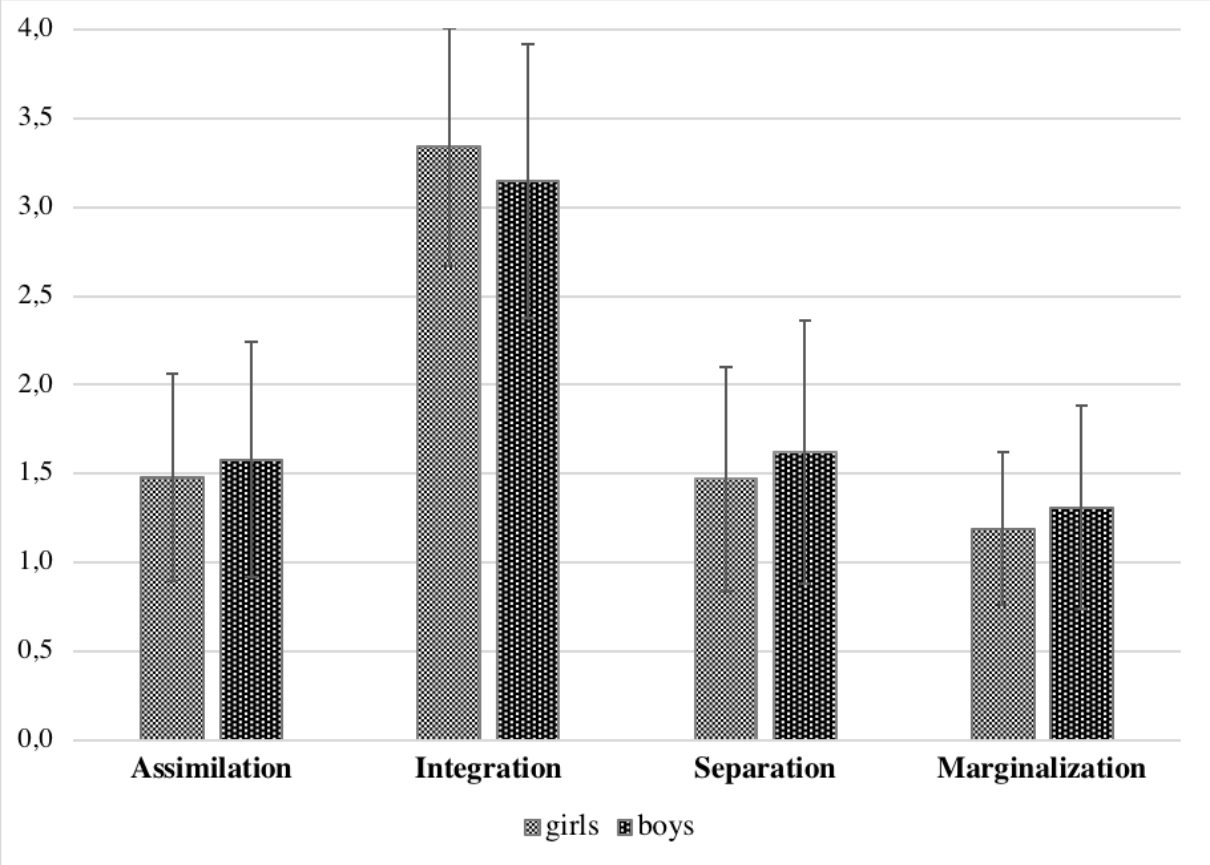

Figure V- 1. Acculturation styles separated for girls and boys.

The multiple linear regression analyses (Table V- 2) yielded significant results for both the model with internalizing problems as dependent variable ($F(11, 439)=6.54$; $p=.000$; $R^2=.12$) and the model with externalizing problems as dependent variable ($F(11, 439)=5.35$; $p=.000$;

R^2=.10). Internalizing problems were associated with female sex and higher age, whereas externalizing problems were associated with younger age and not attending grammar school. Regarding acculturation style, marginalization was related to higher scores in internalizing problems. Higher levels of separation were associated with more externalizing problems. Interaction effects between sex and acculturation styles were not found for neither internalizing problems nor externalizing problems.

Table V- 2 *Multiple linear regression for internalization problems and externalization problems*

	Internalization problems			Externalization problems		
	β	*t*	*p*	*β*	*t*	*p*
Sex	.31	6.70	**.00**	.05	1.11	.27
Age	.10	2.06	**.04**	-.14	-2.87	**.00**
Gymnasium (yes)	.02	.38	.70	-.08	-1.75	.08
Assimilation	.10	1.59	.11	-.00	-.49	.96
Integration	-.04	-.68	.50	-.00	-.62	.95
Separation	-.00	-.05	.96	.26	4.03	**.00**
Marginalization	.20	3.18	**.00**	.10	1.53	.13
Sex * Assimilation	-.03	-.53	.60	-.01	-.14	.89
Sex * Integration	.08	1.27	.20	-.02	-.31	.76
Sex * Separation	.05	.86	.39	-.06	-.93	.35
Sex * Marginalization	-.00	-.05	.96	.06	1.05	.30

Note. *N*=440; young men=0; young women=1

5.4 Discussion

The current study aimed to deepen the understanding of former findings suggesting elevated prevalence of internalizing problems and externalizing problems among adolescent 1st generation immigrants by exploring the role of acculturation strategies considering potential sex differences. The findings of this school-based survey suggested that girls and boys differed in the prevalence of internalizing problems and their acculturation pattern. Regardless of sex, marginalization was associated with more internalizing problems, whereas a separated acculturation pattern was linked to more externalizing problems.

5.4.1 Acculturation styles

The results of the confirmatory factor analyses supported the suggested model by Berry (1997) with four different acculturation strategies (assimilation, integration, separation and marginalization). The integrative acculturation pattern was most commonly represented among the adolescents, followed by assimilation and separation. Marginalization was the acculturation style with the lowest approval rate. This finding is consistent with previous research on acculturation patterns in immigrants indicating that integrating language use, social contacts, and values of both the host cultural and cultural of origin was the most common acculturation pattern, whereas low involvement in both cultures was the least prevalent acculturation style (Berry et al., 2006; Jasinskaja-Lahti et al., 2003; Kupper et al., 2018; Pfafferott & Brown, 2006). Sex-related pattern of acculturation styles were found supporting previous studies (Berry et al., 2006; Motti-Stefanidi et al., 2008) with boys scoring higher on separation and marginalization than girls. In contrast, girls more often showed an integrative acculturation pattern compared to boys. The specific sex differences in acculturation profiles might be explained by gender-related different socialization processes and experiences. Girls particularly tend to cherish interpersonal involvement and social ties (cf. Brown & Larson, 2009). Therefore, girls are more likely to establish a new social network with peers in the receiving society, while remaining attached to peers and family members in the country of origin. Boys, however, more frequently reported a main orientation towards their peers, culture and attitudes of their country of origin and a low involvement in both cultures. One explanation for this finding might be that boys are more prone to experience discrimination (Lazarevic et al., 2018; Turjeman et al., 2008). Adolescents experiencing discrimination are more likely to reject close contact with the receiving society and be more orientated towards their own cultural group (Berry et al., 2006) in order to avoid feelings of exclusion and protect their self-esteem. Indeed, previous studies showed that perceived discrimination was related to separation and marginalization patterns (Berry et al.,

2006; Jasinskaja-Lahti et al., 2003). In a sample of 170 immigrants from the former Soviet Union aged 12 to 19 years, Jasinskaja-Lahti and Liebkind (2001) found that the more adolescent immigrants adhered to traditional family values promoting their relationship to their parents, the less contact was made with the receiving society which seemed to protect them against perceived discrimination. This observed connection was particularly salient among young men compared to young women. An alternative explanation might be that particularly among adolescents from traditional cultures, girls are more motivated to attach to "Western" values that give women greater freedom (Phinney, 1991), whereas boys are more likely to identify themselves with traditional values like masculinity norms in order to maintain their social status (Klein et al., 2017). Moreover, the results showed that adolescents were more likely to report an assimilation and integration acculturation profile with increasing age, whereas the separation acculturation profile was more likely among younger pupils. This might be explained from a developmental perspective contending that the societal influence of peers and contexts outside of the family such as the school environment become more prominent whereas the contact to one's parents becomes less frequent (Brown & Larson, 2009).

