

Life Expectancy of Roma and Travellers in Europe: Indirect Estimations for 17 Countries

1. Introduction

Several studies suggest that the population of Roma and Travellers in Europe is severely disadvantaged in health compared to the non-Roma population and face a range of barriers in accessing health care (e.g., Bogdanović et al. 2007; de Graaf et al. 2016; La Parra-Casado, Arza-Porrás and Estévez 2020; Parekh and Rose 2011). With regard to the mortality of the Roma population, a large part of the reported numbers is based on very crude indicators, such as the longevity rate (the proportion aged 75 and older), the overall death rate (total number of deaths divided by the total living population), or the average age at death. All these indicators are strongly affected by the age structure of the population. This complicates a comparison between the Roma community and the non-Roma population because the former is significantly younger than the latter (see, e.g., Hablicsek 2008).

An indicator that eliminates the effect of the age structure in comparisons is “life expectancy” (LE). Unfortunately, estimates of LE for the Roma population are rare. The most widely cited and generally accepted data stems from the Council of Europe and suggests the LE of Roma to be 10-15 years lower than that of the general population (European Commission 2014, p. 38). Estimates exist also for some national subpopulations of Roma and Travellers which suggest a huge variation regarding the extent of their disadvantage in LE, ranging from two to twenty years (European Public Health Alliance 2018). However, all these reports about levels and trends of Roma and Travellers’ LE are substantially limited in the comprehensiveness and quality of the available European or nationwide data on the Roma population (European Public Health Alliance 2018).

As a consequence of this “disjointed and ad hoc” information on LE and mortality for the Roma community within Europe (European Public Health Alliance 2018, p. II) it is not clear whether its disadvantage in life years is actually that high. The aim of the present work is therefore to provide additional estimates derived by a different approach and for subpopulations of Roma and Travellers. For this purpose, the European Union Agency for Fundamental Rights (FRA) included particular questions to the 2019 Roma and Travellers Survey (RTS 2019) which allow the application of the indirect “Orphanhood Method” (OM). The RTS 2019 was conducted in six European countries. Data for eleven more countries will be available soon together with the additional possibility to apply also the “Own Child Method” (OCM), as described at the end of this extended abstract.

2. Data and methods of the previous study with the RTS 2019 data

The estimation of adult mortality from information on parents' survival with the OM is the dominating tool for the indirect estimation of adult mortality levels in developing countries with a lack of existing population statistics (see Bradshaw and Timæus 2006; United Nations 2006). The basic idea of the OM is that the age of respondents represents the survival time of the mother (or father). Consequently, the proportion of respondents of a given age whose mother (or father) is still alive approximates a survivorship ratio from an average age at childbearing to that age plus the age of the respondents. The OM converts the proportions of those with a surviving parent into life table survivorship probabilities for pre-defined adult ages by controlling for the prevailing pattern of childbearing (methodological descriptions can be found, e.g., in Hill 2006; Hill, Choi and Timæus 2005; Hill, Zlotnik and Trussell 1983; Moultrie et al. 2013; Preston, Heuveline and Guillot 2001; Timæus 1991). These survivorship probabilities are then used to derive a complete survival function for estimating LE without having a set of age-specific death rates on which the standard life tables are based. We used the Modified Orphanhood Method approach (MOM) developed by Luy (2009) to estimate LE of Roma and Travellers because of its empirical basis of transformation parameters and its proven functionality according to a comparison of MOM estimates with data from life tables for the total Italian population (Luy 2012). Moreover, the MOM tools include also parameters for estimating the age at childbirth of all parents from information on still living parents (as available in the RTS 2019) and for the estimation of reference periods on the basis of the mentioned empirical data. The MOM was developed to provide estimates for LE at age 30.

