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**SELF-REPORTED HEALTH
AMONG IMMIGRANTS FROM
THE FORMER SOVIET UNION**

**QUANTITATIVE AND QUALITATIVE
STUDIES IN SWEDEN**

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ABSTRACT

Background Over a million people born in the Former Soviet Union (FSU) emigrated voluntarily or involuntarily after the empire's breakup in 1991. In Sweden, persons born in the FSU constitute the second largest group of asylum seekers and are continuously increasing in number. Since the health of persons in the countries of the FSU is generally poorer than in Sweden, immigrants from these countries may cause a change in service needs and/or health patterns in Sweden. To prevent or manage such a change, it is important to learn more about the health of this immigrant group.

Aims The general aim was to study self-reported health and its determinants in immigrants from the FSU in Sweden. *Study I:* to analyze (i) whether there is an association between being born in the FSU and other countries of the former Soviet Bloc and poor self-reported general health among immigrants in Sweden and (ii) whether this association persists after adjusting for demographic, socioeconomic, and migration-related variables. *Study II:* to study (i) whether self-reported mental health (defined as self-reported psychiatric illness and psychosomatic complaints) was poorer among persons born in the FSU and other countries of the former Soviet Bloc currently living in Sweden than among Swedish-born persons and (ii) whether the demographic, socioeconomic, and migration-related characteristics of respondents could explain this. *Study III:* (i) to explore the self-reported health of Russian-speaking immigrants from the FSU in Sweden and (ii) to describe the influence of the culture of origin and of acculturation into the host country on the self-reporting of health among these immigrants. The aim of *Study IV* was to explore the immigrants' own rating of the extent of their acculturation (self-reported integration) as a source of information in contrast to an external (researchers') measurement of acculturation.

Methods Both quantitative (*Studies I and II*) and qualitative (*Studies III and IV*) research approaches were used. *Studies I and II* were based on eight pooled, cross-sectional random samples of permanent Swedish residents (including immigrants with permanent residence permits or Swedish citizenship who arrived in Sweden after 1944) interviewed within the Swedish Annual Level of Living Survey. Unconditional multivariate logistic regression was employed to estimate the odds ratios of poor self-reported health (both general and mental) after the stepwise and simultaneous adjustment for demographic, socioeconomic and migration-related variables. *Study I* included men and women aged 25 to 84 (N = 36,084) born in Sweden (n = 35,711), Poland (n = 158), other East European countries (n = 161), or the FSU (n = 54) interviewed between 1993 and 2000. *Study II* included men and women (N = 35,844) aged 25 to 84, born in Sweden (n = 35,459), Poland (n = 161), other East European countries (n = 164), or the FSU (n = 60), interviewed between 1994 and 2001. *Studies III and IV* were based on the data collected in Stockholm and its suburbs in April-June 2005 by means of the semi-structured in-depth interviews. The study sample included 15 Russian-speaking immigrants from the FSU currently living in Sweden (5 men and 10 women), with varying marital and socioeconomic status, a mean age of 47.3 (25 - 70) years and a mean time spent in Sweden of 13.6 (3 - 36) years. The results were validated by means of mini-interviews by telephone with 15 new respondents. *Study III*

utilized the grounded theory approach to analyze the data. *Study IV* utilized the content analysis technique “Framework”.

Results *Studies I and II* showed that while immigrants from the FSU had higher odds of self-reporting poor general health than the Swedish-born host population, they did not have higher odds of reporting poor mental health. This was not true of immigrants from other countries of the former Soviet Bloc (Poland and other East European countries), who had higher odds of self-reporting both poor general health and poor mental health than the Swedish-born individuals. These findings remained after adjustment for demographic and socioeconomic variables. *Study III* showed that acculturation influenced the way Russian-speaking immigrants from the FSU communicated their health regardless of their “actual” health status. Their self-reported health (rated from “very good” to “poor”) was associated with their choice of response models for the general health question (*explicit, normalized, or implicit*). This choice was determined by the extent of their acculturation (Integrated, Assimilated, Separated, or Marginalized) and consequent preference for manner of communication (Swedish or Russian). This suggested that it is essential to account for acculturation in the studies of immigrant health. *Study IV* described an easy way to measure acculturation by applying a variable called “self-reported integration”, which might be regarded as a proxy for acculturation. The self-reported integration is determined by the response to the question: “In your opinion, have you become integrated in Sweden?” The findings showed that the answer to this question given by the immigrants corresponded with the researcher’s estimation of the immigrants’ extent of acculturation and possibly represented a respondent’s holistic view of his or her acculturation, based on self-evaluation of both internal and formal criteria of integration.

