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The impact of risk and protective factors on mental health and well-being - Austrian adolescents and migrant adolescents from war-affected countries

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ABSTRACT

BACKGROUND: young persons are most strongly affected by displacement through political/military actions. This is also a European problem as well as an issue for the European Union.
Applying the social-ecological model by Bronfenbrenner we concentrated on micro- and meso-systems of Austrian adolescents and migrant adolescents of war-affected countries.
METHODS: a questionnaire was administered to adolescents in Austria attending schools beyond the mandatory school age, yielding a sample of about 1 100 students from Austrian and immigrant background. We used analysis of variance to compare host and immigrant youth as well as regression analysis to assess the impact of risk and protective factors on youth outcomes.
RESULTS: we do find sex differences for protective factors and youth outcomes but few differences between immigrant and Austrian adolescents. Youth outcomes analysed were somatic symptoms, anxiety, depression, self-esteem, anti-social behaviour, substance use, and academic performance. Important risk factors turned out to be intergenerational conflict, exposure to violence, and social distance. Protective factors include family connectedness, parental monitoring, school connectedness, peer support, and neighbourhood attachment.
CONCLUSIONS: the most important protective factor is school connectedness. Social distance and intergenerational conflict are the dominant risk factors influencing youth outcomes. Our research leads to a better understanding of factors determining the well-being of adolescents and contributes to finding new approaches to prevent or cope with mental health problems of young immigrants. In particular it appears to be important to keep young persons in education and/or training since school connectedness influences mental health and well-being positively.

Key words: Adolescents, Mental health, Migration, Refugees

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INTRODUCTION

Migrants and refugees are and will remain an issue that the European Union has to deal with. Among individuals worst affected by migration are young persons displaced through military actions. Thus, it is of major importance to study the living environment of this group of migrants and refugees. Given these considerations the European Commission granted financial support to a consortium of institutions from Albania, Austria, Bosnia-Herzegovina, Croatia, Italy, and the Kosovo to investigate these issues.

The study focuses on adolescents' mental health outcomes. How do adolescents from war-affected countries compare with their peers in the host country? Are there differences between males and females? What is the impact of age? What is the impact of risk and protective factors on mental health and well-being?

One of the important assumptions is that "acculturation of immigrants does not take place in a social vacuum" (1). The theoretical foundation for the empirical analyses is the ecological model originally due to Urie Bronfenbrenner (2, 3) who integrated different theoretical approaches into Developmental Psychology. In his theory the objective environment plays a significant role in the formation of children. The child as developing personality is at the centre of interconnected systems. Four structures are distinguished, each embedded within the next:

1. Micro-systems are the immediate settings, e.g. home, school, work place.
2. The Meso-system comprises interactions between micro-systems.
3. Exo-systems have effects on the individual, but the individual needs not to be an active participant, e.g. neighbourhood, parent's working environment.
4. Macro-systems are overarching institutions such as economic, social, legal, and political systems.

METHODS

An extensive questionnaire – mostly multiple-choice questions – was administered to samples of the relevant population in the countries mentioned above. In Austria the survey was carried out for a sample of all school types for 14–19-year old students, viz. poly-technical schools, vocational schools (mandatory, intermediate and higher), general secondary schools ("Gymnasium"). Two cities were selected: the Austrian capital Vienna, and Linz the capital of the province of Upper Austria.

An overview of the content of the

TABLE 1

OVERVIEW AND SOURCES OF THE SCALES IN THE QUESTIONNAIRE

RISK FACTORS	*Exposure to violence*	California Healthy Kids Survey (4)
	Social Distance	Variant of Bogardus scale, Bogardus (5)
	Intergenerational conflict	Sujoldzic, de Lucia, Rudan, Szirovicza (6)
PROTECTIVE FACTORS	*Family and school connectedness, adult and peer support*	California Healthy Kids Survey (4)
	Neighbourhood attachment	Corrigan (7)
	Parental monitoring, religious observance	Sujoldzic, de Lucia, Rudan, Szirovicza (6)
YOUTH OUTCOMES	*Anxiety, somatic symptoms*	Items from Achenbach (8)
	Depression	Items from the Reynolds Adolescent Depression Scale, Reynolds (9)
	Overall stress	Compilation of anxiety, somatic symptoms, depression
	Anti-social behaviour	Adapted from Youth Risk Behaviour Survey (10)
	Substance use	Adapted from WHO Cross-national Survey (11), Youth Risk Behaviour Survey (10)
	Resilience	California Healthy Kids Survey (4)
	Self-esteem	Rosenberg (12)
	Life satisfaction	Diener, Emmons, Larsen, Griffin (13)
	Academic performance	School grades

questionnaire, a multi-dimensional screening scale for adolescents, is shown in Table 1. It is composed of items from already existing sources and items developed by one of the partners, the Institute for Anthropological Research at the University of Zagreb. Additionally the questionnaire contained socio-demographic items. In total almost 250 questions had to be answered.

