

**SUICIDE MORTALITY AND POLITICAL TRANSITION:
RUSSIANS IN ESTONIA COMPARED TO THE ESTONIANS
IN ESTONIA AND TO THE POPULATION OF RUSSIA**

**Airi Värnik^{1,2,3}, Kairi Kõlves^{1,3}, Merike Sisask¹, Algi Samm¹ and
Danuta Wasserman²**

*¹Estonian-Swedish Institute of Mental Health and Suicidology, Estonian Centre
of Behavioural and Health Sciences*

*²Swedish National Centre for Suicide Research and Prevention,
Karolinska Institute, Stockholm*

³University of Tartu

Abstract. *Design.* Age-adjusted suicide rates were compared for Russians in Estonia, Estonians in Estonia and inhabitants of Russia in radically changed socio-political situations (before and after the dissolution of the USSR). *Results.* High, but still lower suicide rates for Russians in Estonia were observed in comparison with Estonians during the study period (1983–1990) when Estonia was a part of the Soviet Union ($t = 2.22$, $p = 0.061$). During the transition period (1991–1998), after the dissolution of the USSR, when Estonia became independent, a sharp increase in suicide rates was observed for all three populations. However, the Estonian Russians, whose privileged status before 1991 changed during the Estonian independence into that of immigrants, causing stress and demanding high adaptation capacities, had significantly higher suicide mortality rate compared with Estonians ($t = -3.99$, $p = 0.005$) as well as in comparison with the population of Russia ($t = -2.67$, $p = 0.032$). *Conclusions.* Migration in terms of change of the geographical location solely seems not to be sufficient determinant provoking suicides until their needs were met with greater attention compared to the local population. For the Russian minority in Estonia suicidality appeared to be provoked by the sharp socio-political change that turned Russians from privileged status to immigrant status. By the end of the transition period the suicide curves for all three studied populations converged which can be interpreted as an indicator of the stabilisation in the society.

Keywords: suicide, Russian minority, Estonia, Russia, transition, perestroika

1. Introduction

The radical social and political changes, which accompanied the dissolution of the Soviet Union, have turned Eastern Europe into an area of 'natural experiment' for numerous researchers inviting to assess the impact of environmental factors on human behaviour and public health.

The social aspect of suicide mortality has been convincingly demonstrated in the trends of suicide rates in the 'Eastern Bloc' of Europe (Lester 1998, Mäkinen 2000, Sartorius 1995) and particularly in the former Soviet Union and its republics (Ambrumova and Postovalova 1991, Kõlves et al. 2006a and 2006b, Nemtsov 2003, Pridemore and Spivak 2003, Rancans et al. 2001, Tooding et al. 2004, Värnik 1997, Värnik et al. 2000, Wasserman et al. 1998;).

The S-shape trend of suicide mortality in the Baltic States during the societal transformation that started in the mid 1980s and continued in the 1990s seems to be quite unique (Värnik et al. 2000). The sharp fall in suicide rates, especially for the male population in all republics of the former Soviet Union during the first years of social and political transformation (perestroika 1985–1988/89), is explained by the stringent restrictions on alcohol sales and consumption, and by hopeful expectations for democratisation (Pridemore and Spivak 2003, Wasserman et al. 1998;).

The perestroika period was followed by a dramatic increase in suicide trends in the early 1990s when building up the new society. Decline in suicide rates since mid 1990s could be explained by the overall stabilization of society, the adaptation to ongoing reforms, the strengthening of statehood, and the development of healthcare (Värnik et al. 2001).

Diversity of hypotheses at assessing the causal relations stemming from societal transformation confirms the multifactorial character of the phenomenon and stimulates to find new aspects. One of the sensitive socio-political indicators that need to be analysed is suicidality among Russian minorities in the former republics of the USSR and satellites.

Migration has been reported as constituting an important suicide risk factor, being a type of life event that is associated with major stress before, during, and after its occurrence (Kliewer 1991). Suicide rates among immigrants are usually compared with those of the immigrants' countries of origin or with those of the native population. Most studies show that immigrants have a somewhat higher risk of suicide than that of their countries of origin, as well as in comparison to the native population (Burwill 1998, Ferrada-Noli et al. 1995, Hjern and Allebeck 2002, Trovato 1992).

Mäkinen and Wasserman (2003) have reported that suicide mortality among immigrant Finns in Sweden was even higher than in Finland, the country with one of the highest suicide rates in the world. The authors suggest that immigration may be seen as a stress factor *per se*, or the immigrant population may be regarded as a selected group, or the immigrants experience a disadvantageous social and cultural situation in the new country.