Conclusions In the present thesis we found that being born in the FSU was associated with poorer self-reported general health, but not self-reported mental health, than in the Swedish-born host population. This finding remained after adjustments for demographic and socioeconomic variables. However, it was found that acculturation influenced health communication among Russian-speaking immigrants from the FSU in Sweden. The more acculturated a respondent was, the more his/her response model to the general health question and his/her self-reported health corresponded to the ones traditional of the host country, but did not necessarily correspond to the “actual” state of the respondent’s health. This suggests that it is essential to account for acculturation in studies of immigrant health and calls for attention when designing studies and interventions targeted at this population group. Self-reported health is widely used in medical and related research practice nowadays and underestimating the influence of culture and acculturation on health communication might have negative consequences in the planning, implementation, and evaluation of health care services.

Self-reported integration might be an informative variable for measuring the extent of acculturation. This might have implications in immigrant research, but its use as a proxy for acculturation should be tested primarily in other settings and in a quantitative analysis.

Keywords: Immigrants, self-reported health, the Former Soviet Union, Russian, Sweden, acculturation, quantitative, qualitative

LIST OF PUBLICATIONS

- I. Yulia Sungurova, Sven-Erik Johansson, Jan Sundquist. **East–west health divide and east–west migration: Self-reported health of immigrants from Eastern Europe and the former Soviet Union in Sweden.** *Scandinavian Journal of Public Health*, 2006; 34: 217–221.
- II. Yulia Blomstedt, Sven-Erik Johansson, Jan Sundquist. **Mental health of immigrants from the former Soviet Bloc: a future problem for primary health care in the enlarged European Union? A cross-sectional study.** *BMC Public Health*, 2007, 7:27.
- III. Yulia Blomstedt, Ingrid Hylander, Jan Sundquist. **Self-Reported Health and Acculturation: A Grounded Theory of Health Communication.** Submitted for publication.
- IV. Yulia Blomstedt, Ingrid Hylander, Jan Sundquist. **Self-reported integration as a proxy for acculturation: A qualitative study.** *Nursing Research*, 2007; 56(1): 63-69.

The author's surname was changed from Sungurova to Blomstedt in 2006.

LIST OF ABBREVIATIONS

CI	Confidence interval
FSU	Former Soviet Union
GDR	German Democratic Republic
HR	Hazard ratio
ICD	International Classification of Diseases
OR	Odds ratio
SALLS	Swedish Annual Level of Living Survey
SES	Socioeconomic status
WHO	World Health Organization

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1. INTRODUCTION

1.1 MIGRATION TO SWEDEN

1.1.1 The Former Soviet Union

The Union of Soviet Socialist Republics, referred to here as the Former Soviet Union (FSU), was a constitutional communist state that existed from 1922 to 1991. From 1940 until its dissolution, it included 15 republics (presented here with their modern names): The Russian Federation, Estonia, Lithuania, Latvia, Belarus, Ukraine, Moldova, Georgia, Armenia, Azerbaijan, Tajikistan, Kazakhstan, Uzbekistan, Turkmenistan, and Kyrgyzstan.

A variety of reasons, including severe economic and social problems and the abolition of migration restrictions, triggered a massive migration within and across the borders of the FSU after its dissolution in 1991. Over a million Russians and other ethnic groups emigrated from the various FSU republics to other countries [1]. Sweden, at the crossroads between the two sides of the Iron Curtain, has become not only one of several transit countries, but also a place of residence for numerous immigrants from the FSU. According to the latest available data (2005-2006) from the Swedish Migration Board and Statistics Sweden, persons born in the FSU in Sweden constitute the second largest group of asylum seekers with over 2,500 applicants per year [2], amounting to nearly 40,000 registered immigrants [3], and are continuously increasing in number [3, 4].

1.1.2 The Soviet Bloc

Two years prior to the dissolution of the FSU, in 1989, the Soviet Bloc - an alliance of several nations in Eastern Europe headed by the FSU - dissolved as well.

