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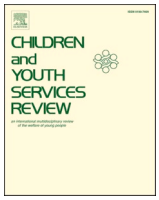

The role of the family's ethnicity and correlates in social workers' risk perceptions: Evidence from a vignette study in Hungary

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ABSTRACT

Studies have shown that children from some ethnic minority families are disproportionately represented in the child protection system. Ethnic-based treatment is problematic because it challenges whether child protection decision-making is based on the principle of 'the best interests of the child'. Roma children are also over-represented in the child protection systems of many European countries, but little research has explored why this is so. The present study seeks to address this gap by examining child welfare workers' perceptions of risk at the early stages of child protection decision-making. The main research question is whether they perceive higher levels of risk if the parents are Roma. *Method:* We use data from a vignette-based survey conducted among child welfare workers (N = 600) in Hungary in 2018. The factors influencing social workers' risk perceptions are analysed using multilevel ordinal logistic regressions. The regression models of risk perception include case variables (harm to child, parents' ethnicity, mother's education, parents' employment, housing conditions, living environment, parental alcoholism, mother's willingness to cooperate), and the individual characteristics of the social worker. Ethnicity is examined individually as well as in interaction with other case characteristics. *Results:* Findings show that physical harm to the child, parental alcoholism, a messy living environment, and the non-cooperative behaviour of the mother increase the level of risk perceived by child welfare workers. There is no evidence of a statistical association between parental socioeconomic status and the social worker's perception of risk. Family ethnicity also does not have a statistically significant impact on risk perception (main effect). However, some case characteristics affect risk perception differently when the family is of Roma origin (interaction effects). Physical abuse has a strong effect on the social worker's perception of risk, but this effect is more modest when the family is of Roma origin. Likewise, the mother's non-cooperative behaviour is a risk-increasing factor, but this effect disappears for Roma families. *Conclusions:* Although, no ethnic bias was found in social workers' perception of risk, our findings indicate that the perception of risk for Roma families is less dependent on the circumstances of the case than for majority families. In some cases, this may lead to an unjustified overestimation of risk or, conversely, an underestimation when the family is Roma.

1. Introduction

Evidence from different countries suggests that some racial/ethnic minority groups are overrepresented at different stages of child protection intervention. In the USA, for example, research has documented that compared with White families, Black families are disproportionately reported to and investigated for child maltreatment, and disproportionately represented in out-of-home care (Kim and Drake, 2018; Putnam-Hornstein et al., 2013). In Canada, data indicate the overrepresentation of Aboriginal children at different stages of child protection interventions (Foster, 2007). In the United Kingdom, there is an overrepresentation of Black African and Black Caribbean children in care (Bywaters et al., 2017; Bywaters et al., 2019).

The limited research available on Europe's largest minority, the Roma, shows that Roma children also disproportionately enter the child protection system in their countries. They are strongly overrepresented in out-of-home (institutional) care, partly because they are more likely to enter and partly because they are less likely to leave (Darvas et al.,

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2016; ERRC, 2011a; ERRC, 2017a; ERRC, 2017b). Some research based on qualitative data has revealed that the reasons for this are complex. Firstly, factors such as poverty, poor material and housing conditions, high school drop-out rates, early childbearing, etc., represent a concentrated risk for the child protection system. Inadequate preventive measures, insufficient numbers of skilled social workers, and other institutional weaknesses also play a role. Besides, some research has also shown that child protection professionals often perceive the Roma culture as problematic, being more accepting of child abuse, and therefore consider Roma families to be a higher-risk group (ERRC, 2018). This culturalist approach is also relevant in Hungary, where Roma children are heavily overrepresented at all levels of the child protection system (Darvas et al., 2016; ERRC, 2011b; Herczog and Neményi, 2007).

In this study, we seek to find out whether there is an ethnic bias against Roma families in Hungarian social workers' child protection decisions. Our research is the first attempt to use quantitative methods to analyse ethnic biases among child welfare professionals in Hungary (and also in Central and Eastern European countries). We also look at how social workers' individual-level characteristics influence their child protection decisions, on which we also have little prior knowledge.

To explore the factors associated with child protection decision-making, this study uses data from a vignette-based survey conducted among child welfare workers in Hungary in 2018. The survey focused on the early stages of the decision-making continuum in child protection: assessment of a child protection case and the decision whether to initiate an investigation or close the case. In this study, we only report our research findings on child welfare workers' assessment of the case. More specifically, our ambition is to find out whether social workers perceive higher levels of risk for families of Roma origin. The case vignettes used in this study describes a situation where the social worker has to investigate a case of unexcused school absence. In the vignettes, we manipulated case characteristics related to the socioeconomic background and ethnicity of the child's family, the type of maltreatment, the presence of family problems, and parental cooperativeness. Six hundred respondents were presented with the vignettes and asked to assess the level of risk to the child. To examine the impact of ethnicity and other case characteristics on social workers' risk perceptions, we use multilevel ordinal regression models. Also, we look at whether ethnicity moderates the effects of the other characteristics of the case.

The paper proceeds as follows. Section 2 first provides a brief review of the previous research findings on the factors influencing social workers' decisions made at the early stages of the child protection decision-making continuum. In the second part of Section 2, we summarize the theoretical explanations for and the related evidence on the overrepresentation of ethnic minorities in child protection. Section 3 describes the research questions and the methods used. Section 4 presents the results, and Section 5 concludes.