5.4.2 Acculturation styles and mental health

As expected, the findings of the current study revealed a significant correlation between separation and marginalization and reduced mental health. Regarding sex differences, more girls reported internalizing symptoms compared to boys. Higher prevalence of depression and anxiety among adolescent girls has often been demonstrated in research on adolescent's psychopathology (Hölling et al., 2008; Salk et al., 2017) and across immigrant adolescences (Anderson & Mayes, 2010; Brettschneider et al., 2015; Hilario et al., 2014; Shoshani et al., 2016; Turjeman et al., 2008; Von Lersner et al., 2015). In contrast to our hypothesis, we found no sex-related pattern in the association between acculturation and mental health. Hence, the findings suggest that regardless of sex, marginalization was related to higher levels of internalizing problems like anxiety and depressiveness. This corroborates previous studies identifying marginalization as the least adaptive pattern compromising well-being (Berry, 1997; Berry & Hou, 2017; Kupper et al., 2018; Phinney, 1991). Weak bonding to the members of the host culture and the culture of origin might create social isolation and ambivalence in the process of identity development which can result in depressive and anxious symptoms. Additionally, our earlier findings demonstrated that marginalization was related to self-insecurity, which is a core symptom of anxiety disorder (Klein et al., 2017). However, due to the cross-sectional study design, the causal direction of the association between marginalization and internalizing problems cannot

be determined, as depression and anxiety might also facilitate an acculturation pattern of marginalization.

Separation as an acculturation style was related to externalizing problems like hyperactivity and conduct problems. This finding contradicts the hypothesis that strong identification with the heritage culture might create a feeling of belongingness and buffer the harmful effect of perceived discrimination with positive impact on individual's mental well-being (Phinney, 1991). The association between separation and diminished mental well-being rather supports the notion that separation might be a consequence of rejection and prejudice from the host society, deepening the perceived gap in social norms and acculturation attitudes between members of the dominant culture and minority group members. In consequence, immigrants' distress and fears not to be socially accepted as a full member in the new society might increase (Phinney, 1991; Turjeman et al., 2008), which might be expressed in behavioral problems. Despite inconsistent finding in acculturation research, empirical evidence demonstrated the association between a separation profile and reduced physical and mental health in immigrants living in Germany (Brand et al., 2017; Schmitz & Berry, 2009). The educational disadvantages of immigrants compared to their not immigrated peers with German origin (Klein et al., 2017) might further represent a potential threat to immigrants not to achieve social status in the majority society (Phinney, 1991), which might be buffered by the identification with the culture of origin. Following this hypothesis, the lower educational attainment in immigrant boys might explain their higher separation profiles. However, school engagement, which has been identified as protective factor for adolescents' mental health, requires a high orientation towards the receiving culture (Shoshani et al., 2016).

In contrast to our hypotheses and previous research, we could not identify integration as protective acculturation pattern. Nguyen and Benet-Martínez (2013) concluded from a meta-analysis on the association between biculturalism and adjustment that varying results might be explained by different acculturation measures, sample characteristics and diverse life domains outcomes. In addition, both age and education level must be taken into account, given their impact on acculturation styles and mental health status.

5.4.3 Limitations and future research

Finally, several limitations of the current study need to be considered while interpreting the results. The data obtained was based on self-report, which are prone for response bias. A further significant concern is participation bias given that the sample was limited to immigrants with sufficient language skills as only German questionnaires were utilized. Language skills determine the intensity of interpersonal contact in the receiving society (Sam & Berry, 2010) and

are key factors for acculturation. Given the association between lower linguistic proficiency in the new language and separation as acculturation strategy (Grigoryev & van de Vijver, 2017), the separation profile may have been underrepresented in the current sample. Further, immigrants who participated in the study might be heterogeneous in terms of pre-migration experiences, causes of migration and migration trajectories. Methodological limitations refer to the moderate internal consistency of the marginalization subscale and the externalizing problems scale of the SDQ with the latter having already been reported in previous studies (Hölling et al., 2007). Literature on acculturation research (Maehler & Shajek, 2016) pointed to the complexity of acculturation processes, constituting a methodological challenge to operationalize acculturation patterns. Moreover, education level was used as an indicator for socioeconomic status. Despite its significant correlation with migration status, it is difficult to assess socioeconomic status in youth samples due to lacking information from parents. However, the representative sampling in the current study promoted variation in socioeconomic status across the sample. As mentioned above, the cross-sectional study design does not allow drawing causal conclusions. Longitudinal studies are required to examine developmental trajectories of acculturation pattern and mental health across adolescents. Since we did not assess age-salient developmental tasks in adolescence like developing independence from parents, we could not disentangle the impact of acculturation stress and general challenges in puberty on immigrated adolescents' mental health. To develop a full picture of immigrant youth adaptation, more studies will be needed that additionally take family-related factors into account like parental support (cf. Reitz et al., 2014) and parental acculturation styles, as well as contextual factors like perceived discrimination, acculturation orientation and multiculturalism in the receiving society.

5.4.4 Conclusion

Consistent with previous findings this school-based survey showed that gender-related considerations within the acculturative process are pivotal to understand young immigrants' psychological adaption. 1st generation adolescents experiencing socio-economic hardship, educational disadvantage and a lack of belongingness to the host society might be especially vulnerable to mental distress. The results have practical applications suggesting that e.g. promoting school engagement in immigrant pupils by teachers and policy can be useful to reduce separation and marginalization as risk factors for distress. Although we were not able to examine the mechanisms explaining the relation between acculturation styles and mental health, differentiating internalizing and externalizing problems might be useful for future studies in order to identify possibly unique patterns shaping different syndromes in adolescence.

6 Discussion

The purpose of the current work was to broaden the perspective on adult immigrants' mental health research by applying a life approach recognizing the importance of recalled childhood experiences. Further, in a sample of immigrant youth, acculturation strategies and the association with mental health were investigated taking sex-related differences into account. The following section gives a brief overview of the main findings. For the adequate evaluation of the retrospectively assessed findings, three notions are introduced. More precisely, *memory-related, sociocultural-historical* and *psychoanalytical* perspectives are considered for the interpretation of the results from a life course perspective. The second section elaborates a life narrative approach by the example of Emilia Smechowski's autobiographical novel "Wir Strebermigranten", adding an interdisciplinary perspective. The third section describes how the findings contribute to clinical psychotherapeutic work with immigrant patients. The fourth section of this chapter summarizes the limitations of the conducted studies. Finally, future research ideas generated from the current findings are presented with focus on the relevance of studying earlier childhood experiences in research on immigrants' mental health.

6.1 Summary of the main findings

Due to a lack of empirical evidence regarding the prevalence of self-reported child maltreatment among adult immigrants, the purpose of the first study was to provide prevalence rates of child maltreatment comparing 1st generation immigrants (n=132), 2nd generation immigrants (n=162) and non-immigrants (n=2,146) in a population-based study. Compared to non-immigrants, 1st generation immigrants reported elevated prevalence rates of at least moderate physical neglect and physical abuse after controlling for socio-demographic variables. No differences in depressiveness and anxiety were found between immigrants and non-immigrants. Both physical and emotional forms of child maltreatment were associated with higher distress across all groups. The correlations between physical neglect, respectively emotional neglect and distress were particularly strong among 1st generation immigrants. 1st generation immigrants were shown to be at elevated risk for physical forms of child maltreatment. Whereas 1st generation immigrants did not report higher depressiveness and anxiety symptoms overall, the findings suggested that those 1st generation immigrants who had experienced more neglect were particularly vulnerable for higher distress. Findings underscored the importance of disentangling socioeconomic disadvantages from migration status while assessing child maltreatment.