Immigration of Russians to Estonia started after the Second World War. The population of Estonia was ethnically rather homogenous until the Second World War (WWII). According to the population census before WWII (1934) Estonians constituted 88.1% of the total population. Russians were the biggest ethnic minority group with a share of 8.2% in the total population of Estonia (Table 1).

Table 1. Demographic development and population structure in Estonia by census in 1934, 1979, 1989 and 2000 in percentages.

Year	1934	1944*	1979	1989	2000
Estonians	88.1	95.0	64.7	61.5	67.9
Russians	8.2	2.0	27.9	30.3	25.6
Ukrainians	0	0	2.5	3.1	2.1
Byelorussians	0	0	1.6	1.8	1.3
Other	3.7	3.0	3.3	3.3	3.1
Total	100	100	100	100	100

*estimated

In the post-war period, due to the geopolitical change related to the incorporation of Estonia into the Soviet Union, the Russian minority grew to approximately 30% in 1989 (Katus et al. 2000). In 1993–1996 remigration of Russians, mainly of military forces, took place. In the 2000 census the Estonian population consisted of 67.9% Estonians, 25.6% Russians, and other nationalities (Statistical Office of Estonia 2001).

Among the difficulties Estonia and other post-soviet countries met after restoring independence and moving to transition period, were the problems concerning the big group of Russian-speaking Slav immigrants. The present study is continuation and enlargement of the previous investigation (Värnik et al. 2005).

Aim of the study. In this paper the suicide rates of Russians in Estonia are compared with those of Estonians in Estonia and with inhabitants of Russia during two socio-politically different time-periods. The purpose is to study how the stress caused by transition was mirrored in suicide mortality, particularly among Russian minority, whose status in Estonia changed after Estonian independence from privileged to non-privileged minority.

2. Methods

Subjects. The subjects of the study consisted of three suicide populations (code E950-E959 by the World Health Organisation International Classification of Diseases): Russians in Estonia, Estonians in Estonia and the population of Russian Federation. The nationality of suicidents was specified on the death certificates. Russians, Ukrainians and Byelorussians, having the same cultural and linguistic

background, and other nationalities, who constituted only 3% of the total population of Estonia, were termed “Russians” in the study. Population structure is presented in Table 1 (Statistical Office of Estonia 2001). In the Russian Federation 82.6% of inhabitants are Russians, the major minorities of the remaining 17.4 % of population were Tatars (20% of non-Russians) followed by Ukrainians (10% of non-Russians) and others (Statistical Committee of NIS 1992). The database has been constituted according to the data from the WHO reports for the Russian Federation concerning age-adjusted death rates (SDR) of suicides. Data on the population in Estonia were derived from the Statistical Office of Estonia for the years 1983–1998, SDR of suicides were calculated.

Study periods. Two periods have been chosen for the study, corresponding to different socio-political conditions. The first period, 1983–1990 includes the last eight years of the existence of the USSR, Estonia being one of the republics. In the second period, 1991–1998, Estonia was an independent country, in the process of transition.

Statistical analysis. SDR of suicides were calculated using direct standardisation and European standard population. The average age-adjusted suicide rate was calculated for each study period. The standard deviation was used to show the distribution of the rates. Paired samples t-tests were used to show the differences between the studied groups in different time-periods.

3. Results

Means of SDR of suicide for total (male and female) were high and relatively close for the three populations during the period 1983–1990, when Estonia was a part of the Soviet Union. However, lower rates were observed among Russians in Estonia compared with Estonians (Table 2). The SDR of suicide among Estonians and the population of Russia were similar.

In the period 1991–1998, when Estonia became independent, the highest SDR of suicide for the period was observed among Russians in Estonia and the lowest among Estonians. The change in percentages in comparison with first period was 39.3% for Russians in Estonia, 25.8% for Russia and 17.1% for Estonians (Table 2).

Suicide rates for all three populations have increased sharply from 1991 and have the same transposed U-shape pattern (Figure 1). SDR of suicide for Estonians and in Russia reached their maximum level in 1994, while for Russians in Estonia the highest values of SDR were observed between the years 1993–1996. The suicide curve of Russians in Russia was in the middle of the curves of Russians in Estonia and Estonians. The three curves converge by the end of the period.

Table 2. Mean SDR of suicide per 100 000 in different time-periods for Estonia and Russia.