2. Theoretical background and literature review

2.1. Key factors that determine the early stages of child protection decision-making

To organize knowledge on the factors associated with decision-making in child protection, the Decision Making Ecology (DME), developed by Baumann et al. (1997) and Baumann et al. (2011), seems to be a useful conceptual framework. The DME considers child protection decisions to be a function of four groups of factors: characteristics of the case (e.g. type of maltreatment, poverty and ethnicity of the family), the decision maker (e.g. experience, attitude), the organization (e.g. resources, workload), and external characteristics.

Most of the previous studies investigating the early stages of child protection decision-making focused on the *case factors* (see Damman et al., 2020; Lauritzen & Vis, 2018). According to the findings of a systematic literature review (Lauritzen and Vis, 2018), the most important case characteristics that proved to have an effect on whether cases were investigated or dismissed are the racial/ethnic background of the family, socioeconomic status of the parents, and substance abuse among parents. A study conducted in Texas by Dettlaff et al. (2011), for example, demonstrated that race was an important predictor of investigation decisions. Similarly, in Minnesota, Jones (2015) found that reports of cases with children of minority families were more likely to be investigated. By contrast, in another study from the USA, Howell (2009) reported no association between race and the social worker's decision to accept or reject a maltreatment report.

As for the effect of the family's socioeconomic status, findings are mixed, too. In Canada, Moraes et al. (2005) revealed that poverty of the family was not associated with the social worker's decision on whether to dismiss a case. In Israel, Jedwab et al. (2015) found no significant relationship between the socioeconomic status of parents and the substantiation decision. However, findings from the USA show that maltreatment reports were less likely to be screened in for investigation when the family had a higher income (McDaniel and Slack, 2005).

With regard to the association between the parents' substance abuse and social workers' investigation decisions, research findings are unanimous. Evidence from the USA (Howell, 2009) and Canada (Williams et al., 2011) suggest that substance abuse of parents are associated with a higher likelihood of further investigation.

Much less research has been conducted on the effects of *social workers' individual characteristics* on their child protection decisions. The few exceptions include studies on social workers' socio-demographic characteristics (Stokes and Schmidt, 2012), social workers' history of childhood abuse (Pecnik and Brunnberg, 2005), and social workers' child welfare attitudes (Davidson-Arad and Benbenishty, 2016).

2.2. Racial/ethnic disproportionality in child protection

Different theories have been proposed to explain the existence of racial/ethnic disproportionality[1] in child protection. For example, Fluke et al. (2011) offer four possible explanations: (i) disproportionate need of families of racial/ethnic minorities; (ii) racial/ethnic bias among child welfare professionals; (iii) child welfare system factors, such as service provision to families of racial/ethnic minorities; (iv) geographical context. We limit here the discussion to the two mostly influential explanations, which are referred to by Drake et al. (2011) as the 'risk model' and the 'bias model'.[2]

The risk model contends that there are actual differences in the rates of child maltreatment between the different racial/ethnic groups, and that racial/ethnic disproportionality is primarily the reflection of these underlying differences (Feely and Bosk, 2021; Drake et al., 2009). The disproportionate representation of racial/ethnic minorities is explained by the poverty and its concomitant vulnerability of these groups (Fluke et al., 2011). A considerable number of studies indicate that child maltreatment occurs disproportionately among poor families (Drake et al., 2009; Sedlak et al., 2010). Research also suggests that it is not minority status but poverty, and more precisely the risks associated with poverty (e.g. substance abuse, violence, mental illness, etc.) that might explain the overrepresentation of minority children in the child protection system (Drake et al., 2011; Fluke et al., 2011).

Further, several studies have also revealed that racial/ethnic

[1] In this study, we use the term racial/ethnic disproportionality to describe the overrepresentation of children of certain racial/ethnic groups in the child protection system as compared to their percentages in the overall child population (Ards et al. 2012).

[2] We note that for Roma children the other two explanations are also relevant. A study in six countries (ERRC 2011a) found that the prevention tools used are often inadequate to the needs of vulnerable Roma families and that the financial and human capacities needed for effective prevention are not always available. The geographical context may also matter, since Roma often live in segregated areas with concentrated poverty.

disproportionality varies substantially across the socioeconomic spectrum. According to Kim and Drake (2018) and Drake et al. (2009), the overrepresentation of Black children in the U.S. child protection system disappears or significantly decreases and the under-representation of Hispanic children increases when controlling for poverty. Bywaters et al. (2019) has found analogous patterns for the overrepresentation of Black African and Black Caribbean children and the underrepresentation of South-Asian children.

The other explanation for racial/ethnic disproportionality, the bias model, contends that the disproportionate representation of minority children in the child protection system is a result of differential treatment by race/ethnicity, or racial/ethnic bias (Fluke et al., 2011). Proponents of this approach suggest that differential treatment of minorities may be external or internal to the child protection system, or both. In the first case, discriminatory practices by agents operating within institutions that interact with the child protection system – such as schools, hospitals, law enforcement, etc. – may result in higher numbers of minority children referred to the child protection system (Fluke et al., 2011). In the second case, inequitable practices occur among child protection staff, at any point of the decision-making continuum (Drake and Zuravin, 1998; Fluke et al., 2011).