Based on data of the Gutenberg Health study, the purpose of the second study was to investigate similarities and differences in recalled maternal and paternal rearing behavior and the association with depressiveness in adult 1st generation immigrants (*n*=743) compared to non-immigrants (*n*=6,518). In addition to differences in depressiveness and socioeconomic status, 1st generation immigrants recalled both their mothers and fathers as more controlling and overprotecting than non-immigrants. Parental emotional warmth was negatively associated with depressiveness across all groups. The relationship between parental control, respectively parental rejection and depressiveness, however, varied in direction and strength between the groups. The results supported the notion that parental warmth is a universal protective factor against depressiveness, whereas the impact of parental control on mental health might be more culturally influenced. Analyses pointed to the importance of considering the unique contribution of fathers' rearing behavior on mental health, particularly in immigrant samples.

The third study investigated sex-related differences in acculturation patterns and the association with mental health (internalizing and externalizing problems) in 1st generation immigrant youth (*N*=440). Based on data of a representative German school survey, confirmatory factor analysis supported the four-dimensional model of acculturation styles (assimilation, integration, separation and marginalization). Whereas girls more often showed an integration pattern, boys scored higher on the separation and marginalization scale. After adjusting for age and educational level, regression analyses revealed for both girls and boys that marginalization was associated with more internalizing problems. Separation was related to higher levels of externalizing problems. In conclusion, 1st generation adolescents who experience a lack of belongingness to German society, socio-economic and educational disadvantages might be particularly vulnerable to mental distress. Findings pointed to gender-related differential socialization processes in context of immigration.

The results of the first study differed from our previous findings showing elevated prevalence rates of depressiveness among 1st generation immigrants (Beutel et al., 2016; Klein et al., 2017). This inconsistency might be explained by the small numbers of immigrant participants in the first study compared to the samples of the former studies. Moreover, in the first study the brief screening tool PHQ-4 was applied. Compared to the PHQ-9, the questionnaire does not include items about suicidal ideation and somatic symptoms of depression (e.g. sleep disturbance, psychomotor problems). However, especially 1st generation immigrants endorsed those items (Beutel et al., 2016; Tibubos et al., 2018) which might explain the higher depression scores found in our previous studies.

6.2 Interpretation of the findings from a life course perspective

Applying a life course perspective, Figure VI- 1 shows the assessed variables affecting the current mental health status of immigrants on a time line. Child maltreatment and parental rearing behavior are considered as pre-migration experiences, whereas acculturation styles play a significant role for the perceived level of distress in the post-migration phase. Similar to non-immigrants, the universal factors sex, age and SES affect mental health across the entire life span and are interrelated to the other assessed variables. Although the measures were the same for immigrants and non-immigrants, the meaning of each construct might be different for non-immigrants. As a life course approach in a cross-sectional study design implies a retrospective assessment of childhood experiences, the relevant question about the validity and interpretation of those retrospective memories arises. In the following section, this issue will be discussed drawing from three interrelated but distinct approaches, namely from a *memory-related, socio-cultural-historical* and *psychoanalytic* perspective.

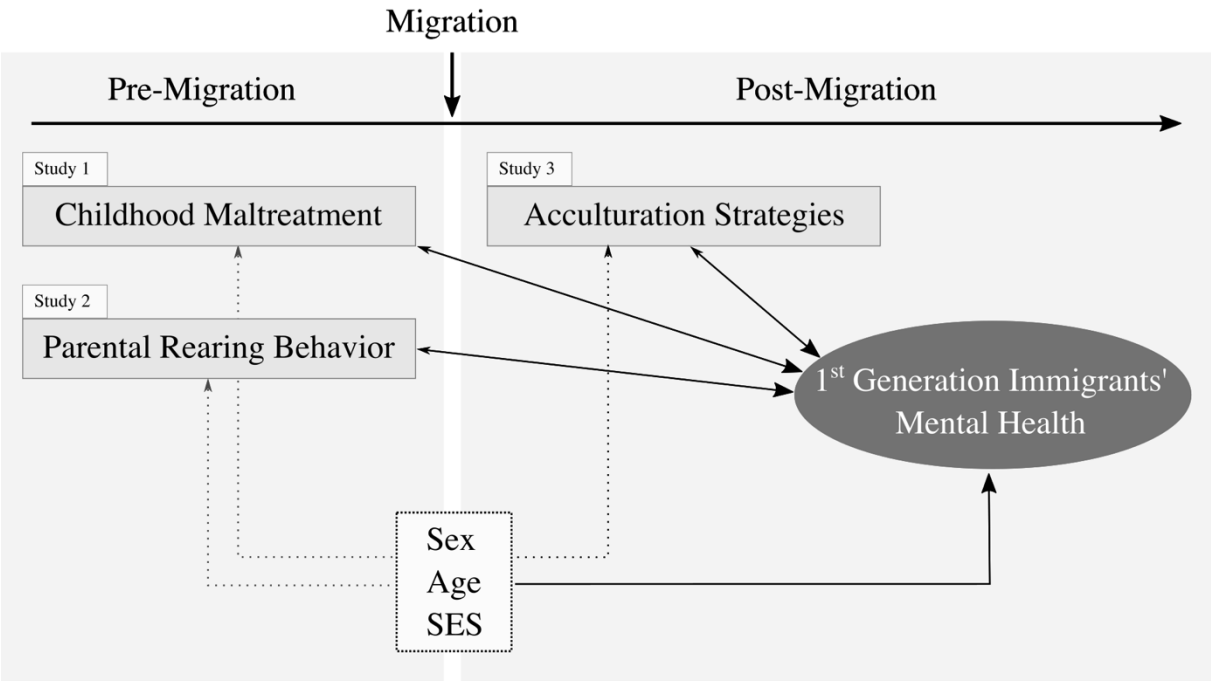

Figure VI- 1. Assessed exposures during the life course on 1st generation immigrants' mental health.

From a *memory-related perspective*, the reasonable interpretation of the findings requires the consideration of *memory bias* in retrospective data. Empirical research provided evidence for stability over time and mood changes for both recalled parental behavior (Richter & Eisemann, 2001; Wilhelm et al., 2005) and child maltreatment (Bernstein et al., 1994; Frampton et al.,

2018; Paivio, 2001). Besides the general question concerning the stability of memories of childhood experiences over the life span, the recollection of early experiences and the construction of meaning certainly underlie different mechanisms in immigrants and non-immigrants. Immigrants' recall of autobiographical memories of pre-migration experiences and their emotional evaluation might be impacted by the change of their socio-cultural environment and language use. Their own memories of the past are compared to a new reference group with different socialization processes, historical past and living standards, in this case to German participants without migration background. The idea of normative development, however, varies between specific socio-cultural environments. Indeed, immigrants' autobiographical remembering of past events is impacted by acculturation, migratory experiences, bilingualism and constructive bias (c.f. Jobson et al., 2016; Larsen et al., 2002; Schrauf & Hoffman, 2007; Schrauf & Rubin, 1998). For example, a study by Schrauf and Hoffman (2007) explored how immigrants remembered their emotions related to pre-migration situations in childhood and youth. Immigrants recalled their pre-migration experiences as more negative compared to the recall of their non-immigrated cohort counterparts who grew up under similar living conditions. Explaining this finding, the immigrant group had in fact undergone more negative experiences which had contributed to the decision to leave the country. However, the authors additionally pointed to the possibility that immigrants' memories are prone for reconstructive bias due to an further revisionism stemming from the comparison between the present, more satisfactory situation and their past situation (Schrauf & Hoffman, 2007). According to the authors, favoring the current living situation over the past might also serve as justification for the effort and hassles related to the decision to migrate.

Considering that instances of child maltreatment are often traumatic experiences, it has to be further taken into account that trauma memories are distinct and differ from other non-traumatic, autobiographical memories. Jobson et al. (2016) showed pan-cultural similarities in trauma narratives concerning disruptive and distortive characteristics. Findings revealed that immigrants' recall of traumatic narratives resembled those of two comparison groups, with one living in the host country and one in the country of origin.