By 1989 this alliance included the former German Democratic Republic (not discussed in this thesis), Hungary, Bulgaria, former Czechoslovakia, Romania, Poland, and the FSU and had a 34-year history of existence under the Warsaw Treaty of Friendship, Cooperation and Mutual Assistance (Warsaw Pact) signed on the 14th of May, 1955. The purpose of the Treaty was to formalize mutual assistance provisions among the member-states [5], but, in reality, it served as security insurance for the FSU. Relations in the unified bloc were not smooth, and the Soviet military invaded the subservient states to force them back into line when they tried to deviate from the Soviet-controlled Warsaw Pact [6]. This caused distinct ‘waves’ of migration to, among other countries, Sweden.

In 2005, there were about 118,000 immigrants from the former Soviet Bloc in Sweden. Table 1 illustrates the arrival patterns of these immigrants, which correspond to occurrences of major political events in these countries [7]. Many of the immigrants from Hungary and the former Czechoslovakia arrived before 1969, i.e. in response to, respectively, the revolution in 1956 and the so-called “Prague Spring” in 1968. The arrival of Poles in Sweden increased after the military coup in 1981 and continued with the

dissolution of the former Soviet Bloc and inclusion of Poland in the European Union. Emigration from the FSU was virtually impossible for inhabitants before the dissolution of the union, and the increase in the number of arrivals of immigrants to Sweden from the FSU started in 1991.

Table 1. Immigrants from the former Soviet Bloc in Sweden [3]

Country of birth	Total number of immigrants for the year indicated		Arrival of immigrants (number of persons per arrival period)**				
	1950*	2005	-1969	1970-79	1980-89	1990-99	2000-05
Hungary	2,030	13,600	4,991	2,580	2,912	1,524	1,139
Bulgaria	44	3,962	250	289	602	1,996	814
Former Czechoslovakia	3,548	7,766	2,871	1,459	1,279	957	944
Romania	531	12,748	385	611	4,998	4,540	2,129
Poland	7,832	40,203	2,928	9,002	14,814	9,225	9,599
The Former Soviet Union	37,997	39,603	3,881	1,006	1,712	10,741	15,607

* Mostly refugees of World War II, many of whom have repatriated to their countries of origin.

** Only the arrival of immigrants who still lived in Sweden in 2005 is shown (not the arrival of the total number of refugees and immigrants during these periods).

1.2 HEALTH

1.2.1 East-West health divide

Although it is incorrect to refer to all these independent countries as the members of the FSU or the former Soviet Bloc now, over 15 years after the collapse of both, these names were used in the present thesis. This was justified by the fact that the isolation from the West by half a century of war and communist rule, the Iron Curtain, and the forced inclusion in the Soviet Bloc with the compulsory creation of the Soviet-style regimes [8] have all had a profound influence on the economy, social sector, and health of the populations in these countries. Moreover, although diminishing, the consequences are still visible: the former Soviet Bloc countries are worse off economically and the health rates there are lower than in Western Europe [9]. The latter phenomenon has been named the East-West health divide and has manifested itself in lower life expectancy [9], and higher suicide rates [10] and all-cause mortality [11] in the former member-states of the Soviet Bloc than in Western Europe.

After the collapse of the regimes, further deterioration of the economic and social spheres and of the health of the population was noted in all former Soviet Bloc countries, but the changes were the most drastic in the FSU, and particularly in the Russian Federation

(referred to hereafter as Russia) [12, 13]. East European countries are now better off economically [13, 14], they have a higher life expectancy at birth [14] and a longer healthy life expectancy [15] than the majority of the FSU countries. This might be partly explained by the fact that Russia as well as some other FSU countries had no history of democracy, in contrast to many other countries of the former Soviet Bloc which did not become communist regimes until after 1945 [12]. Therefore, the collapse of the old system and the need to establish a new system was a more difficult task for the Russian population than for the populations of many other countries of the former Soviet Bloc [12].