Research investigating racial and ethnic biases among child protection professionals is limited, with little evidence and conflicting findings (Arruabarrena et al., 2017; Fluke et al., 2011). Many of these works have used case vignettes (i.e. hypothetical cases) of child maltreatment. In Israel, Enosh and Bayer-Topilsky (2015) have found that the effect of the family's ethnic background on social workers' subjective risk assessment was restricted to cases in which the level of objective risk was ambiguous (meanwhile social workers assessed consistently higher levels of risk for families of low socioeconomic status). Using visual vignettes, Ards et al. (2012) have demonstrated the influence of race on caseworkers' assessment of the case in the USA. An Australian study by Keddell and Hyslop (2019) has reported on a moderate effect of family ethnicity on caseworkers' perception of risk, safety and decision. However, other works have found no ethnic bias among caseworkers in child protection services. In Canada, Stokes and Schmidt (2011) have shown that the impact of race and poverty were not significant in social workers' decision about the severity of risk and service provision. In a similar vein, a Spanish study by Arruabarrena et al. (2017) has uncovered that caseworkers' judgments of maltreatment severity were associated neither with family ethnic origin nor socioeconomic status. Having examined social workers' responses to child protection cases in four countries (Denmark, Germany, Sweden, and the United Kingdom), Forslund and her co-authors (2002) concluded that social workers made no difference between families on the basis of ethnic background.

These results indicate that ethnic bias, if any, is primarily observed in the ethnically different magnitude of risk perceived by professionals. It is not clear why professionals may assess higher levels of risk for ethnic minorities than for the majority. One possible explanation is that the behaviour of families from minority backgrounds tends to be seen by the child protection system as a cultural issue and the child maltreatment as a cultural (rather than social) problem. The essentialist approach to minority culture may therefore lead the professional to perceive the behaviour of members of such a culture as a higher risk (Eliassi, 2015).

3. Research questions, data and methods

3.1. Research questions

In this study, we address two research questions. First, we examine how the case characteristics affect social workers' perceptions of risk to the child. More specifically, we are interested in looking at the effect of family's ethnicity on the social worker's risk perception. However, as suggested by the DME framework (Wittenstrom et al., 2015), we suppose that the case factors affect the child protection decision-making process both independently and interactively. That is to say, we assume that the ethnic origin of the family may moderate the impact of other case characteristics on the social worker's risk perception.

Some previous studies, related to later stages of the child protection decision-making continuum, have used interaction terms between race/ethnicity and other case characteristics. For example, Harris and Courtney (2003) showed that race/ethnicity had a different effect on family reunification in two-parent families than in one-parent families. A study by Baumann et al. (2010) found that race effects are more pronounced in African American families with drug and housing problems, while families without these problems showed no difference from Anglo families.

Based on the suggestion of the DME framework and the prior research findings, we do not only include the ethnic origin of families (main effect) in our models, but also the interaction terms of ethnicity and other characteristics of the case (e.g. the type of harm, the presence of family problems, parental cooperativeness).

Our second research question focuses on the impact of social workers' individual characteristics on their risk perception. Among the socio-demographic characteristics we investigate the effects of age, gender, type of education, and professional experience. We note that the effect of social workers' ethnicity is not examined in this research.[3]

3.2. Sample

Our study was based on a survey of 600 family and child welfare workers, covering 19 % of the total family and child welfare worker population in Hungary. The main goal of the survey, conducted between November 2018 and February 2019, was to review the working conditions of the service staff, including a block of questions on attitudes towards poverty and the poor. For sampling, we had a list of municipalities[4] with family and child welfare services and the number of social workers working in the settlement. First, we selected a random sample of counties to ensure regional representativeness. Then, the municipalities of the selected counties were stratified according to the number of social workers, and a random sample was taken from each stratum. In total, 178 out of 652 municipalities and 9 out of 23 capital districts were included in the sample. A computer-assisted personal interview (CAPI) was conducted with each social worker, with the response rate being 65 %.

Ninety percent of the sample were women, 12 % lived in Budapest, 52 % in cities, and 36 % in small towns. A third of the respondents were aged between 30 and 39 years, another third between 40 and 49 years, and those below 30 years and above 50 years each constituted 16 % of the sample. On average, they had over 9 years of experience in social work. All of them had some type of tertiary education: nearly two-thirds had a degree in social work or a related discipline.

3.3. Case vignette

To map the latent decision-making routines of social workers, we used a case vignette. This method is often used to capture professional perceptions, opinions, judgements, and decisions (e.g. Arruabarrena et al., 2017; Keddell and Hyslop, 2018; Stokes and Schmidt, 2012). The vignette was written by the authors and reviewed by two independent professionals and modified according to their suggestions.

In the hypothetical case described in the vignette, the child welfare

[3] In Hungary, no data are available on the ethnic composition of social workers. The proportion of Roma among them is likely to be only a few per cent, given that the job of social worker requires tertiary education and the proportion of Roma with tertiary education is only 2% according to the 2022 census.