Second, *sociocultural* and *historical* factors affect the evaluation of one's past and present circumstances. From this perspective, cohort effects have to be considered. The use, meaning and normativity of rearing practices have dynamically changed over time and therefore have to be understood within a specific socio-cultural time period. Regarding rearing practices, in Germany parenting has changed from an authoritarian to an authoritative rearing style since 1945 (Eschner, 2017). Eschner (2017) analyzed rearing advice in published books about parenting guidelines ("Erziehungsratgeber") over the last decades. The findings demonstrated that rearing

practices reflected the specific zeitgeist of each decade, for instance the "anti-authoritarian education" in the 1960s, affecting the social transformation of rearing attitudes and behaviors. Particularly the societal acceptance of corporal punishment in childrearing has decreased in recent years (Plener et al., 2016). One has to bear this in mind as Germans without migration background across different age groups were used as reference group in the studies.

Moreover, socio-cultural changes in history lead to additional reappraisals of past events. For instance, Brähler et al. (2000) compared how East and Western Germans differed with respect to their recalled rearing behavior using the FEE questionnaire. Interestingly, older participants who lived in the GDR remembered their childhood as more positive than their West German peers although both groups had spent their childhood prior to the division of Germany. Therefore, they very likely shared similar experiences. The authors provided the hypothesis that the additional reconstruction of the autobiographical memories of parental behavior might be explained by adjustment processes to subsequent parenting-related attitudes which differed between East and West Germany. In the same vein, the *present* socio-political situation plays a significant role for the interpretation of post-migration factors and their influence on mental health. In the current studies this notion applies to acculturation: Acculturation attitudes of the larger society have particular relevance for the evaluation of how acculturation impacts mental health (see section 6.3 for the illustration by Emilia Smechowski's autobiography). As the political discourse in Germany rather favors immigrants' assimilation over integration (c.f. Kupper et al., 2018), the research results regarding the association of acculturation and mental health are comparable to international findings only to a limited extent. In contrast to the German assimilative model, in the US the "melting pot" and in Canada the "cultural mosaic" model are dominant (Banerjee et al., in preparation). In conclusion, given these notions, the findings of the present work cannot be generalized to other past or present socio-cultural contexts, countries and immigrant groups without critical reflection (Bornstein, 2012, 2013).

Finally, the *psychoanalytic* perspective highlights that the assessment of recalled childhood by questionnaires potentially reflects a subjective truth rather than factual experiences. Moreover, and even more important, questionnaires only allow access to the conscious recall of past events and parental representations. However, defense mechanisms affect and modify childhood memories, even more likely when there were experienced as aversive. In contrast to standardized measures applied in the studies, a qualitative methodological approach would yield deeper insights by analyzing autobiographical narratives (see section 6.3). However, the narrative structure and content of autobiographical remembering are interrelated with language and culture (e.g. Wang & Ross, 2005) and therefore might differ between immigrants and non-immigrants.

Cross-cultural research on autobiographical remembering revealed that memories of events before migration were more often remembered in the mother tongue, whereas events after migration were more likely encoded in the host language (Schrauf & Rubin, 1998). These considerations about the interface between (unconscious) autobiographical memories and both language and culture have clinical implications for the psychotherapeutic work with immigrants.

In sum, considering these notions the current data cannot conclusively clarify to which extent the retrospective findings were biased due to conscious and unconscious memory bias and reconstructive processes of one's personal history impacted by the migratory experiences. Further, past and present transformations at personal, political and societal levels (cf. Brähler et al., 2000) have to be considered while interpreting the results.

6.3 Life narrative approach

The following section takes a look at Emilia Smechowski's autobiography "Wir Strebermigranten" published in 2017 to illustrate a personal narrative of migratory experiences in Germany (Smechowski, 2017). Thus, this section aims to add an interdisciplinary perspective by linking the quantitative methods of the current work with a life writing approach (cf. Banerjee et al., in preparation). The quantitative access provided the possibility to explore randomly drawn, population-based samples of immigrants. This knowledge is required to identify risk factors, mental health care needs and in consequence to provide adequate treatment. However, immigrants' individual autobiographies can explicate and illuminate the manifold challenges caused by the migration and how the personal life story and well-being are coined by those experiences in greater depth. Therefore, each of the two approaches provide vital impulses ideally complementing each other. This is particularly the case in the context of life writing studies and immigrants' mental health as in the psychotherapeutic work autobiographical narratives are the main tools to gain insights into the reconstruction of the individual's past and, in turn, into the understanding of their symptomology.

Emilia Smechowski tells in her autobiographical novel about her family's flight from Poland in 1988 and the subsequent arrival in Germany. As so-called "Aussiedler" the family had access to language courses, financial support and the German citizenship. She vividly describes the enormous pressure to adjust to the mainstream culture habits and practices at the cost of her Polish identity. The family is successful: the parents work as physicians, both daughters are good students living in a pretty house with an expensive car ("*Eine Assimilation im Zeitraffer.",* p. 11). However, behind the curtain of financial and academic success, the family breaks apart. In this context, she elucidates three central motifs which continually appear throughout the

novel: the hyper-assimilation *(„Wir hielten aus fern von unseren Landsleuten. [...] Wir verzichteten auf eine Bindestrich-Identität als Deutsch-Polen und wurden fast deutscher als deutsch.“*, p. 97), the invisibility as immigrants (*„Wir sind unsichtbar. Wir sind quasi nicht mehr da, so gut gliedern wir uns ein.“*, p. 11) and the parents' high aspiration for success (*„In meiner Familie geht man nicht unter. Es gibt nur eine Richtung: nach oben. Wir sind Leistungsträger [...].“* p. 8). As a consequence of the unrelenting pressure, Emilia moves out of her parent's house as an older teenager to become an opera singer (*„Heute weiß ich: [...] Es war der größte Emanzipationsakt meines Lebens. Opernsängerin – einen größeren Kontrast zum Leben meiner Eltern hätte ich nicht wählen können.“*, p. 173). Reflecting on her life story in adulthood, Emilia makes "ein[en] Versuch mich zu de-assimilieren" (p. 186), especially as an expectant mother the transgenerational topic becomes salient (*"Wie würde ich dieses Kind erziehen? Würde ich so werden wie meine Eltern? Wie ist es überhaupt möglich, man selbst zu sein, wenn dem Selbst ein so großes Stück Vergangenheit fehlt?“*, p. 186). After a long time of denial, she restarts turning herself towards her Polish roots again (*"[…] und aß ein Gericht aus meiner Kindheit. Als wollte ich mir das Polnische wieder einverleiben"*, p. 188), developing an integrated *"Bindestrich-Identität"* (p. 97).

In sum, Smechowski's autobiography captures two topics which were research objects of the current work in a quantitative manner: acculturation strategies, more preciously assimilation, and parenting behavior and attitudes. About the pressure and costs of assimilation, she notes: *„Assimilation ist kein Ankommen, es ist ein Versteckspiel“* (p. 182). In the light of the assimilation pressure, she writes about the parental *„Null-Fehler-Politik“* (p. 132) as an example of recalled parenting practices in her novel. The parents constantly monitored their daughter's educational achievement which can be a characteristic of controlling parental behavior. This strict rearing attitude was accompanied by the father's emotional coldness (*„Damals war mein Vater zu einem unverrückten Felsen für mich geworden. Hart und kalt“*, (p. 126). Interestingly, she also refers to the internalization of the parental objects, initially unconsciously, being mentally active across her life: *„Ohne es zu merken, hatte sich meine Mutter in mein Bewertunssystem eingeschlichen, immer auf der Suche nach dem kleinen Makel. Null-Fehler-Politik [...]“* (p. 168).