1.2.2 Health of immigrants from the FSU: previous studies

It has been shown that “Russian men and women in their thirties report less than good health more than do Swedish men and women in their seventies” [12]. Noteworthy, the health of populations in some other former republics of the FSU is even poorer than in Russia [14, 16, 17]. Generally speaking, immigration from the countries with poorer health may cause a change in service needs and/or health patterns in the host societies [18] because the state of health, at least in early immigrants, naturally corresponds more to that of their country of birth than to that of the host country [19]. Consistently with this, previous studies from various Western countries show that immigrants from the FSU express a large number of health complaints [20], have poorer mental health [21-24], and overuse social and health services [25, 26] compared with the host population.

To prevent or manage a possible change in service needs which the FSU immigrants can cause in the host countries, it is important to learn about their health and its determinants. In this thesis the self-reported health of immigrants from the FSU in Sweden was explored. In Studies I and II, it was compared with the self-reported health of immigrants from the other countries of the former Soviet Bloc and the Swedish-born host population (reference). Study III explored the self-reported health of the Russian-speaking immigrants from the FSU.

1.3 SELF-REPORTED HEALTH

Self-reported general health is based on the answer to the general health question: “How do you feel in general: very good, good, in between good and poor (fair/average), poor, or very poor?” It is viewed as a subjective holistic evaluation of one’s condition [27]; yet, it can be either a spontaneous assessment of health (based on the actual state of health at any given point in time) or an enduring self-concept (based on the respondent’s behavioral intentions, personal health practices, and his or her self-concept) [28]. Self-reported health is known to predict mortality, morbidity, and other clinical outcomes [29, 30] and to be a reliable measurement [31, 32] tested in various settings and populations [33, 34]. It is a valid health status indicator which has been recommended by the World Health Organization (WHO) and the European Commission to be used in a population health monitoring undertaking [35-37]. It was the outcome in Study I and was explored in Study III.

Self-reported mental health, which was an outcome in Study II, was defined as two other

self-reported variables, namely, self-reported psychiatric illness and psychosomatic complaints. These variables will be presented in more detail in the Method section of this thesis.

1.3.1 Health determinants

A large body of studies has demonstrated the association between demographic, socioeconomic, and other characteristics and health. This section will present the description of particularly those health determinants which have been named in the studies of the health of persons born in the FSU (both inhabitants in and immigrants from the FSU living elsewhere). Some of these determinants were included in the analyses of Studies I and II of the present thesis.

1.3.1.1 Demographic and socioeconomic determinants

Sex [17, 18, 21, 38, 39] and *age* [18, 38, 40, 41] have often been cited as health determinants. Studies have also shown that family relations [17, 42], family support [43], and some family characteristics [44] affect health and, particularly, self-reported general health. *Marital status* is a somewhat weaker characteristic, as it does not account for the quality of the relationship or of the support given in the family. However, it has been shown to affect mental health among immigrants from the FSU [38, 45].

Another widely-discussed health determinant is social capital [46]. In Russia, and supposedly in other FSU countries [13], social capital takes the form of informal social networks, such as the family, relatives, and friends, rather than formal institutions [47]. Studies in the countries of the former Soviet Bloc and on immigrants from these countries show that the support received from friends [43, 46], emotional support in general [48], and social support [48-51] have a profound effect on health. Thus those without social networks are especially vulnerable [47]. Brown and Harris [52] underlined the importance of *social networks* for mental health, suggesting that coping with stressful events depends on whether a person has access to a social network as a protective factor.

Socioeconomic status (SES) and many of the characteristics related to it are well-known determinants of both self-reported general health [13, 17, 42, 53-59] and mental health [21]. Socioeconomic classification of the population in Sweden has long been based on *occupational status* [60]. Occupation is also known to be associated with the mental health of immigrants from the FSU [61]. *Housing tenure* (owning or renting one's living quarters) is another important SES characteristic for studying one's health. Residential areas with privately owned family homes are known to be occupied by people with good resources. The circulation of residents is less intensive in such areas and, consequently, there are more contacts between neighbors. "Such conditions give a freedom of action that is beneficial to health" [62].

Unhealthy lifestyles (alcohol consumption [63], cigarette smoking [64, 65], poor diet [66] or fatty food [65]) have been shown to affect health in the countries of the FSU in terms of mortality and morbidity [49, 66-68]. However, the association between health behavior and the self-reported general health is weak in the Baltic countries [69] and Russia [13] as they "clearly represent different dimensions of public health" [70]. Moreover, these

lifestyles may be caused by the stressful psychological environment and social circumstances [49, 66, 71].