[4] Districts in the case of the capital city.

worker receives a referral from the school about an 8-year-old child who is frequently absent from school and whose behavioural problems and poor academic results are also a cause for concern. Child welfare workers are well aware of this situation, since schools, as members of the child protection reporting system, are obliged to report unexcused absences exceeding 10 h to the child welfare service. The service is responsible for identifying the reasons and drawing up an action plan to remedy the situation. Therefore, the type of intervention depends on the level of risk perceived by the social worker based on the available (and often incomplete) information. We investigate whether the social worker's risk perception is influenced by the parents' ethnicity and other case characteristics.

The variables manipulated in the vignette referred to the child's family circumstances, which the child welfare worker identified during the assessment of the family environment. Ethnicity is a key variable for this study, but incorporating it into the case vignette is not straightforward. Indeed, Roma ethnicity is not an objective category, like country of origin for migrant minorities. In the case of Roma, ethnicity should be seen primarily as a relationship between a minority marked with an ethnic category and an unmarked majority (Feischmidt, 2010). The vignette expressed this idea by stating that the parents were Roma or by not mentioning ethnicity at all. The basic structure of the vignette was as follows.

> The child lives with his mother, stepfather and two younger half-brothers, the biological father has no contact with them. The school reports that (*harm to child*). The family moved to the settlement about six months ago, has been living in (*housing conditions), (living environment), (parents' ethnicity)*. The mother *(mother's education), (parents' employment status). (stepfather's alcoholism).* You warn the mother of the consequences of unexcused absence and offer family care to resolve the family problems. She *(willingness to cooperate)*.

Table 1 shows the categories of vignette variables and how they were formulated in the questionnaire.

Each respondent received two randomly selected different vignettes from a subset of the vignette universe.[5] This subset included 190 vignettes out of the 1536 possible combinations. The restriction was necessary because many of the possible combinations were implausible. For example, none of the vignettes included a Roma mother with tertiary education, as only 1 % of the Roma female population falls into this category (HCSO, 2014).[6]

After reading the vignettes, the participants were asked to assess the risk of the case to the child (1 = no, 2 = low, 3 = moderate, 4 = high, 5 = very high). In this study, the social worker's subjective risk evaluation measured in this way is used as the dependent variable.[7]

Table 1
Description of the categories of vignette variables.

Categories of vignette-variables	Wording of the category
Harm to child	
emotional harm	the mother often treats the child impatiently and coldly, often scolding and humiliating him rudely
neglect	the child often goes to school in dirty, out-of-season clothes, and often lacks school equipment
physical harm	the father slapped the child in front of a schoolmate
Housing conditions	
average	a house in average condition
poor	a poorly maintained house with peeling plaster
Living environment	
clean and tidy	the house is clean, the garden around it is well-kept
messy and dirty	the house is messy, the garden around it is weedy
Parents' ethnicity	
non-Roma	(not mentioned)
Roma	both parents are of Roma origin
Mother's education	
tertiary	has a higher education
secondary	graduated from high school
vocational	has completed vocational education
elementary	has completed primary school
Parents' employment	
market employment #1	the mother works as an employee, just like the stepfather
market employment #2	the mother is currently on childcare, the stepfather is employed
no market employment #1	the mother is currently on childcare, the stepfather works as a public worker
no market employment #2	the mother is currently on childcare, the stepfather used to work as a public worker but is currently out of work
Stepfather's alcoholism	
no	(not mentioned)
yes	according to neighbours, the stepfather drinks regularly
Mother's willingness to cooperate	
willing to cooperate	she shows cooperation and promises to pay more attention to the child's school attendance
unwilling to cooperate	she refuses to cooperate and does not accept the help offered

3.4. Analytical strategy

We performed multilevel ordinal logistic regressions to examine the effect of ethnicity and other case characteristics on the levels of risk perceived by social workers. The ordinal response model was chosen because the dependent variable is ordinal. Our baseline models include random intercepts at the level of subjects and will be referred to as a random effects model. Multilevel modelling accounts for the fact that the responses to factorial vignettes are nested within participants and responses are likely to be correlated within participants.

The regression models of risk perception include not only the above listed eight case (vignette) variables but also variables capturing the individual characteristics of social workers, including age, gender, type of degree (a dummy variable indicating having a degree in social work and related fields or in a different field), professional experience, childhood experience of hardship (a dummy variable denoting whether the respondent had experienced poverty or other related problems in childhood), and work overload (a dummy indicated having too high a caseload).

Since we are interested in examining both the ethnic biases in child welfare workers' risk perceptions and the moderating effect of ethnicity on such perceptions, we estimated two regression models. Model 1 includes only main effects and is appropriate to study the ethnic biases. Model 2 augments Model 1 with interaction terms among ethnicity and the case (vignette) variables. This model is appropriate to examine which case vignette effects are moderated by ethnicity.

To check the robustness of our estimates we also estimated fixed-effects ordinal logistic regression models (Baetschmann et al., 2020). The fixed-effects ordinal response model examines the relationships between the change in the dependent variable and the changes in the explanatory variables. The advantage of the fixed-effects modelling strategy is that the study of the relationships among changes eliminates biases due to the presence of unobserved person-level variables. Note that the fixed-effects models do not include control variables because they examine the relationships among changes, and personal

[5] No statistically significant difference was found between the first and second round (Chi-squared test, p=.3585), so this confirms that the assignment of vignettes to respondents was indeed random.