	Inhabitants of Estonia		Inhabitants of Russia
	Estonians	Russians	
Total			
Mean of 1983–1990	29.2	27.8	29.0
Mean of 1991–1998	34.2	38.7	36.5
Increase in %	17.1	39.3	25.8
SD* during 1983–1998	4.6	7.3	6.5
Males			
Mean of 1983–1990	49.8	44.8	51.8
Mean of 1991–1998	61.2	72.1	66.9
Increase in %	22.7	61.0	29.1
SD* during 1983–1998	9.9	18.7	13.2
Females			
Mean of 1983–1990	12.2	13.3	11.3
Mean of 1991–1998	11.6	14.7	11.5
Increase in %	-5.5	11.1	1.5
SD* during 1983–1998	1.5	2.5	1.1

*standard deviation

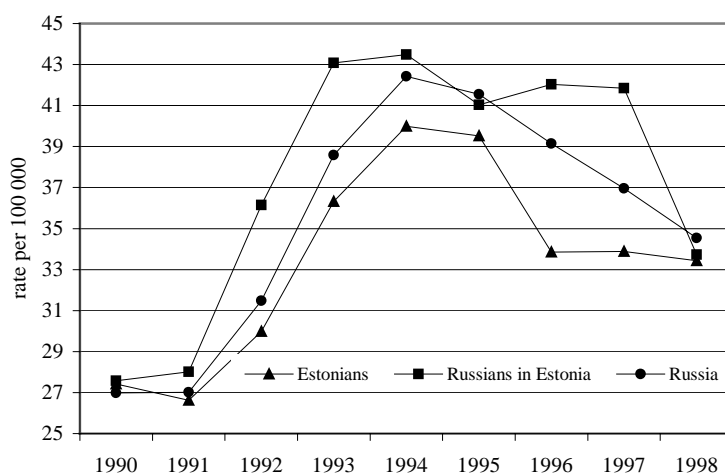


Figure 1. SDR of suicide for Russia, Russians in Estonia and Estonians per 100 000 inhabitants during the period of transition (1990–1998).

In the first period lower SDR were observed among Russians in Estonia compared to Estonians (Table 3). However, compared to both Russians in Russia and Estonians, Russians in Estonia experienced a significantly higher suicide mortality rate in the second period.

Table 3. Paired samples t-tests by population in different periods.

Paired Samples Test	Mean difference	95% CI of the difference		t-test	Sig. (2-tailed)
period 1983–1990					
Estonians in Estonia – Russians in Estonia	1.44	–0.09	2.98	2.22	0.061
Russians in Russia – Russians in Estonia	1.22	–0.49	2.94	1.69	0.135
Russians in Russia – Estonians in Estonia	–0.22	–2.91	2.48	–0.19	0.853
period 1991–1998					
Estonians in Estonia – Russians in Estonia	–4.48	–7.14	–1.82	–3.99	0.005
Russians in Russia – Russians in Estonia	–2.22	–4.18	–0.25	–2.67	0.032
Russians in Russia – Estonians in Estonia	2.26	1.03	3.50	4.33	0.003

The shape of the curves is strongly influenced by male suicides, constituting almost 80% of total number of suicides between 1983–1998 in all three populations.

The male SDR of suicide for the two different time periods of the study increased remarkably among all studied populations during the second period. The increase for Russian males in Estonia from the first to the second period was the greatest (61.0%) and the smallest was for Estonian males (22.7%) (Table 2).

The largest distribution of SDR of male suicide was observed among Russians in Estonia (SD = 7.3), followed by inhabitants of Russia (SD = 6.5) and by Estonians (SD = 4.6) during 1983–1998.

The female SDR of suicide were more stable and lower compared to that of males. Mean SDR of suicide had the greatest increase for Russian females' in Estonia (11.1%), followed by females in Russia (1.5%); Estonian females saw a decrease by 5.5% from the first to the second period. For females in Russia the standard deviation was the lowest during the whole study period. The suicide rates of Russian females' in Estonia had the broadest distribution; Estonian females were in between (Table 2)

4. Discussion

The procedure of reporting and registering of violent deaths was uniform all over the former Soviet Union and remained the same in the Russian Federation of the Commonwealth of Independent States and also in the independent Estonian Republic. The statistics regarding suicides in the former USSR, as well as other external causes of death, are considered to be valid and reliable (Shkolnikov et al. 2001, Värnik et al. 2001, Wasserman et al. 1998).

A methodological limitation in the present study is due to the small number of deceased per year for Russians in Estonia and Estonians, but still there were 2939 Russian and 4809 Estonian suicides for total study period (1983–1998).