The survey yielded a total of 1 114 students aged between 15 and 19 years, with 52% originating in Vienna; there were 919 Austrians (82%) and 195 students from war-affected countries (18%). The condition for inclusion into the analysis was a stay in Austria for a period of approximately 10 years (5 to 8 years old at arrival in Austria). Their countries of origin were: Bosnia-Herzegovina (66%), Serbia (19%), Croatia (9%), Kosovo (3%), and the remainder originated in Montenegro, Albania, and Slovenia. For both groups the numbers of males and females were almost equal: 51% females in the Austrian and 48% females in the immigrant sample.

Before addressing the research questions we tested the reliability of the scales constructed from the individual items for both sub-samples using Cronbach's Alpha (14) as an indicator for inter-item homogeneity of the scales used. A higher score of the scales listed below indicates a higher extent of the dimension measured (with the exception of 'academic performance' due to the Austrian grading system where a lower value stands for a better performance). Cronbach's Alphas are given in parentheses, with the first value referring to the Austrian, the second to the non-Austrian sample.

We were left with the following youth outcome variables: academic performance (0.80; 0.68), satisfaction with life (0.78; 0.74), self-esteem (0.86; 0.80), resilience (0.68; 0.73), anti-social behaviour (0.66; 0.77), substance use (0.74; 0.70), overall stress (0.87; 0.87), anxiety (0.74; 0.76), depression (0.74; 0.74), somatic symptoms (0.74; 0.76).

Reliable scales for risk factors turned out to be intergenerational conflict at home (0.73; 0.71), exposure to violence (0.74; 0.66), social distance (0.93; 0.77).

Reliable protective factors are the following scales: family connectedness (0.85; 0.78), parental monitoring (0.76; 0.71), school connectedness (0.77; 0.72), peer support (0.79; 0.77), neighbourhood attachment (0.82; 0.80), adult support outside home or school (0.89; 0.93), religious observance (0.72; 0.68).

In addition the survey contained socio-demographic variables (SDV) such as sex, age, ethnicity, education of parents, employment status, household size, family affluence, housing situation.

First we employed two-way analysis of variance with age as covariate in order to analyse sex and host/immigrant differences. Second we applied multiple regression analysis to the data to show the impact of risk and protective factors on youth outcomes. Before turning to the regression analysis two intermediate steps were carried out: imputation of missing data and checking the influence of socio-demographic variables on the risk and protective factors.

Given the large number of items we would have lost much information by discarding questionnaires with only a few missing data. Thus we first applied stochastically augmented imputation. For this purpose we regress each potentially missing variable on the other known characteristics of the data set. The resulting coefficients of these auxiliary regressions are used to predict the missing observation, using the known characteristics of the data set whose variable is missing. To avoid an incorrect tendency towards the mean we then added a normally distributed error term with zero mean and the standard deviation of the error of the respective auxiliary regression.

RESULTS

When analysing socio-demographic factors, we find more similarities than differences between Austrians and immigrants: there is no difference with respect to parental education and negligible small differences in the number of siblings.

Fathers' employment status does not differ between migrants and hosts. Migrant mothers are fully-employed to a somewhat higher extent than Austrians, viz. 72% vs. 52%, with part-time employment going in the opposite direction: migrant mothers 13% vs. Austrian mothers 27%.

There are significant differences in housing: 85% of migrant families live in a rented apartment compared to 45% of the Austrians, 4% of the migrants own a family house versus 33% of the Austrians; 52% of the migrant adolescents occupy a bedroom for themselves as opposed to 78% of the Austrian youths.

However, Austrians and immigrants do not differ with regard to the subjectively perceived family affluence: more than 40% of adolescents think that their family is well off, irrespective of the ethnic background; about half of them rank their family affluence as average.

What kinds of differences do exist with respect

to sex or between host and immigrant adolescents? Independent variables in the two-way analyses of variance carried out are sex and host/immigrant, respectively, with age as covariate.

Table 2 gives an overview of the results for the risk and protective factors (RPF) as well as the youth outcomes (YO). Whereas no sex differences could be seen for risk factors, the protective factors parental monitoring, peer support (both show lower scores for males), and neighbourhood attachment (higher scores for males) yielded significant sex differences.