A detailed description of the methods and results of the analysis of the RTS 2019 data can be found in Luy (2021). In short, the RTS 2019 provides information on 4,658 individuals aged 16 or older (2,564 women and 2,094 men). The survey was conducted in six European countries: Belgium, France, Ireland, the Netherlands, Sweden and the United Kingdom. The number of respondents of these national subsamples ranges from 404 in Sweden to 1,544 in France.¹ To apply the MOM the sample had to be restricted to the ages 20-64 what reduced the sample to 3,701 respondents. The suitability of the data for applying the MOM was tested by descriptive analysis of the central information from the survey, i.e., the reported proportions of mothers and fathers alive and the ages of respondents' parents at the time of respondents' birth. The latter were estimated from the average ages of respondents by five-year age groups and the reported average ages of still living parents by subtracting the former from the latter. The reported data in the RTS 2019 turned out to be a reliable basis for applying the MOM for most of the subsamples and

¹ For Belgium and the Netherlands, the RTS 2019 included a further subdivision of the samples into two smaller subgroups of Roma and Travellers. The corresponding case numbers are 482 for the Belgium subsample of Roma, 124 for the Belgium subsample of Caravan Dwellers, 201 for the Dutch subsample of Roma, and 511 for the Dutch subsample of Travellers and Sinti.

most age groups. Moreover, the completeness of the data was very high, being 98.9 percent for mothers and 98.2 percent for fathers. The proportions of respondents stating the actual age of their still living parents was also relatively high for mothers (95.5 percent), but somewhat lower for fathers (83.6 percent). All analyses were based on cases with valid information only.

The estimation of LE for Roma and Travellers on the basis of information on the survival of respondents' parents required the following analytical steps:

1. Estimation of the average age at childbirth of all respondents' parents (M_n^*) based on the available information for still living parents only for each age group n of respondents, with $n=20$ for age group 20-24, $n=25$ for age group 25-29, ..., and $n=60$ for age group 60-64;
2. Estimation of respondents' mothers and fathers' survival probability from age 30 to $33+n$ (l_{33+n}/l_{30}) for each age group of respondents with the MOM;
3. Estimation of the reference periods for the survival probabilities from step 2, i.e., the calendar year to which these survival probabilities refer;
4. Derivation of complete life tables from age 30 for Roma and Travellers with the logit life table model on the basis of (i) the survival probabilities from step 2, (ii) the reference periods from step 3, and (iii) corresponding reference life tables for the total reference population;
5. Calculation of LE at age 30 (e_{30}) for respondents' fathers and mothers for each life table derived in step 4;
6. Adjustment of estimates from step 5 for respondents' parents to estimate LE at age 30 for all women and men (i.e., not only for parents);
7. Estimation of the time trends in LE at age 30 for women and men with extrapolation to the most recent period;
8. Estimation of LE at birth for women and men based on the relative difference in LE at age 30 between Roma and Travellers and the corresponding reference population.

3. Results of the previous study with the RTS 2019 data

Table 1 gives the estimated LE at age 30 in 2016—i.e., the most recent year for which estimations were possible—separated by sex, for each of the national subsamples in comparison to the corresponding total populations. Among the female populations of Roma and Travellers, the estimated LE at age 30 ranges between 45.4 and 48.8 years, and among men between 49.6 and 51.3 years. All these values lie distinctly below of those for the corresponding total populations. The disadvantages of Roma and Travellers in LE at age 30 vary from 4.6 years for female Gypsies and Travellers in the UK to 8.9 years for male Roma and Caravan Dwellers in Belgium. Because the sum of the national samples differs from the total sample of the RTS 2019, we derived estimates for the total of countries which are consistent to the country-specific estimates by averaging the national LE values for the reference populations as well as

for Roma and Travellers, both weighted by the proportions of the national subsamples of Roma and Travellers in the RTS 2019 on the basis of valid cases for information on survival status of parents (labelled as “EU-6”). The differences in LE at age 30 between the reference populations and Roma and Travellers for all EU-6 countries combined are 6.3 years among women and 6.5 years among men.

Table 2 summarizes the corresponding estimates of LE at birth in 2016. For the female national subpopulations of Roma and Travellers, the estimates for 2016 range between 70.1 and 75.7 years, and for the male national subpopulations of Roma and Travellers between 64.6 and 69.0 years. The differences to the total national populations are between 7.1 years for female Gypsies and Travellers in the UK and 14.2 years for male Roma and Caravan Dwellers in Belgium. The differences in weighted averages are 9.8 years among women 10.3 years among men for all EU-6 countries.

4. Conclusions so far and extension of the project

The estimated gaps in LE between Roma and Travellers and the general populations correspond to the existing estimates for earlier years, thus confirming the existence of an extraordinary disadvantage of Roma and Travellers in the total number of life years. According to our estimates, the extent of Roma’s and Travellers’ disadvantage varies between countries. For 2016, the estimated differences in LE at birth to the total national populations vary between 7.1 years for female Gypsies and Travellers in the United Kingdom and 14.2 years for male Roma and Caravan Dwellers in Belgium. These results are also consistent with previous reports which suggest smaller differences in LE between Roma and Travellers and the total national population in the United Kingdom compared to other European countries.