[6] We note that due to the manipulation of multiple variables, and to the exclusion of implausible combinations, the vignette variables are correlated. The average inter-item correlation is 0.11. The largest correlation is found between mother's higher education and poor housing conditions (r=-0.53).

[7] We also asked questions about the proposed intervention decision ranging from closing the case to initiating an investigation, but the results are not reported here.

Table 2
Means and the distribution of perceived level of risk across the case variables.

Variables	Means	% of		
		no risk + low risk	moderate risk	high + very high risk
Perceived level of risk to the child				
no risk	0.013			
low	0.081			
moderate	0.333			
high	0.419			
very high	0.154			
Parents ethnicity				
not mentioned		8.7	34.7	56.6
Roma	0.392	10.4	31.2	58.4
Harm to child				
neglect	0.292	9.5	32.1	58.3
emotional harm	0.358	8.7	38.6	52.7
physical harm	0.351	9.9	29.0	61.1
Stepfather's alcoholism				
no		10.5	36.0	53.5
yes	0.354	7.4	28.4	64.2
Mother's willingness to cooperate				
no cooperation		7.9	28.0	64.1
cooperation	0.492	10.9	38.8	50.3
Living environment				
clean and tidy		12.0	34.3	52.8
messy and dirty	0.623	7.8	32.2	60.0
Housing conditions				
average		8.6	34.7	56.8
poor	0.584	10.0	32.4	57.7
Mother's education				
primary or vocational		9.5	33.3	57.3
upper secondary or tertiary	0.165	8.9	33.7	57.4
Parental employment				
no market employment		8.9	33.9	57.2
market employment	0.262	10.6	31.8	57.6

Notes: sample size = 1152

Table 3
Multilevel ordered logistic regressions of the perceived level of risk.

Variables	Model 1		Model 2	
Case characteristics				
Roma parents	−0.0432	(0.256)	−0.6131	(1.007)
Harm to child: neglect	0		0	
Harm to child: emotional harm	−0.0924	(0.476)	0.1705	(0.686)
Harm to child: physical harm	0.6004**	(3.023)	0.9331***	(3.610)
Stepfather's alcoholism	0.7040***	(3.785)	0.5720*	(2.328)
Mother's willingness to cooperate	−0.8568***	(4.967)	−1.1180***	(5.203)
Messy living environment	0.5376**	(3.023)	0.3330	(1.443)
Poor housing conditions	0.2772	(1.377)	0.2644	(0.974)
Mother's higher education	−0.0279	(0.107)	−0.0746	(0.255)
Parental employment	0.2153	(0.954)	−0.0954	(0.334)
Harm to child: emotional harm X Roma parents			−0.6551	(1.642)
Harm to child: physical harm X Roma parents			−0.7976*	(2.007)
Roma parents X Stepfather's alcoholism			0.4428	(1.182)
Roma parents X Mother's willingness to cooperate			0.7774*	(2.212)
Roma parents X Messy living environment			0.4128	(1.163)
Roma parents X Poor housing conditions			0.0585	(0.147)
Roma parents X Mother's education				
Roma parents X Parental employment			0.9220	(1.769)
Social workers' characteristics				
Age: <30	0		0	
Age: 30–39	0.3537	(0.986)	0.3655	(1.011)
Age: 40–49	1.1888**	(3.075)	1.2128**	(3.114)
Age: 50 or older	1.0779*	(2.299)	1.1178*	(2.367)
R is male	−0.4561	(1.219)	−0.4823	(1.278)
Social work or related degree	−0.2274	(0.964)	−0.2130	(0.896)
Experience (years)	−0.0351*	(2.058)	−0.0371*	(2.161)
Childhood experience of hardship	0.4718*	(1.994)	0.4990*	(2.091)
Work overload	−0.2244	(0.970)	−0.2487	(1.065)
Constant				
N of observations	1152		1152	
N of individuals	577		577	

Notes: Numbers in parentheses are *t* statistics. *=$p<0.05$, **=$p<0.01$, ***=$p<0.001$

characteristics of the respondents do not vary across vignettes. The fixed-effects ordinal response model has some drawbacks as well: participants who do not change their assessments across vignettes cannot be included in the estimation.

We conducted all statistical analyses using the statistical software Stata due to the availability of both the random-effects and the fixed-effects ordinal regression models (Baetschmann et al., 2020).

4. Results

4.1. The effect of ethnicity and other case characteristics

The bivariate relationships between social workers' perceptions of risk and the case variables are shown in Table 2. (Appendix A1 reports the means and distribution of risk assessments across the characteristics of the social worker.) Four factors are associated with risk perceptions: type of harm to the child, presence of alcoholism in the family, the mother's cooperative attitude and the living environment. More specifically, social workers perceive higher risk if (1) the harm to the child is physical rather than emotional harm or neglect, (2) the stepfather drinks regularly, (3) the mother is not willing to cooperate, and (4) the living environment is messy. Ethnicity and the other socioeconomic status characteristics like education and employment are not associated with risk perceptions.