1.3.1.2 Migration-related determinants

When studying immigrant health, one should also account for migration-related determinants.

Some examples of such determinants are length of time since immigration and mastery of the language of the host country. Greater mastery of language has been associated with better mental health in the FSU immigrants [41]. These determinants are usually used as proxies for the immigrants' acculturation into the host society.

Acculturation is a complex social, cultural, and psychological process of adapting to a different society [72]. It has been shown that poor acculturation causes psychological distress [21] and depression [41, 73] in immigrants from the FSU. However, the knowledge of the mechanisms behind the association between acculturation and health is limited. To understand the association between acculturation and health, one should be able to measure acculturation. Currently, there are two approaches to measuring the extent of acculturation, but neither one of them is optimal.

The unidimensional approach views acculturation as the simple continuous process of adaptation to a mainstream culture while relinquishing the attitudes, values, and behaviors of the original culture [74]. Studies that use migration-related variables as proxies for acculturation are said to use a unidimensional approach. Usually, the main assumption is that the longer time spent in the host country, the greater is the extent of the person's acculturation. Although this approach has the advantage of easy execution, it gives an often misleading rendering of the acculturation process [74]. For example, Ritsner & Ponizovsky have shown that the acculturation of immigrants and, particularly, the pathway of psychological distress connected with the process of acculturation is not linear or U-shaped, but occurs in several phases [75]. It is therefore not straightforward to assume that the longer an immigrant has spent in the country, the better his/her acculturation and health will be.

The bidimensional approach of measuring the extent of acculturation views acculturation as a process of adaptation to the mainstream culture while maintaining one's inherited ethnic identity [74]. This view of acculturation was best described by Berry [76-79]. According to this view, acculturation can take four directions, and an immigrant can become (1) Integrated - in other words, highly acculturated, but at the same time preserving a strong ethnic identity; (2) Assimilated - i.e. entirely acculturated into the main stream culture at the expense of ethnic identity and no longer associating oneself with one's ethnic culture; (3) Separated - i.e. not acculturated with preserved strong ethnic identity or (4) Marginalized - i.e. with no strong acculturative pattern or ethnic identity [76, 79]. Consequently, studies using the bidimensional approach should account for the multiple components of both acculturation and ethnic identity, such as immigration demands [80], knowledge about, participation in, and attachment to the ethnic group [81, 82], etc. Therefore, although being more inclusive, informative and valid [74], the bidimensional approach is complicated, demanding, and time-consuming. The bidimensional approach of measuring the extent of acculturation was applied in Studies III

and IV. In Study IV it was also compared with an alternative measurement of acculturation. We felt that the development of an alternative measurement of acculturation was important, taking into consideration the limitations of the existing approaches.

1.3.1.3 Other health determinants

Surely, there are other factors which might affect the health of immigrants from the FSU. For example, their pre-migration experiences of life under communistic rule, defined by central planning, coercion, terror, and communistic nationalism [83] with an absence of basic human rights or freedoms and with one party's domination in all aspects of economic and social life [84]. However, the studies do not agree on whether there is relationship between health status and the communist regime *per se* (for a review, see [85]). There have been, however, discussions about how the change from a communistic regime to democracy as a result of emigration negatively affects the mental health of Soviet immigrants [22].

Another example of possible health determinants in immigrants from the FSU is post-migration factors. For instance, migration to a society with different patterns of health and health behaviors, with higher economic satisfaction among the inhabitants and a different civil society might benefit the immigrant's health. On the other hand, stressors of immigration, such as novelty, not feeling at home in the host country, loss, and discrimination [21], feelings of uselessness, loss of status [86], insecurity [22], and other factors influencing immigrants in the host country might affect their health negatively. Nor should it be forgotten that such personality characteristics as locus of control, introversion/extraversion, self-efficacy, and psychological resilience [41] might also determine the health of an immigrant.

The discussion of each of these and many other determinants deserves consideration in their own right. However, Studies I and II of this thesis focused the analyses on the influence of demographic, socioeconomic, and migration-related characteristics on the self-reported health of immigrants from the FSU in Sweden.

1.3.2 Methodological aspects of measuring self-reported health

In general, self-reported health may be influenced by other factors besides the above-mentioned health determinants.