Social distance – low acceptance of relations with other ethnic groups – is larger for host than for immigrant adolescents. Religious observance, in turn, is a more important protective factor for immigrant than for Austrian youths.

Significant age effects suggest that older participants perceived less intergenerational conflict, social distance, family connectedness, school connectedness, and neighbourhood attachment. In addition, there is an interaction effect between sex and host/immigrant: males show higher neighbourhood attachment than females in the host sample, whereas males show lower scores than females in the immigrant sample.

With respect to youth outcomes we also found significant sex differences. Males exhibit more pronounced anti-social behaviour than females. Higher scores for females result for all scales in the domain of stress (anxiety, depression, somatic symptoms); at the same time females score higher on the resilience index. Girls show lower scores for psychological well-being (life satisfaction, self-esteem).

TABLE 2

TWO-WAY ANALYSES OF VARIANCE: RISK AND PROTECTIVE FACTORS AND YOUTH OUTCOMES AS DEPENDENT VARIABLES AND SEX AND HOST/IMMIGRANTS AS INDEPENDENT VARIABLES WITH AGE AS COVARIATE.

SCALE	SEX[a]	HOST / IMMIGRANT[a]	AGE[b]
Risk factors			
Intergenerational conflict			↓
Social distance		H > I	↓
Protective factors			
Family connectedness			↓
School connectedness			↓
Parental monitoring	M < F		
Peer support	M < F		
Neighbourhood attachment	M > F		↓
Religious observance		H < I	
Youth outcomes			
Anti-social behavior	M > F		
Substance use		H > I	
Anxiety	M < F		
Depression	M < F		
Somatic symptoms	M < F	H > I	↑
Self esteem	M > F		↑
Resilience	M < F		
Life satisfaction	M > F		

[a] The inequality sign indicates a significant sex or host/immigrant difference at the 1% level, except for neighbourhood attachment (at 5% level significance).

[b] The arrow indicates direction of impact on the scale with increasing age; statistically significant at the 1% level, except for somatic symptoms (at 5% level significance).
Only scales with statistical significance reported.

There are only two host/immigrant differences: scores for substance use and somatic symptoms are higher for Austrian adolescents. Older adolescents have higher scores on somatic symptoms and self-esteem. With interest we notice that there are no differences for academic performance in all three dimensions.

Although we dispose of several reliable scales for risk and protective factors as well as youth outcomes we find many significant differences between males and females but very few differences between immigrant and Austrian adolescents. Thus, we decided to carry out the analysis for the whole sample with ethnicity included as one of the SDV.

Let us now consider the results of the regression analyses. Firstly, we ask the question if there are any indirect effects of the socio-demographic variables on youth outcomes through their impact on risk and protective factors. For this we regress (via ordinary least squares) all reliable RPF on the available SDV, e. g. sex, age, ethnicity, education of parents, employment status, household size, etc. In addition to the usual t- and F-tests we test for heterogeneity and model specification (Ramsey's RESET test (15)). Only for social distance we find a correct specification and an acceptable goodness of fit (adjusted R^2).

Looking at the explanatory variables, only

TABLE 3

IMPACT OF RISK AND PROTECTIVE FACTORS ON YOUTH OUTCOMES – REGRESSION RESULTS

YOUTH OUTCOMES / RISK AND PROTECTIVE FACTORS	ACADEMIC PERFORMANCE	SELF-ESTEEM	ANTI-SOCIAL BEHAVIOUR	SUBSTANCE USE	OVERALL STRESS	ANXIETY	DEPRESSION
Adjusted R^2	**0.12**	**0.20**	**0.27**	**0.27**	**0.17**	**0.16**	**0.29**
Intergeneration conflict	0.26***	0.23***	0.16**	0.14***	- 0.28**		0.15***
Exposure to violence		- 0.15***				0.27***	0.18***
Social distance	- 0.13***	0.31***	0.02***	0.03***	- 0.01**	- 0.04***	- 0.02**
Family connectedness			- 0.16*		0.09**		- 0.07***
Parental monitoring			- 0.06***	- 0.40***	- 0.12*		
School connectedness	- 0.22***	0.10***	- 0.75***	- 0.39***	0.49***	1.11***	- 0.07***
Peer support		- 0.55**	0.06***	0.31***			
Neighbourhood attachment	- 0.11***						- 0.04**
Adult Support	0.08***				- 0.02**		- 0.03*
Religious observance	- 0.03*	0.28***					
Number of observations	917	978	1 026	1 011	1 034	1 019	1 015

Only significant coefficients presented; socio-economic covariates not shown.