Table 3 presents the random-effects ordered logistic regression estimates. After the casewise deletion of missing cases, 1152 observations on 577 individuals are available out of the 1200 observations on 600 individuals.[8] In Model 1, the regression coefficients on physical harm, stepfather's alcoholism and messy living environment are positive and statistically significant. These results suggest that physical harm, stepfather's alcoholism and messy living environment increase the level of risk perceived by social workers. Since the coefficient of the emotional harm variable is negative, social workers tend to attribute a higher level of risk to physical harm than to either emotional harm or neglect. A similar finding was reported by Stokes and Taylor (2014) for Canada. The coefficient on the mother's cooperativeness variable is negative and significant, suggesting that the social worker tend to perceive a lower risk if the mother cooperates with the child welfare service. This finding is in line with a former study by Gold et al. (2001), which demonstrated a significant effect of maternal cooperation on Canadian and Israeli social workers' risk assessment.

The other four vignette variables lack statistical significance. The family's ethnic origin, our key independent variable, does not seem to

[8] The missing cases are mainly due to missing responses to two survey questions about childhood experience of hardship and workload (control variables in the regression analyses). There are also 7 missing cases on the dependent variable.

have an effect on social workers' risk assessment. This finding is consistent with several studies using case vignettes (Forslund et al., 2002; Stokes and Schmidt, 2011; Arruabarrena et al., 2017), but inconsistent with several others (Ards et al., 2012; Enosh and Bayer-Topilsky, 2015; Keddell and Hyslop, 2019).

We found no significant associations between the family's socio-economic status (as measured by maternal education, parental employment, and housing conditions) and the social worker's

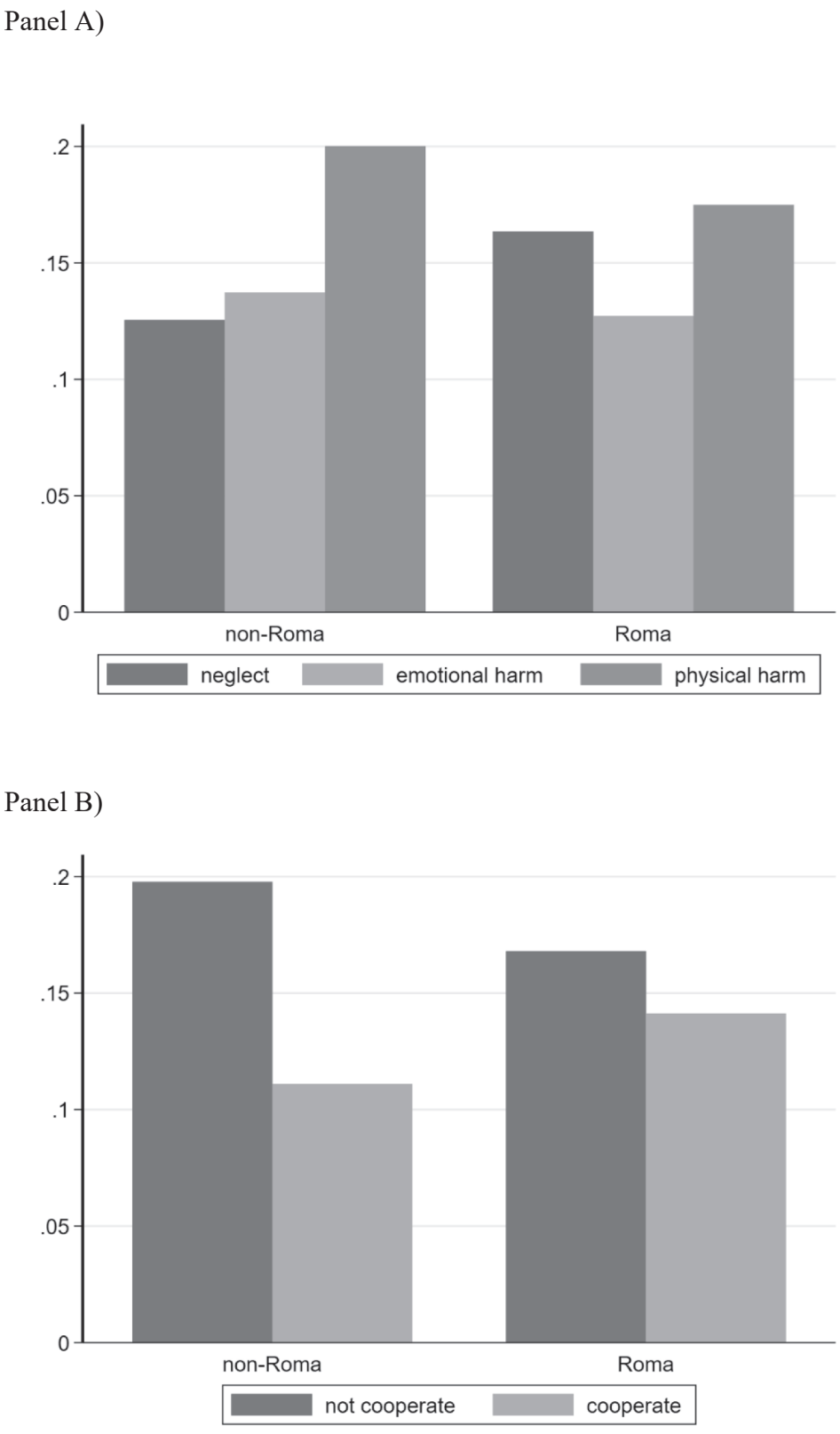

Fig. 1. Predicted probabilities of very high level of perceived risk.

perception of risk. These results support those of Arruabarrena et al. (2017), Moraes et al. (2005), and to some extent also those of Stokes and Schmidt (2011), who found that while poverty did not influence child protection decisions, other factors of disadvantage such as substandard housing did emerge as significant predictors.