The choice of answer and the accuracy of the response in any self-report can be enhanced by the clarity and order of the questions [87], by the individual's understanding of the question and motivation to answer, by the reference groups that the individuals use to choose the answer [88, 89], by external factors (e.g., the place of the interview), the social context of the interview [90], and the method of data collection, as the respondents tend to present a more positive self-image during a face-to-face or telephone interaction with an interviewer [91]. The latter, a tendency to respond to self-report items in a manner that makes a respondent look good rather than to respond in an accurate, truthful manner, is called social desirability [92] and it has been observed in all kinds of self-reports, including self-reports of health and health behaviors [93, 94]. Moreover, the respondent's characteristics, including personality type, self-esteem, and being an extravert/introvert can also influence any self-report and particularly the self-reporting of health. Disclosing

illness may make some individuals feel embarrassed, uncomfortable, or exposed [95]. In her study in Latvia, Skultans [96] found that some individuals suffering from physical and psychological disabilities are ashamed of their problems and are reluctant to share them with others. For many of them, a disability is a sign of not succeeding with their lives.

1.3.3 Culture and self-reporting of health

Cultural beliefs, communication traditions, including those involving health, might also largely affect the self-reporting of health. However, culture is one of the less studied and complex factors influencing the self-reporting of health. “While the level of self-reported health may be a good proxy of mortality and morbidity in homogeneous populations, in some groups this subjective measure may provide a misleading picture since the culture may be a factor involved in the way people perceive, evaluate and report their health” [97]. Being a symbolic and linguistic system within which individual experiences are labeled and acted on [98], culture may affect the way people report their health via, for example, the social norms which differ between cultures, such as the norms for expressing ill health in public or superstitions concerning talking about one’s health [99]. Moreover, different cultures have different images of “normal” health [89] and, consequently, the normative answer to the general health question, i.e. self-reported health, is “good” in some cultures, whereas it is “poor” in others [100]. This normative answer may not correspond to the respondent’s actual health as evaluated by a physician [98].

Immigrants, therefore, may communicate their health differently than the population in a host culture [96, 101-103]. However, with the process of acculturation to a new culture, their behavior shifts away from previously learned patterns toward those found more frequently in the host country [76]. Berheim (see [104]) suggests that this is possible because the conscious mind enhances behaviors/symptoms that are in congruence with the behaviors that are defined by the surrounding culture as legitimate or meaningful. Thus, one might expect the new norms for self-reporting of health to be learned and the original ones abandoned or modified in the process of acculturation. This has been supported by the study of Asian adult immigrants in the US. Chen and colleagues [105] have shown that, traditionally, “people of non-western cultural background tend to report more somatic depressive symptoms and less affective symptoms than people in western countries. However, as Asian adult immigrants become acculturated into the western society, they tend to increasingly report more affective and less somatic depressive symptoms” [105].

Thus, a culturally sensitive approach is essential in studies of self-reported health, especially in multicultural populations or studies of immigrant health. Nowadays, it remains unclear through what mechanisms culture and acculturation affect the self-reporting of health and Study III was designed to explore the matter more deeply.

2. AIMS

2.1 GENERAL AIM

To study self-reported health and its determinants in immigrants from the FSU in Sweden.

2.2 SPECIFIC AIMS

2.2.1 Study I

The first aim was to analyze whether there is an association between being born in the FSU and other countries of the former Soviet Bloc and poor self-reported general health among immigrants in Sweden. The second aim was to analyze whether this association persists after adjusting for demographic, socioeconomic, and migration-related variables.

2.2.2 Study II

The first aim was to study whether self-reported mental health (defined as self-reported psychiatric illness and psychosomatic complaints) was poorer among persons born in the FSU and other countries of the former Soviet Bloc currently living in Sweden than among Swedish-born persons. The second aim was to investigate whether the demographic, socioeconomic, and migration-related characteristics of the respondents could explain this.

2.2.3 Study III

The first aim was to explore the self-reported health of Russian-speaking immigrants from the FSU in Sweden. The second aim was to describe the influence of the culture of origin and of acculturation into the host country on the self-reporting of health among these immigrants.