Only now from a retrospective perspective as an adult she recognizes how her life story was substantially coined by the family's migratory and acculturative experiences, which in turn impacted the parental rearing, family dynamic and functioning. She notes:

> „Heute weiß ich, dass dieser Ausbruch von zu Hause mehr war als die Rebellion eines Teenagers. Es war auch eine Absage an die Art, wie wir in Deutschland lebten. Wir Strebermigranten. [...] An jenem Tag im Mai hatte

> ich so gut wie vergessen, dass wir zwölf Jahre zuvor aus Polen gekommen waren und dass dieser unbedingte Wille zum Erfolg, vor dem ich auch floh, auch mit unserer Einwanderungsgeschichte zu tun hatte.“ (p. 10-11)

Due to the dynamic transformation of the evaluation of her past, Smechowski's novel provides a vivid example of autobiographical reasoning. According to Habermas and Bluck (2000) autobiographical reasoning describes the active creation of coherence through self-reflecting and biographical comprehension linking the past to the present self and circumstances. As presented and elaborated earlier (see section 6.2), the retrospective evaluation in Smechowski's narrative thus provides further examples for *memory-related, psychoanalytic* and *sociocultural-historical* aspects in autobiographical remembering. For example, she implicitly refers to *memory bias* in autobiographical narratives and that recalls are prone to repression, and revision. Smechowski notes, that memories are *“tückisch”* and *“betrügen uns immer wieder, und wenn wir nicht aufpassen, erzählen sie eine falsche Geschichte.“* (p. 12). She further remarks:

> „Im Französischseminar lasen wir Gérard Genette, und ich hörte zum ersten Mal dieses Wort: „Palimpsest“. Unsere Seele, schrieb Genette, sei ein Palimpsest, eine im Lauf der Zeit immer wieder überschriebene Manuskriptseite, voller Erinnerungen und Gefühle. Nur weil etwas nicht sichtbar ist, heißt es nicht, dass es nicht mehr auf der Seite steht. Alles, was wir erlebt haben, ist nicht vergessen, nur verdeckt.“ (p. 179).

From a *psychoanalytic* perspective, this notion can be interpreted as a narrative about the unconscious. Further, she writes about the affective components in her life narrative and her initial unawareness of those emotions. She writes: *„Ich erfuhr erst sehr viel später: Neben all den diffusen Ängsten vor einem neuen Leben, gab es noch ein weiteres Gefühl, das uns begleitete: Scham.“* (p. 33) and continues talking about feeling of guilt (p. 42). The self-alienation as a result of the hyper-assimilation while denying her Polish roots at the same time accompanied a feeling of *“Fremdheit, die, wie mir später klar wurde, fast jeder Migrant in diesem Land kennt.“* (p. 125). The description and intensity of the self-alienation as a result of the hyper-acculturation remind of Winnicott's (1974) *false self*:

> „Erst heute ahne ich, was dieses verordnete Deutschsein mit mir gemacht hat. Dieses Gefühl, anderen etwas vorzuspielen und dennoch unvollständig zu sein, diese Angst, bald durchschaut und dann nicht mehr gemocht zu werden: Sie verfolgen mich im Grunde bis heute.“ (p. 59)

Hence, she gives insights in to the psychological problems and how it can *feel* to be an immigrant in Germany. Although speculative at this point, it can nevertheless be presumed that the

intensive feelings mentioned like shame, guilt, anxiety have a damaging effect on one's mental health, and even have the potential to cause symptomatology.

Finally, in regard to *sociocultural-historical* considerations, Smechowski observes the modification of integration circumstances due to historical transformation and the changing zeitgeist of acculturative attitudes, both from the German and Polish perspective: *„1988 war in der deutschen Politik noch keine Rede davon, dass Deutschland ein Einwanderungsland sei."* (p. 47) and further: *„Die, die in den 1990er Jahren kamen, kamen aus einem anderen Polen in ein anderes Deutschland."* (p. 121). She describes implicit cohort effects, taking a transgenerational perspective across immigration generations into account:

> „Polnisches wird nicht mehr versteckt, sondern stolz hergezeigt in dieser deutschen Hauptstadt, Polnisches ist plötzlich cool geworden, und wir unsichtbaren Polen, Einwanderer der zweiten Generation, die mit ihren Eltern in den 1980er Jahren kamen, stehen etwas verwundert daneben und schauen zu." (p. 199)

At the end of the novel, she refers to the multicultural environment her daughter grows up. Her daughter, the next generation, attends a kindergarten, "in dem die meisten Kinder von ihren Eltern nicht auf Deutsch angesprochen werden" (p. 206) promoting the development of a bicultural identity (*"Nun ist meine Tochter wahrscheinlich die Einzige in der Familie, die sich über Identitäten mit Bindestrich keine Gedanken macht",* p. 206)

In conclusion, Smechowski's autobiography illuminates the stressful acculturative experience and the price of assimilation for herself and the entire family. Whereas an assimilative paradigm is mainly depicted as desirable by the host country (Banerjee et al., in preparation), and even as story of success (Panagiotidis, 2020), Smechowski reveales the individual psychological consequences, namely self-alienation and identity-insecurity. Recently, Panagiotidis (2020) criticized that the narrative about the ideal integration into German society is defined in terms of cultural assimilation, economic success and minorities' "invisibility"[7]. However, the cost like constant adjustment pressure, including the shedding of one's own cultural habits and language, are overlooked. More precisely, like Smechowski's narrative illustrated, the socio-political discourse in Germany about successful integration lacks the consideration of mental health indicators. Drafting a "model minority" runs the danger to further promote unrelenting adjustment pressure and hierarchizing immigrant groups in "good" and "bad" immigrants (Banerjee et al., in preparation; Panagiotidis, 2020).

To conclude this section with Emila Smechowski's words:

[7] Panagiotidis (2020) refers to the integration of (Spät-)Aussiedler in his paper

> „Wenn ich heute darüber nachdenke, wünschte ich mir, wir wären als Migranten sichtbarer gewesen. Hätten die Anstrengungen und Mühe, die es kostet, hier anzukommen, mehr gezeigt. So war es, als trügen wir ein unsichtbares Gepäck auf dem Rücken und müssten dennoch immer aufrecht gehen. Wir trauten uns nicht, zuzugeben, dass Integration auch schwer sein kann."(p. 99)

6.4 Clinical implications

Despite the explorative nature of the studies, the findings have implications for clinical practice in both primary care and transcultural psychotherapy. The studies underscored the importance of broadening the perspective in the clinical assessment and treatment of common health problems among immigrants by including the consideration of early childhood experiences beyond the exploration of the migration process itself and post-migration experiences. This knowledge enables clinicians to adequately evaluate the potential impact of each different phase of the migration trajectory on diagnostics, etiology, and pathogenesis of mental health problems among immigrants (Graef-Calliess & Behrens, 2018; Kirmayer et al., 2011). As a guideline for culture-sensitive clinical assessment, diagnosis and therapy, Graef-Calliess and Behrens (2018) provided a framework conceptualizing influence factors of immigrants' mental health status. As illustrated in Figure VI- 2, immigrants' mental health outcomes are determined by the convergence of culture-related and migration-related factors, besides from personal factors (e.g. biological predisposition, personality) and environmental-contextual factors (e.g. perceived discrimination, health system). On the one hand, age-related development tasks, previous life events and inner conflicts affect this interplay of factors, which on the other hand interacts with acculturative experiences (Graef-Calliess & Behrens, 2018). Consequently, adequate diagnostics in clinical work with immigrants requires a modified clinical anamnesis. Capturing and categorizing these diverse contributing factors provide a profound understanding of immigrants' mental health being useful for clinical assessment and intercultural psychotherapy as well as for future research.

In the following section, I aim to extend and specify this framework by integrating the findings of the conducted studies in order to strengthen the clinical implications.

First, Graef-Calliess and Behrens (2018) highlighted within their framework the importance of exploring the individual's biography and life time spent in the country of origin before migration. Yet, the description of pre-migration stressors remained vague. Applying the findings of the current study, pre-migration stressors can be specified as childhood experiences and the quality of relationships with caregivers played a significant role in the understanding of anxiety

and depressive symptoms among immigrants. This is especially the case for adverse childhood experiences.