4.2. Interaction terms with ethnicity

We assumed that ethnicity may moderate the effect of other case factors on social workers' risk assessment. To examine this, Model 2 augments the baseline model with interaction terms between case (vignette) variables and ethnicity. Only two of the eight interaction terms are statistically significant: the interaction with physical harm and mother's willingness to cooperate. The negative sign of the physical harm interaction suggests that the effect of physical harm has a more modest effect among the Roma than among the non-Roma. The main effect of the physical harm variable is positive and significant, suggesting that physical harm has a positive effect on risk perceptions *among the non-Roma*. The magnitude of the negative interaction term is somewhat smaller than the magnitude of the main effect, indicating that the physical harm has no or just a small effect *among the Roma*. Panel A) of Fig. 1 illustrates this pattern. Among the non-Roma, physical harm is perceived as a higher risk to the child than neglect or emotional harm. In contrast, the differences in risk perceptions across the types of harm are smaller among the Roma, and physical harm is not perceived as risky as among the non-Roma.

A similar pattern emerges with regard to the effect of maternal cooperativeness. The main effect of this variable is negative and significant, which means that maternal cooperation is a factor that reduces social workers' risk perceptions *among the non-Roma*. Because the magnitude of the positive (and significant) interaction effect is smaller than this main effect, the cooperativeness of mothers does not have a noteworthy effect *among the Roma*. Panel B of Fig. 1 illustrates this moderating effect. Lack of cooperativeness increases the probability of high risk perception by almost 10 percentage point among the non-Roma, but this effect, if any, is much smaller among the Roma.

We examined the robustness of our findings using fixed-effects ordinal regression models (see Appendix Table A2). As mentioned in Section 3.4, fixed-effects models study the relationships between within-subject changes. With one exception, all above-mentioned conclusions are supported by the fixed-effects estimates. The exception is that the fixed-effects coefficient on messy living environment in the baseline model lacks statistical significance. However, the moderating effect of ethnicity does remains: that is, messy living environment seems to be assessed as risky to the child only among the Roma. Note also that the lack of statistical significance may be due to the smaller sample size of 516 cases, which is due to the fact that 258 respondents reported different levels of risk across the two vignettes.

4.3. The effect of social worker characteristics

Since we know little about the significance of social workers' individual characteristics in their child protection decision-making (Damman et al., 2020), we devote a section to reporting the relevant findings from this study. Our models included six social worker characteristics: age, gender, type of degree, professional experience, childhood experience of hardship, and work overload. The findings show that social workers aged 40–49 and above tend to perceive higher risk to the child than social workers younger than 30 years (see Table 3). In the Hungarian context, the age variable may capture a cohort effect, meaning that social workers born before 1978 and socialized in the state-socialist era are more stringent in their risk assessments than social workers whose formative years overlapped with the first decade of post-communist transition.[9] Professional experience has a negative effect on social workers' risk perceptions. The experience of hardship (poverty or other problems social workers encounter in their practice) during childhood has a positive effect on risk perceptions. Although, the type of hardship was not specified in the questionnaire of our study, this finding seems to be in line with previous findings suggesting that professionals with a history of childhood abuse are associated with perceiving higher risk to the child (e.g. Pecnik and Brunnberg, 2005). Gender, the type of degree (social work and related fields versus other degree) and work overload do not appear to influence the assessment of the risk to the child.

5. Conclusions and discussion

Studies have shown that children from ethnic minority families are disproportionately represented in the child protection system. Research suggests that this is due to the higher incidence of poverty and vulnerability of these families and/or because they are treated differently from non-minority families. Ethnic-based treatment is problematic because it challenges whether child protection decision-making is based on the principle of 'the best interests of the child'.

There is also a disproportionate representation of Roma children in the child protection system, but little research has explored why this is so. Our study sought to address this gap by examining child welfare workers' perceptions of risk at the early stages of child protection decision-making. Our research question was whether they perceived higher levels of risk if the parents are Roma. We investigated this question using data from a vignette-based survey conducted in Hungary. The relatively large sample size (600 respondents) allowed us to examine the effect of ethnicity both independently and in interaction with other characteristics of the case.

Our findings showed that physical harm to the child, parental alcoholism, a messy living environment, and the non-cooperative behaviour of the mother increased the level of risk perceived by child welfare workers. Furthermore, we found no evidence of social bias in the risk perceptions, i.e. higher risk perception due to lower socioeconomic status of the family. This result suggests that the generally high level of education of Hungarian child welfare workers provides them with skills and knowledge that might make them less susceptible to socioeconomic biases. Likewise, there is no evidence of an ethnic bias, i.e. a situation is not perceived as more risky for the child simply because the family is Roma. This may be due to the fundamental belief among Hungarian child welfare workers that social work should be colour-blind (Darvas et al., 2016). Overall, the study does not provide evidence that the overrepresentation of Roma children in the child protection system can be explained by ethnic bias.