2.2.4 Study IV

The overall aim was to explore the immigrants' own rating of the extent of their acculturation (self-reported integration) as a source of information in contrast to an external (researchers') measurement of acculturation. Specific aims were (i) to measure the respondents' extent of acculturation (bidimensional approach); (ii) to compare the researchers' measurement with the respondents' self-reported integration; and (iii) to learn what criteria the respondents applied when rating the extent of their own acculturation.

3. METHODS

3.1 COMBINATION OF QUANTITATIVE AND QUALITATIVE METHODS

Combining quantitative and qualitative methods is becoming increasingly common in research. Traditionally, quantitative and qualitative methods belong to different paradigms or world views that guide research [106]: ontological (view of reality), epistemological (view of knowing and the relationship between the knower and the to-be-known), methodological (view of mode of inquiry), and axiological (view of what is valuable) [107]. When combined in a study, quantitative and qualitative methods can supplement each other, describing the phenomenon from different perspectives, strengthening the results, and offsetting each other's shortcomings [108]. The two methods might also be combined for quantification, complementary, informational, developmental or other reasons (for reference, please see [109]). The research design using quantitative and qualitative data collection and analysis techniques in either parallel or sequential phases is said to use mixed methods [110].

The present thesis used mixed methods and included both quantitative and qualitative studies. The included studies were not consistent in terms of the studied samples, and the participants in the qualitative studies were not derived from the samples of the quantitative studies. However, the decision to use a qualitative approach to study self-reported health among immigrants from the FSU was defined by the findings of the quantitative studies I and II. New research questions arose as a result of these quantitative studies, and a qualitative method was considered appropriate for elucidating these questions. Table 2 provides an overview of the four studies.

Table 2. Overview of the studies.

	Study I Sungurova et al. (2006)	Study II Blomstedt et al. (2007)	Study III Blomstedt et al. (submitted)	Study IV Blomstedt et al. (2007)
Data source	SALLS	SALLS	Russimmigrant	Russimmigrant
Study design	Quantitative Cross-sectional	Quantitative Cross-sectional	Qualitative In-depth interviews	Qualitative In-depth interviews
Outcome	Poor self-reported general health	Poor self-reported mental health (self-reported psychiatric illness and psychosomatic complaints)	Health communication (core category)	Self-reported integration (studied variable)
Statistical method/method of analysis	Logistic regression	Logistic regression	Grounded theory	Content analysis “Framework”
Measurement	Odds ratio	Odds ratio		
Interview period	1993-2000	1994-2001	April-May 2005	April-May 2005
Age	25-84	25-84	25-70	25-70
Sample size	36,084 (54 of whom were persons born in the FSU)	35,844 (60 of whom were persons born in the FSU)	15 (all born in the FSU)	15 (all born in the FSU)
Response rate	~80%	~80%		

3.2 QUANTITATIVE STUDIES I and II

3.2.1 Materials

Studies I and II were based on data from the Swedish Annual Level of Living Survey (SALLS). SALLS is a national survey of living conditions of the Swedish population, which is performed annually by Statistics Sweden. The standardized questionnaire in SALLS contains items on, for example, health and lifestyle, socioeconomic status, social relations, and sociodemographic characteristics. A systematic, random sample is drawn annually from the Swedish Total Population Register. It comprises, on the average, 6,000 permanent Swedish residents (including immigrants with permanent residence permits or Swedish citizenship), 16-84 years of age and not interviewed during the preceding seven years. Face-to-face interviews are carried out in Swedish (with an interpreter if needed) by qualified interviewers, mostly at the respondents' homes.

3.2.2 Study sample

3.2.2.1 Study I

This study was based on eight pooled, cross-sectional random samples of permanent Swedish residents (including immigrants with permanent residence permits or Swedish citizenship who arrived in Sweden after 1944) interviewed within SALLS between 1993 and 2000. Only men and women aged 25 to 84, born in Sweden ($n = 35,711$), Poland ($n =$

158), other East European countries (n = 161), or the FSU (n = 54) with complete information on the studied variables were included in the final sample (n = 36,084).

3.2.2.2 Study II

This study was also based on eight pooled, cross-sectional random samples of permanent Swedish residents (including immigrants with permanent residence permits or Swedish citizenship who arrived in Sweden after 1944), but only those who were interviewed within SALLS between 1994 and 2001. Men and women aged 25 to 84, born in Sweden (n = 35,459), Poland (n = 161), other East European countries (n = 164), or the FSU (n = 60) with complete information on the studied variables were included in the final sample (n = 35,844).