During the first study period, when Estonia was a part of the former USSR, Estonians as inhabitants of the occupied country seem to have been the most

vulnerable group of that period, with the highest suicide rates in comparison with the two other studied populations. Russians in Estonia had lower suicide rates in comparison with the inhabitants of Russia and native Estonians. These findings do not correspond to other studies, which have shown that immigrants usually have higher suicide rates compared to their countries of origin and host countries (Hjern and Allebeck 2002, Kliewer 1991, Mäkinen and Wasserman 2003, Raleigh and Balarajan 1992, Sainsbury and Barraclough 1968, Trovato 1992). This might have been due to the Russians' privileged status in Estonia.

During the Soviet era the massive Russian long-term immigration to the Baltic republics after the Second World War, particularly to Estonia, was state-facilitated. Russian immigrants had privileges in salaries and housing and the authorities made them believe that they brought along culture and welfare to the Baltic people. Russian immigrants in Estonia did not meet negative conditions, which are usual for immigrants in foreign countries. Their requirements and necessities were considered to be of more importance than the local population in Estonia and in Russia. Massive Russians' long-term immigration to Baltic republics was state-facilitated. According to soviet national policy Russians were called on to take a position of 'big brother'. The lower suicide rate among this group could be a reflection of this phenomenon.

In the mid-eighties during the Michael Gorbachev reforms, the iron curtain weakened and aspiration for democratic development was spreading, along with the policy concerning the leading role of the Communist Party and Russians.

The situation changed after re-establishing independence in the Baltic states, including Estonia in 1991. The radical socio-political reforms carried out thanks to perestroika, caused changes in the status of the Russian minority in Estonia.

Estonian Russians' status changed from rulers to immigrants. Release of the Molotov-Ribbendrop pact dividing Europe into spheres of influence was a shock for many Russians. They had to adapt to the rules of Estonia as an independent country, and being equals with the local population, in addition study the Estonian language to some degree as a state language and apply for citizenship. The loss of employment because of the evacuation of the Soviet Army and the closure of the SU military factories on the territory of Estonia during 1993–1994 could also be one of the stressors.

The loss of ideals and rulers' status, and the demand for integration and acculturation, many years after immigration, could cause stress-reaction for Russians in Estonia, which could be compared to the post-traumatic stress disorder and might have reflected in their higher suicide rates, compared with the lower suicide rates during the existence of the former USSR. Acculturation stress is pointed out as an important risk factor for depression and suicide among immigrants (Hovey 2000).

Convergence of the curves of Russian and Estonian suicides in Estonia to 1998, reaching average suicide rates of the last decades – 33 per 100 000 inhabitants, could be interpreted as adaptation to changes and integration of Russians who had chosen to stay in Estonia.

5. Conclusion

The differences in mean values of suicide rates for three populations of the study in two politically different periods – before and after the dissolution of the USSR - could be interpreted in terms of adaptation. The higher suicide rates for Russian immigrants in Estonia in comparison with those of Estonians in Estonia and Russians in Russia occurred only after re-establishing independence of Estonia, probably causing their stronger adaptation shock due to the loss of their previous privileged status, ideals and expectations.

Migration in terms of change of the geographical location does not seem to be a sufficient determinant provoking suicides until the migrants' needs were met with greater attention compared to the local population.

Identification of suicide risk groups gives valuable information for governments and their agencies to estimate the situation of different social groups in society. By the year 1998 suicide rates of three populations studied converged that could be interpreted as a sign of stabilisation in the society.

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Address:

Airi Värnik
Vabaduse pst. 90
11619 Tallinn
Estonia
Tel.: +372 6506 188
E-mail: airiv@online.ee, airi.varnik@ipm.ki.se

References

- Ambrumova, A. G. and Postovalova, L. I. (1991) “Sotsialnye i kliniko-psikhologicheskiye aspekty samoubiystv v sovremennom obshestve” [Social and clinical-psychological aspects of suicide