Examining interaction effects, however, made the picture more nuanced. Some case characteristics affected risk perception differently when the family's Roma ethnicity was mentioned. Physical abuse had a strong effect on the social worker's perception of risk, but this effect was more modest when the family included in the vignette was Roma. Likewise, the mother's non-cooperative behaviour was a risk-increasing factor, but this effect disappeared when Roma ethnicity of the family was mentioned. These findings indicate that social workers perceive cases in ethnic minority families as too homogeneous, and their perception of risk is less dependent on the circumstances of the specific case compared to the context of majority families. In some cases, this may lead to an unjustified overestimation of risk or, conversely, an underestimation when the family is Roma.

We also examined the relationships between social workers' personal characteristics and their risk perceptions. Our results showed that birth

[9] Recall that the survey was conducted between November 2018 and February 2019.

cohort, professional experience and childhood experience of difficulties all significantly influenced the case assessment of the social worker. If the composition of social workers by these characteristics is different in Roma and non-Roma settlements, as is the case in Hungary (Husz et al., 2020), this may in itself contribute to the overrepresentation of Roma children.

Our study has some limitations. First, since our research was a first attempt to analyse ethnic bias in Hungarian social workers' risk perceptions using factorial survey experiments, further studies are needed to confirm the results. Second, in this study, only the very early stage of the decision-making continuum was examined, and it is not certain that this is the point at which ethnic bias is most prevalent (if at all). Furthermore, the vignette method does not allow us to examine the actual child protection decision, but only the perceptions of a hypothetical situation. We do not know how social workers would evaluate a similar but real-life case and what decision they would make (Taylor, 2006). For these reasons, our vignette-based study can only contribute to the overrepresentation debate in a limited and indirect way. In the case of Roma, however, there are no official data to directly investigate ethnic bias in child protection decision-making. In most countries, laws prohibit the processing of data concerning ethnic origin, or allow it only in specific instances. As a result, data on the ethnicity of children targeted by child protection decisions are lacking or collected informally, often without a transparent methodology (ERRC, 2011a). The lack of data not only makes it difficult to carry out quantitative research, but also hinders the development of effective policies to reduce the vulnerability of Roma children.

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CRediT authorship contribution statement

Marianna Kopasz: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. **Tamás Bartus:** Methodology, Formal analysis, Visualization, Writing – original draft, Writing – review & editing. **Ildikó Husz:** Conceptualization, Methodology, Writing – original draft, Writing – review & editing, Funding aquisition.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Data will be made available on request.

Appendix

Table A1
Means and distribution of perceived level of risk across social workers' characteristics.

	Means	% of		
		no risk + low risk	moderate risk	high + very high risk
Age				
<30	3.5	14.5	31.7	53.8
30–39	3.5	9.8	38.9	51.3
40–49	3.7	6.6	28.9	64.5
50 or older	3.6	8.8	32.3	59.0
R is male				
female	3.6	9.4	32.7	57.9
male	3.5	9.2	39.2	51.7
Social work or related degree				
no	3.7	9.0	28.9	62.1
yes	3.6	9.6	36.1	54.2
Experience				
0 years	3.7	10.3	30.2	59.5
1–5 years	3.6	10.8	35.3	53.9
6–10 years	3.6	8.0	35.8	56.1
11–15 years	3.6	6.7	35.1	58.2
16- years	3.6	10.3	31.2	58.5
Childhood experience of hardship				
no	3.6	11.6	31.5	56.9
yes	3.7	6.0	36.1	57.9
Work overload				
no	3.7	8.9	32.0	59.0
yes	3.6	9.7	34.3	56.0

Note: sample size = 1152.

Table A2
Fixed-effects ordered logistic regressions of the perceived level of risk

Variables	Model 1		Model 2	
Roma parents	−0.0905	(0.396)	−0.7647	(0.901)
Harm to child: neglect	0		0	
Harm to child: emotional harm	−0.0750	(0.287)	0.2877	(0.844)
Harm to child: physical harm	0.6201*	(2.065)	1.1195**	(2.875)
Stepfather's alcoholism	0.8024***	(3.319)	0.7651*	(2.448)
Mother's willingness to cooperate	−0.8122***	(3.554)	−1.1608***	(4.241)
Messy living environment	0.4411	(1.955)	0.1915	(0.645)
Poor housing conditions	0.1953	(0.746)	0.1275	(0.356)
Mother's higher education	−0.2958	(0.925)	−0.4574	(1.208)
Parental employment	0.3890	(1.284)	0.1531	(0.386)
Harm to child: emotional harm X Roma parents			−0.9452	(1.751)
Harm to child: physical harm X Roma parents			−1.3355*	(2.426)
Roma parents X Stepfather's alcoholism			0.3469	(0.659)
Roma parents X Mother's willingness to cooperate			1.1334*	(2.260)
Roma parents X Messy living environment			0.5870	(1.146)
Roma parents X Poor housing conditions			0.2883	(0.560)
Roma parents X Mother's education				
Roma parents X Parental employment			0.8878	(1.221)
Constant				
N of observations	516		516	
N of individuals	258		258	

Notes: Numbers in parentheses are *t* statistics. *=$p < 0.05$, **=$p < 0.01$,***=$p < 0.001$.

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