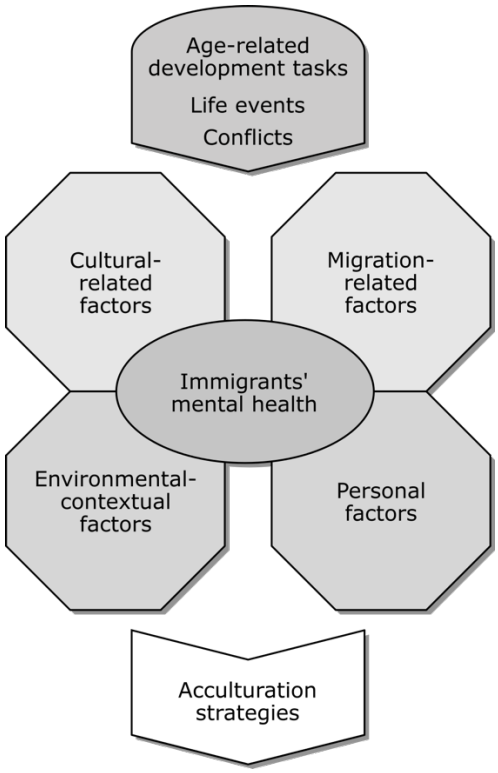

Figure VI- 2. Framework of immigrants' mental health (cited from Graef-Calliess & Behrens, 2018, p.211).

Consequently, clinicians should explicitly explore child maltreatment. According to the current results, a particular focus should be placed on the occurrence of neglect and corporal forms of maltreatment. Despite possible cultural variation in the understanding about which childrearing practice is deemed to be abusive (Raman & Hodes, 2012), which is particularly the case of corporal punishment (Lansford, 2010), the current findings showed that corporal maltreatment has a general detrimental effect on mental health. Moreover, the assessment of experienced parental rejection and punishment, but also invasive parental behavior which might be expressed in overprotecting and controlling behavior, might provide valuable information. In clinical work with immigrants, individual meanings and interpretations of such childhood experiences have profound significance for the understanding of the person's psychic reality. Along the same lines, the current data highlighted the importance of acknowledging different normative cultural scripts in childrearing, also those of fathers, which might challenge our assumption which childrearing practices and patterns are universal (Bornstein, 2012). Hence, in the clinical context an open and curious stance of the clinician is crucial to avoid ethnocentric perspectives on parenting.

Second, Graef-Calliess and Behrens (2018) included acculturation as an important migration-related and dynamic aspect in diagnosis and comprehension of immigrants' mental health status. In line, the current findings supported a relation between acculturation strategies and well-being: both marginalization and separation were associated with reduced mental health. The current findings yielded evidence that different acculturation strategies were related to different symptomology. Whereas marginalization was associated with a higher vulnerability for internalizing symptoms, separation was related to a higher prevalence of externalizing symptoms. Further research is required to investigate acculturation across diverse pathologies and immigrant samples across different age ranges. Besides its relevance for clinical assessment, acculturation orientation was linked to attitudes towards psychotherapy. In a study by Calliess et al. (2007), Turkish immigrants with weaker orientation towards a traditional cultural background had a more positive attitude towards psychotherapy than Turkish immigrants who identified themselves more strongly with their Turkish traditional cultural background. Such findings have important implications for reducing the barriers to specialized health care immigrants face (cf. Bottlender et al., 2018) as immigrants with a more separated and marginalized acculturation orientation might not seek psychological treatment, although they seem to be a specifically vulnerable group for higher distress.

Last, the framework proposes to conceptualize migration-related and culture-related aspects, albeit highly interrelated, as distinct contributing factors to immigrants' mental health status. Aside from personal and environmental factors, this distinction enables to adequately assess the impact of culture while avoiding the risk of neither undervaluing nor overvaluing the role of culture in pathogenesis. In other words, the clinician should be aware of the potential or actual risk of ethnocentrism, but also of culturalism. In the psychotherapeutic setting, the overemphasis of cultural differences can serve as defense against a trustful therapeutic alliance (Machleidt & Gün, 2018). In contrast, existing cultural differences could be denied. Therefore, the clinical work with patients from diverse cultures requires the necessity to deal with the own fear of the "alien" in order to improve intercultural skills (Machleidt & Gün, 2018; Machleidt & Heinz, 2018). Likewise, research suggested that patients from different countries of origin and ethnic backgrounds benefit from common psychotherapeutic treatment concepts like the control group. Qualitative analyses demonstrated the need of slight modifications of the common treatment by acknowledging migration biography and cultural diversity (Behrens & Calliess, 2008). The authors concluded that culture-sensitive approaches in psychotherapy rather require a reflection of the own therapeutic stance and the inclusion of migration-related and cultural-related aspects than a general change in common treatment concepts. The current work supports this approach while highlighting the general risk factor of adverse childhood

experiences. Despite the complexity, the clinician should aim to explore the wide range of general, biological, personal, migration- and cultural-related factors. Otherwise, the impact of childhood experiences can be overshadowed by a solely and one-sided focus and thus potential overemphasis, or under-emphasis, of cultural-related and migration-related stressors in research and clinical work alike.

Although their framework includes a wide range of factors, Graef-Calliess and Behrens (2018) did not elaborate the role of language in clinical practice. Given that autobiographical narratives and therefore language are main tools to reconstruct the individual's past in the psychotherapeutic work, one last notion is presented about the clinical work with bilingual patients. Both research from experimental psychology and clinical case reports in psychoanalytic settings gave evidence that bilinguals recalled more pre-migration childhood events (i.e. which occurred in the country of origin) and that they recalled them in more detail and with higher emotional intensity in their mother tongue compared to narratives in their second language (Schrauf, 2000). Besides analyzing one's narrative, psychoanalytic work provides unique tools to explore one's inner world including unconscious desires, feelings and defenses as well as implicit attachment experiences by interpreting the unfolding *scene*. Further, *transference* and *countertransference* can give evidence of unconscious mental representations of attachment figures besides the active recall of experienced events with them (including questionnaires; 2.2.4). Leszczynska-Koenen (2016) vividly demonstrated in her case study with a client from China how the interpretation of the scene and the transference-countertransference interaction provide "communication channels" (p. 914 ff.) apart from language skills. Therefore, in the psychoanalytic work these "communication channels" can bridge cultural differences and language problems and thus allow access to psychic realities and unconscious childhood experiences with attachment figures.

6.5 Limitations

Several limitations of the current work have to be considered while interpreting the results. A brief overview summarizes the main limitations which have already been presented in the discussion section of each study, followed by the discussion of methodological challenges in immigration health research.

As mentioned and discussed earlier, one of the main limitations refers to recall bias due to the retrospective self-report of childhood experiences. "The interpretation of the relationship between (adverse) childhood memories and depression has raised the questions, if parenting experiences are an etiology factor for depression or can be explained by a negative bias of per-

ception in depressed individuals (Gerlsma et al., 1992). However, studies showed that memories of recalled parental behavior are stable across mood changes (Gerlsma et al., 1993; Richter & Eisemann, 2001)" (Klein et al., under review, p. 15). In order to avoid recall bias, a prospective research design would be ideal to investigate the impact of rearing behavior and child maltreatment on 1st generation immigrant's mental health. However, Spallek et al. (2011) point out that a prospective research design with a sample of 1st generation immigrant is very difficult to implement as the participants have to be already included in the sample when still in their home countries, before even knowing that they might emigrate in the future. As the findings were based on a cross-sectional research design, no causal conclusions can be drawn. Further, psychometrical issues of the used subscales, in particular the physical neglect subscale of the CTQ limit the interpretation of the results (cf. Glaesmer, 2016). However, it is important to note that the applied questionnaires were psychometrically evaluated across immigrant groups in previous studies (Deković et al., 2006; Rodriguez et al., 2019; Runge & Soellner, 2019; Thombs et al., 2007; Tibubos et al., 2018). Considering that anxiety and depressive symptoms can be expressed differently across cultures (Assion et al., 2018; Plag et al., 2018), the cross-cultural invariance of the measurements are particularly important in order to assure that group differences between immigrants and non-immigrants are genuine differences and not due to methodological issues.