Naturally, results obtained with indirect estimation techniques like the OM must be interpreted with caution. Indirect methods always entail several drawbacks and must be seen primarily as an alternative to having no information (see, e.g., Luy 2012; Timæus 1991). They cannot be—and they are not supposed to be—an alternative to estimates based on vital registration data or census data linked to subsequent deaths with high matching rates. The most apt formulation of indirect techniques’ characteristics and the potentials they offer can be found in Hill (2006, p. 631): “Indirect estimation procedures [...] remain important as ways of producing estimates for small population subgroups and for tracking trends. [...] Purists sometimes find this indirectness distressing, whereas pragmatists accept what they can get.” With regard to the estimation of LE of Roma and Travellers we conclude that the indirect estimation approach can be applied successfully and provides meaningful results. Therefore, the use of indirect methods helps to fill an important knowledge gap regarding the health of Roma and Travellers.

In order to extend the number of countries of this project FRA included the questions required for applying the MOM also to the “Roma Survey 2020” (RS 2020), covering Czech Republic, Greece, Spain,

Croatia, Hungary, Italy, Portugal, Romania, North Macedonia, Serbia and Slovakia. Moreover, to improve the estimates, the RS 2020 includes additional questions to estimate child mortality with the OCM (Brass 1975). This will be a considerable improvement because LE at birth can then be estimated by combining levels of child and adult mortality. The data of the RS 2020 is supposed to be available by the end of 2021 and the new results will be combined with the previous results from the RTS 2019 data which are summarized in this abstract. In sum, I expect to have estimates on Roma's and Travellers' LE for 17 countries to be presented at EPC 2022, together with important sensitivity checks due to the additional availability of estimates for child mortality.

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Table 1: Life expectancy at age 30 of Roma and Travellers in Belgium (BE), France (FR), Ireland (IE), the Netherlands (NL), Sweden (SE) and the United Kingdom (UK) in comparison to the national general populations, 2016

	Roma/Travellers		General population		Difference	
	Women	Men	Women	Men	Women	Men
BE Roma & Caravan Dwellers	45.4	40.7	54.1	49.6	8.7	8.9
FR Travellers	48.7	45.2	55.8	50.2	7.1	5.0
IE Travellers	48.6	45.1	53.9	50.4	5.3	5.3
NL Travellers and Sinti	48.3	42.7	53.6	50.6	5.3	7.9
SE Roma and Travellers	48.0	43.9	54.5	51.3	6.5	7.4
UK Gypsies and Travellers	48.8	43.5	53.4	50.0	4.6	6.5
EU-6 Average (weighted)	48.2	43.8	54.5	50.3	6.3	6.5

Source: own calculations with data of the 2019 Roma and Travellers Survey and the Human Mortality Database (2020); Note: estimates for life expectancy of Roma and Travellers derived from trend estimate for e_{30}^* ; averages for EU-6 and EU-5 weighted by sample sizes of Roma and Travellers

Table 2: Life expectancy at birth of Roma and Travellers in Belgium (BE), France (FR), Ireland (IE), the Netherlands (NL), Sweden (SE) and the United Kingdom (UK) in comparison to the national general populations, 2016

	Roma/Travellers		General population		Difference	
	Women	Men	Women	Men	Women	Men
BE Roma & Caravan Dwellers	70.1	64.6	83.7	78.8	13.6	14.2
FR Travellers	74.4	71.4	85.3	79.3	10.9	7.9
IE Travellers	75.2	71.3	83.4	79.7	8.2	8.4
NL Travellers and Sinti	74.8	67.4	83.1	79.9	8.3	12.5
SE Roma and Travellers	74.0	69.0	84.1	80.6	10.1	11.6
UK Gypsies and Travellers	75.7	68.9	82.8	79.2	7.1	10.3
EU-6 Average (weighted)	74.2	69.2	84.0	79.5	9.8	10.3

Source: own calculations with data of the 2019 Roma and Travellers Survey and the Human Mortality Database (2020); Note: estimates for life expectancy of Roma and Travellers derived from trend estimate for e_{30}^* ; averages for EU-6 and EU-5 weighted by sample sizes of Roma and Travellers