- in contemporary society.], In: *Obrozreniye psikiatrii i med. psichologii [Studies in psychiatry and medical psychology.]* Bekhtereva V. M., ed. 26–38, Moscow: Moscow:skij Institut Psihiatrii.
- Burwill, P. W. (1998) “Migrant suicide rates in Australia and in country of birth”. *Psychological Medicine* 28, 201–208.
- Ferrada-Noli, M., Asberg, M., Ormstad, K. and Nordström, P. (1995) “Definite and undetermined forensic diagnoses of suicide among immigrants in Sweden”. *Acta Psychiatrica Scandinavica* 91, 130–135.
- Hjern, A. and Allebeck, P. (2002) “Suicide in first- and second-generation immigrants in Sweden: a comparative study”. *Social Psychiatry and Psychiatric Epidemiology* 37, 423–429.
- Hovey, J. D. (2000) “Acculturative stress, depression, and suicidal ideation among Central American immigrants”. *Suicide and Life-Threatening Behavior* 30, 125–139.
- Katus, K., Puur, A. and Sakkeus, L. (2000) “Development of National Minorities in Estonia”. In *The demographic characteristics of national minorities in certain European states*, vol. 2, 29–92. Haug, W., Courbage, Y., Compton, P., eds. Strasbourg: Council of Europe.
- Kliwer, E. V. (1991) “Immigrant suicide in Australia, Canada, England and Wales, and the United States”. *Journal of Australian Population Association* 8, 111–127.
- Kõlves, K., Värnik, A., Tooding, L.-M. and Wasserman, D. (2006a) “The role of alcohol in suicide: a case-control psychological autopsy study”. *Psychological Medicine* 36, 923–930.
- Kõlves, K., Värnik, A., Schneider, B., Fritze, J. and Allik, J. (2006b) “Recent life events and suicide: a case-control study in Tallinn and Frankfurt”. *Social Science and Medicine* 62, 2887–2886.
- Lester, D. (1998) “Suicide and homicide after the fall of communist regimes”. *European Psychiatry* 13, 98–100.
- Mäkinen, I. H. (2000) “Eastern European transition and suicide mortality”. *Social Science and Medicine* 51, 1405–1420.
- Mäkinen, I. H. and Wasserman, D. (2003) “Suicide Mortality among Immigrant Finnish Swedes”. *Archives of Suicide Research* 7, 93–106.
- Nemtsov, A. (2003). “Suicides and alcohol consumption in Russia, 1965–1999”. *Drug & Alcohol Dependence* 71, 2, 161–8.
- Pridemore, W. A. and Spivak, A. L. (2003) “Patterns of suicide mortality in Russia”. *Suicide and Life-Threatening Behavior* 33, 2, 132–150.
- Raleigh, V. S. and Balarajan, R. (1992) “Suicide levels and trends among immigrants in England and Wales”. *Health Trends* 24, 91–94.
- Rancans, E., Salander Renberg, E. and Jacobsson, L. (2001) “Major demographic, social and economic factors associated to suicide rates in Latvia 1980–1998”. *Acta Psychiatrica Scandinavica* 103, 275–281.
- Sainsbury, P. and Barraclough, B. (1968) “Differences between suicide rates”. *Nature* 220, 1252.
- Sartorius, N. (1995) “Recent changes in suicide rates in selected Eastern European and other European countries”. *International Psychogeriatrics* 7, 301–308.
- Shkolnikov, V., Mckee, M. and Leon, D. A. (2001) “Changes in life expectancy in Russia in the mid-1990s”. *Lancet* 357, 917–921.
- Statistical Committee of NIS (1992) *Demografitseskij jezhjegodnik 1991*. [Demographic yearbook 1991.] Moscow: Statkomitet SNG.
- Statistical Office of Estonia (2001) *Population and housing census 2000 II: citizenship, nationality, mother tongue and command of foreign languages*. Tallinn: ESA.
- Tooding, L.-M., Värnik, A. and Wasserman, D. (2004) “Gender and age-specific dynamics of suicides in the Baltic states during the transition period”. *Trames* 8, 299–308.
- Trovato, F. (1992) “Violent and accidental mortality among four immigrant groups in Canada, 1970–72”. *Social Biology* 39, 82–101.
- Värnik, A., Tooding, L.-M., Palo, E. and Wasserman, D. (2000) “Suicide trends in the Baltic states, 1970–1997”. *Trames* 4, 79–90.
- Värnik, A. (1997) “Suicide in the Baltic countries and in the former republics of the USSR”. Doctoral dissertation. Stockholm.

- Värnik, A., Wasserman, D., Palo, E. and Tooding, L.-M. (2001) "Registration of external causes of death in the Baltic states 1970–1997". *European Journal of Public Health* 11, 84–88.
- Värnik, A., Kõlves, K. and Wasserman, D. (2005) "Suicide among Russians in Estonia: database study before and after independence." *British Medical Journal* 330, 176–177.
- Wasserman, D., Värnik, A., Dankowicz, M. and Eklund, G. (1998) "Suicide preventive effects of *perestroika* in the former USSR: the role of alcohol restriction". *Acta Psychiatrica Scandinavica* 98, Suppl. 394, 1–44.