The current work and migration research in general face various methodological challenges (cf. Maehler & Brinkmann, 2016; Mösko et al., 2018) which are amplified by the complexity of the research topic. The methodological issues also account for the various and partially inconsistent findings across studies on immigrant mental health (cf. section 2.3.1 and 2.3.2). For example, the definition of who is considered as an immigrant varies across studies. Therefore, in the current studies immigration status was consistently defined according to the German micro census (Statistisches Bundesamt, 2019; see section 2.5.5.4). Even though the sampling was based on a random procedure, which is particularly recommended in cross-cultural research (Berry et al., 2002), the current work faces a selection bias. Like in the most studies surveying immigrant populations, only immigrants with sufficient language skills were included. The association between language skills and acculturation strategy (Grigoryev & van de Vijver, 2017), which is in turn related to child rearing practices (Durgel et al., 2009; Yagmurlu & Sanson, 2009), has to be born in mind while interpreting the current results. A further limitation, which usually applies to immigrant samples, is a participation bias. Consequently, immigrants are often underrepresented in studies, resulting in small sample sizes. Therefore, immigrants from different countries of origin were combined within one subgroup for the feasibility of statistical

analysis. However, the immigrant populations within the subgroups were very likely heterogeneous in terms of their pre-migration experiences, their reasons for migration and their exposure to post-migration stressors. Therefore, the interpretation of our findings is limited due to the within-culture variation in the groups (Prevoo & Tamis-LeMonda, 2017). Likewise, this issue also applies to the German population without migration background which served as a reference group. The assessment of migration and post-migration stressors is undoubtedly important, however, they were not addressed in this study due to economic and statistical feasibility. Mösko et al. (2018) described the methodological dilemma between aspiration and feasibility in epidemiological research in immigrant populations ("methodisches Dilemma zwischen gewünschtem Anspruch und Realisierbarkeit"; Mösko et al., 2018, p. 235). Although these limitations reduce the generalizability of the results, the current work contributes to a better understanding of immigrants' mental health status.

6.6 Future research: Linking attachment theory and migration

The current study provides a groundwork for future research into the complex relationship between childhood experiences, migration status and mental health suggesting a stronger emphasis on a development perspective. The current work showed a relationship between internal representation, quality of relationship with parents and immigrants' mental health. As illustrated in the example of Smechowski's (2017) narrative, this relationship cannot be seen isolated from the experience of immigration which has an impact on family dynamics. In order to expand the current findings, for future research the assessment of attachment pattern and the possible modification by the migratory experiences might be a fruitful approach for research and practice in transcultural health studies. The potential contribution that attachment theory can make to transcultural research and psychotherapy has been recently recognized by researchers and clinicians (Brisch, 2015). However, empirical studies are lacking. In order to provide a theoretical background for the notion why studying an attachment perspective in migration research would be beneficial for both future research and clinical practice, attachment theory is shortly introduced. Following, research questions for future research are formulated.

6.6.1 Attachment theory

Attachment theory, basing on Bowlby's (1973, 1980) pioneering work on child development, is a development theory to comprehend social, behavioral and emotional functioning in interpersonal relationships across the life span. Basing on interpersonal experiences with its primary caregivers in early age, the infant develops internal working models which can be conceptual-

ized as mental representations of the self and significant others. Attachment behavior is particularly activated in times of separation, anxiety and distress, but also of novelty, with the purpose to maintain intimacy to an attachment figure (Crowell et al., 2008). Hence, attachment styles affect through early shaped mental representations, how people approach and cope with unfamiliar people and situation from infancy to adulthood (Ainsworth et al., 2015). Attachment styles are characterized by relatively high stability over life time, although profound experiences like traumatic loss can affect and change individual's attachment pattern. In literature four adult attachment styles have been established: the *secure style* (trust in oneself and others), the *insecure-preoccupied style* (seeking high level of intimacy in relationship and at the same time fearing to be rejected), the *insecure-dismissive style* (avoidance of close relationships and strong self-sufficiency) and *the disorganized style* (often in context of child maltreatment). Attachment patterns have been identified as an etiological factor in the subsequent development of diverse psychopathologies in adulthood with substantial empirical evidence for the association between insecure attachment styles and depression (Dagan et al., 2018). Given that psychotherapy promotes the development of attachment security in depressed patients (Reiner et al., 2016), the application of attachment theory is meanwhile established in psychological and medical practice (Strauß & Schauenburg, 2017).

Despite legitimate criticism about the proposed cross-cultural "universality hypothesis" of attachment theory (Keller, 2013), there is evidence that the desire for interpersonal bonding is a universal human motivation (Baumeister & Leary, 1995). Previous studies suggested comparability of attachment styles across different countries of origin and sex, however, pointing to the need to consider universal processes and contextual determinants in cross-cultural attachment research (Haltigan et al., 2019; Van IJzendoorn & Bakermans-Kranenburg, 2010).

6.6.2 Linking attachment and migration

Experience of migration is nearly always characterized by separation from family, culture and country of origin, and therefore very likely to activate and influence the individual's attachment system. After migration, immigrants face the challenge to bond with unknown people, while at the same time remaining attached to their significant others in their country of origin. Consequently, attachment pattern might play a pivotal role in the sociocultural and psychological adaption of immigrants. Indeed, the few empirical studies in adult immigrants provide evidence that unresolved attachment status was more likely among Dutch and Belgian immigrants compared to non-immigrated Americans (Ecke et al., 2005). Attachment styles were also better predictors of psychological and socio-cultural adaption than demographic factors in Eastern European immigrants in the Netherlands (Polek et al., 2008). Further, a study by Merz and

Consedine (2012) found that ethnic group in an US sample moderated the link between attachment and well-being with older adults. Whereas secure attachment positively influenced well-being across all ethnic groups, the magnitude of the negative effect of insecure-preoccupied styles on well-being varied between the groups.

Although there has been recent interest to integrate an attachment perspective in acculturation research (e.g. Cultural Attachment; Hong et al., 2013), far too little attention has been paid to study the complex interaction between mental health, attachment patterns and acculturation among immigrants. Given this research gap, research questions exploring the association between attachment patterns, mental health, and acculturation strategies in immigrants would be interesting for future research projects. Such research would deepen the understanding of resilient and risk factors moderating the relationship between migration and mental health with focus on attachment pattern. Findings would have clinical implication for attachment-based treatment taking cultural- and migration-related aspects into account.

7 Abstract

Despite the well-known long-term effects of recalled parental rearing behavior and child maltreatment on mental health, studies exploring these pre-migration experiences in adult immigrants are lacking. Therefore, the purpose of the current work was to broaden the understanding of immigrants' mental health status by applying a life course approach exploring the association of immigrants' childhood experiences with their mental health status in a retrospective study-design. The first study compared prevalence rates of child maltreatment assessed by the Childhood Trauma Questionnaire (CTQ) comparing 1st generation immigrants (*n*=132; *M*=49.1, *SD*=16.5 yrs.), 2nd generation immigrants (*n*=162; *M*=39.2, *SD*=17.4 yrs.) and non-immigrants (*n*=2,146; *M*=48.9, *SD*=18.3 yrs.) in a representative population-based study. Distress was assessed by the PHQ-4. Compared to non-immigrants, 1st generation immigrants reported elevated prevalence rates of at least moderate physical neglect (34.8 % vs. 21.4 %) and physical abuse (10.6 % vs. 5.9 %) after controlling for socio-demographic variables. Whereas 1st generation immigrants did not overall report higher depressiveness and anxiety symptoms, the findings suggested that those 1st generation immigrants who had experienced more physical and emotional neglect were particularly vulnerable for higher distress.

In a population-based sample, the second study explored recalled maternal and paternal rearing behavior and the association with depressiveness in adult 1st generation immigrants (*n*=743; *M*=57.4, *SD*=10.1 yrs.) compared to non-immigrants (*n*=6,518; *M*=60.3, *SD*=10.7 yrs.). All participants completed the ultra-short version of The Recalled Parental Rearing Behavior-Questionnaire and the PHQ-9 assessing depressiveness. Regarding countries of origin, the largest subgroups were immigrants from Eastern-Europe, Former Soviet Union, and Arabic-Islamic countries. 1st generation immigrants recalled both their mothers and fathers as more controlling and overprotecting than non-immigrants. Parental emotional warmth was negatively associated with depressiveness across all groups from different countries of origin. Regression analyses showed a relationship between parental control, respectively parental rejection and depressiveness. However, the relation varied in direction and severity between the groups. The results supported the notion that parental warmth is a universal protective factor against depressiveness, whereas the impact of parental control on mental health might be more culturally influenced.