***significant at the 0.01 level **significant at the 0.05 level *significant at the 0.10 level

sex (positive impact of females on most scales) and family affluence (again positive impact of higher affluence on most scales) were significant for the majority of regressions, with a rather small quantitative impact of the latter. There is very little or no impact of SDV on the RPF, thus the indirect effects of these variables on YO are minor and can be neglected.

We now turn to the main model of interest, viz. the analyses of the direct effects of RPF and SDV on YO. The specification follows from the theoretical model above: we regress each youth outcome on all reliable RPF and the SDV. Additionally we account for interaction effects between the RPF and both sex and age. In all instances we test for heterogeneity and correct specification of the model. This leaves us with theoretically and statistically meaningful regression models for seven youth outcomes: academic performance, self-esteem, anti-social behaviour, substance use, overall stress, anxiety, and depression. Goodness of fit and parsimony are the main criteria for the selection of the preferred specification for each outcome. Table 3 summarises the results.

Reading the table horizontally (to answer the questions which are the most important RPF) we see that the dominant risk factors – affecting all or almost all outcomes with high significance in the expected direction – are intergenerational conflict at home and exposure to violence, with social distance contributing to a somewhat lesser degree.

By far the most important protective factor in our sample is school connectedness: its coefficients are statistically highly significant and of essential magnitude. More peer support goes along with greater anti-social behaviour and more substance use, at the same time higher peer support is associated with less self-esteem. On the other hand, we find that adult support (outside the home) exerts the least influence on youth outcomes.

Let us now turn to the columns of Table 3. The best explanatory effect in terms of goodness of fit (adjusted R^2) exert the risk and protective factors on depression, anti-social behaviour, and substance use.

In general, depression, anti-social behaviour, and substance use increase with the risk factors, only depression is reduced with greater social distance.

Better school connectedness reduces all three (negative) outcomes, more intensive parental monitoring decreases anti-social behaviour and substance use.

Although the regressions for academic performance and overall stress pass the statistical tests their explanatory power is rather weak.

DISCUSSION

Our results show only few significant differences between immigrant and Austrian adolescents both for youth outcomes and risk and protective factors by means of two-way analysis of variance But we do find many differences with respect to sex and also some influencing effects due to age. From this we conclude, that we can proceed with the ensuing regression analysis utilising the full sample as long as we control for sex and age.

After selective imputation of missing data and checking for indirect effects of socio-economic variables through their impact on risk and protective factors (there are practically none) we tried to assess the direct influence of risk and protective factors on youth outcomes using multiple regression analysis.

We are left with theoretically and statistically meaningful regressions for just seven youth outcomes, two 'positive' and five 'negative' ones. Only one protective factor – school connectedness – has explanatory power in all regressions, all the others only in three or fewer models with neighbourhood attachment and religion playing the smallest role. Whereas the educational environment exerts the expected influence on most youth outcomes it should be pointed out, that higher school connectedness – maybe in the sense of being too close – seems to lead to high levels of stress and anxiety.

The ambiguous role of peer support as protective factor can be seen in the significant negative relation to self-esteem and the significant positive relations to anti-social behaviour and substance use. Especially peers with low self-esteem may perhaps look for support (talking about problems, help during hard times) in "gangs" involving anti-social behaviour and substance use.

Social distance has significant explanatory power in all seven regressions, intergenerational conflict in six models. It is interesting to note that in our sample greater social distance seems to improve academic performance and also to increase self-esteem. Significant but rather small are the reductions in the stress indicators with increasing social distance. With respect to almost all youth outcomes the influence of intergenerational conflict goes in the expected direction. Ambivalent is its impact on the stress

domain: higher levels of conflict between parents and adolescents reduce overall stress but increase the indicator of depression. Exposure to violence shows the expected signs, although it is significant only in three models (self-esteem, anxiety, and depression).

Summarily, we do find differences between males and females but surprisingly few differences between immigrant and Austrian adolescents. From this we conclude that – at least in our sample – the problems of adolescence appear to be rather similar for both groups of young persons.

Social distance and intergenerational conflict are the dominant risk factors influencing youth outcomes, whereas school connectedness turns out to be the most important protective factor. It is thus of great importance to offer young persons the possibility to continue training and education through their adolescent years. An indirect confirmation of this view can be found in a most recent paper by Bakar (16).

Additionally we suggest to taking policy actions that contribute to the reduction of social distance in the community.

In this context we have to point to some limitations of our study. The empirical basis of our analyses is adolescents – immigrants and Austrians – that appear to be well integrated in the school system. Our sample does not contain information on youths that are not in continuing education or training during their adolescent years. We can only hypothesise that an inclusion of such individuals would potentially strengthen our results.

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