Expanding the life course framework to immigrant youth, the third study investigated sex-related differences in acculturation patterns and the association with mental health in 1st generation immigrant youth (*N*=440; *M*=16.2, *SD*=1.6 yrs). Internalizing and externalizing problems were assessed by the Strengths and Difficulties Questionnaire (SDQ). Almost half of the sample

was born in the Former Soviet Union, followed by Poland (9.3 %). Based on data of this representative school survey, confirmatory factor analysis supported the four- dimensional model of acculturation styles (assimilation, integration, separation and marginalization). Whereas girls more often showed an integration pattern, boys scored higher on the separation and marginalization scale. After adjusting for age and educational level, regression analyses revealed for both girls and boys that marginalization was associated with more internalizing problems. Separation was related to more externalizing problems. Findings suggested that 1st generation adolescents experiencing a lack of belongingness to German society, socio-economic and educational disadvantages might be particularly vulnerable to mental distress. In all three studies analyses were adjusted for sex, age and socio-economic variables due to the association between immigration status and general socio-economic determinates of health.

The current work highlighted the important role of pre-migration experiences, namely child maltreatment and recalled parental rearing behavior, for the occurrence of depression and anxiety symptoms in adult immigrants. Additionally, acculturation was shown to be a contributing factor to the psychological well-being of immigrant youths. For illustrating reasons, the quantitative results of the studies were linked to a life writing approach by presenting Smechowski's autobiography "Wir Strebermigranten". Findings were discussed with regard to the limitations of the studies, clinical implications and future research.

8 Deutschsprachige Zusammenfassung

Unter Berücksichtigung einer Lebenslaufperspektive war das Ziel der vorliegenden Arbeit in einem retrospektiven Studiendesign den Zusammenhang zwischen früheren Kindheitserfahrungen und der psychischen Gesundheit von Immigrantinnen und Immigranten[8] im Erwachsenalter zu untersuchen. In der ersten repräsentativen, bevölkerungsbasierten Studie wurden die Prävalenzen von Kindheitsbelastungen, die mittels des Childhood Trauma Questionnaire (CTQ) erfasst wurden, zwischen Immigrantinnen der 1. Generation (*n*=132; *M*=49.1, *SD*=16.5 J.) mit denen der 2. Generation (*n*=162; *M*=39.2, *SD*=17.4 J.) und der Mehrheitsbevölkerung ohne Migrationshintergrund (*n*=2,146; *M*=48.9, *SD*=18.3 J) verglichen. Depressions- und Angstsymptome wurden mit dem PHQ-4 erfasst. Immigrantinnen der 1. Generation berichteten im Vergleich zu Studienteilnehmenden ohne Migrationshintergrund höhere Prävalenzen von mindestens mäßig ausgeprägter körperlicher Vernachlässigung (34.8 % vs. 21.4 %) und körperlichen Missbrauch (10.6 % vs. 5.9 %) unter Berücksichtigung von sozio-demographischen Variablen. Während Immigrantinnen der 1. Generation nicht generell mehr Depressions- und Angstsymptome aufwiesen, zeigten die Ergebnisse, dass insbesondere diejenigen Immigrantinnen der 1. Generation, welche häufiger körperliche und emotionale Vernachlässigung erlebt haben, besonders vulnerabel für erhöhten Distress waren.

In der zweiten bevölkerungsbasierten Studie wurde der Zusammenhang zwischen erinnertem mütterlichen und väterlichen Erziehungsverhalten und Depressivität bei Immigrantinnen der 1. Generation (*n*=743; *M*=57.4, *SD*=10.1 J.) analysiert und mit Nicht-Immigrantinnen verglichen (*n*=6,518; *M*=60.3, *SD*=10.7 J.). Alle Studienteilnehmende füllten die Kurzversion des Fragebogens zum erinnerten elterlichen Erziehungsverhalten (FEE) und den PHQ-9 für die Erfassung von Depressivität aus. Bezüglich der Herkunftsländer kam die Mehrzahl der Immigrantinnen aus Osteuropa, der ehemaligen Sowjetunion und arabisch-islamischen Ländern. Immigrantinnen der 1. Generation erinnerten ihre Mütter und Väter als kontrollierender und überbehütender als Nicht-Immigrantinnen. Elterliche emotionale Wärme war negativ mit Depressivität in allen Herkunftsgruppen assoziiert. Regressionsanalysen zeigten jedoch, dass der Zusammenhang zwischen väterlicher Kontrolle bzw. väterlicher Ablehnung und Depressivität sich in Richtung

[8] In der vorliegenden Kurzzusammenfassung wird aus Gründen der besseren Lesbarkeit an manchen Stellen der Begriff „Immigrantin“ als generisches Femininum verwendet und bezieht sich immer zugleich auf weibliche und männliche Personen.

und Stärke zwischen den Gruppen unterschied. Während elterliche emotionale Wärme als universeller protektiver Faktor gegen Depressivität verstanden werden kann, scheint der Einfluss von elterlicher Kontrolle auf die psychische Gesundheit stärker kulturell determiniert zu sein.

Um das Jugendalter in der Lebenslaufperspektive zu berücksichtigen, war das Ziel der dritten Studie geschlechtsspezifische Unterschiede in Akkulturationsstrategien und dessen Zusammenhang mit psychischer Gesundheit in einer Stichprobe von jugendlichen Immigrantinnen und Immigranten der 1. Generation (N=440; M=16.2, SD=1.6 J) zu untersuchen. Internalisierende und externalisierende Probleme wurden mittels des etablierten Fragebogens zu Stärken und Schwächen (SDQ) erfasst. Nahezu die Hälfte der Stichprobe gab als Herkunftsland die ehemalige Sowjetunion an, gefolgt von Polen (9.3 %). Basierend auf den Daten dieser repräsentativen Schülerbefragung belegte eine konfirmatorische Faktorenanalyse das vierdimensionale Modell der Akkulturationsstrategien (Assimilation, Integration, Separation, Marginalisierung). Mädchen zeigten höhere Werte auf der Integrationsskala, während Jungen höhere Werte auf der Separation- und Marginalisierungsskala aufwiesen. Nach der Adjustierung von Alter und Bildungsstand, ergaben die Regressionsanalysen, dass bei beiden Geschlechtern Marginalisierung mit internalisierenden Problemen assoziiert war. Es zeigte sich ein Zusammenhang zwischen Separation als Akkulturationsstil und externalisierenden Problemen sowohl für Mädchen als auch Jungen. Die Ergebnisse deuten darauf hin, dass jugendliche Immigrantinnen der 1. Generation, die ein gering ausgeprägtes Zugehörigkeitsgefühl zur Mehrheitsgesellschaft haben sowie sozioökonomische und bildungsbezogene Benachteiligung erleben, besonders vulnerabel für psychische Belastungen sind. Aufgrund des Zusammenhangs zwischen Immigrationsstatus und generellen sozioökonomischen Risikofaktoren für psychische Gesundheit wurden in allen drei Studien die Analysen für Geschlecht, Alter und sozioökonomischen Variablen adjustiert.

Die vorliegende Arbeit untermauert die wichtige Rolle von Kindheitserfahrungen vor der Migration, in diesem Fall Kindheitsbelastungen und erinnertes elterliches Erziehungsverhalten, für das Ausmaß der psychischen Belastungen von Immigrantinnen im Erwachsenalter. Darüber hinaus zeigten die Ergebnisse, dass bestimmte Akkulturationsstrategien zum psychischen Wohlbefinden von jugendlichen Immigrantinnen beitragen. Zur Veranschaulichung der quantitativen Ergebnisse der vorliegenden Arbeit wird anhand der Autobiographie “Wir Strebermigranten” von Emilia Smechowski ein Narrativ von einer persönlichen Migrationsgeschichte vorgestellt. Die Ergebnisse werden vor dem Hintergrund der Studienlimitationen diskutiert. Klinische Implikationen und zukünftige Forschungsideen werden abgeleitet.

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