3.2.3 Outcome variables

3.2.3.1 Study I

Poor self-reported general health

Self-reported general health was based on the question: “How would you describe your general health?” Those who answered “something in between good and poor” or “poor” in 1993–1995 and “something in between good and poor”, “poor” or “very poor” in 1996–2000 were considered to have poor self-reported general health. Those who answered “good” in 1993–1995 and “good” or “very good” in 1996–2000 were considered to have good self-reported general health.

3.2.3.2 Study II

Poor self-reported mental health

Self-reported mental health was defined in the present study as *self-reported psychiatric illness* and *psychosomatic complaints*.

Self-reported psychiatric illness was derived from two questions:

- 1) “Have you any long-standing illness, after-effects of injury, disability, or other ailment? Name and describe in detail each ailment/illness.” The coding group at Statistics Sweden assigned diagnoses according to ICD-9 (even after 1997) to everything the respondents had reported when answering this question. For the present study, all respondents with the diagnoses 290–319 were defined as having a self-reported long-standing psychiatric illness.
- 2) “Do you have anxiety?” (Yes, severe; Yes, slight; No). Those who answered “Yes, severe” and “Yes, slight” were regarded as having anxiety.

All persons who reported having any long-standing psychiatric illness (1) and/or anxiety (2) were categorized as having a self-reported psychiatric illness.

Psychosomatic complaints were derived from the questions:

- 1) “Have you experienced any of the following during the last two weeks: (a) often feeling tired; (b) feeling tired during the day; (c) feeling tired in the evening; (d) suffering from repetitive headaches or migraine; and/or (e) sleeping difficulties?” (Yes/No)
- 2) “Have you (f) experienced aching in the shoulders or neck; (g) back pain, pain in the hips or sciatica; (h) pain or aching in the hands, elbows, legs, or knees?” (Yes, severe;

Yes, slight; No). Those who answered “Yes, severe” or “Yes, slight” were considered to experience aching or pain.

Persons reporting three or more of the above complaints (a–h) were considered to have psychosomatic complaints.

3.2.4 Explanatory variables (used in both Study I and Study II)

Explanatory variables included demographic and socioeconomic (country of birth, age, sex, marital status, social network, SES, and smoking), as well as migration-related variables (language spoken at home, years in Sweden, and year of immigration to Sweden).

Country of birth

Country of birth was categorized into:

- “Sweden” (reference group);
- “Poland” (analyzed separately due to a large number of immigrants);
- “Other East European countries” – a composite of Hungary, Bulgaria, the Czech Republic, Slovakia, and Romania; and
- “The Former Soviet Union” – a composite of all 15 former republics.

With the exception of the German Democratic Republic (GDR), all the countries once making up the Soviet Bloc were included in Studies I and II. The GDR was excluded because it has been coded as “Germany” together with the Federal Republic of Germany in the SALLS database for the majority of the years of the present studies. This made it impossible to define people born specifically in the GDR for our study periods.

The official date of the creation of the Soviet Bloc is May 14, 1955, although Eastern Europe had *de facto* already come under Soviet control at the end of the Second World War. Consequently, we chose to include immigrants from the countries of the former Soviet Bloc who came to Sweden after 1944, rather than after its official date of creation. We have also included immigrants who arrived after its dissolution in 1989 because they had lived in the Soviet Bloc before that date.

Age

Age was used as a continuous variable. The lower age limit was set at 25 when, presumably, the majority of young people start working and living on their own. The upper age limit was limited to 84 years by the SALLS sample.

Sex

Men and women

Marital status

Marital status was categorized into: married/cohabiting or single with or without children under 18 years old.

Social network

The social network index was based on the frequency of contacts with a close friend (from 1–6 days ago to more than 12 months ago) and the neighborly exchange of small

services (from several times a week to never). The answers were ranked from 0 to 5 and the scores for these answers were added up (range: 0–10). Participants with a score of less than 3 were considered to have a “good” social network, others to have a “poor” social network. The social network variable measured as the frequency of contacts does not reflect the “extensiveness” and “resourcefulness” of these contacts; nevertheless, it represents the respondent’s potential for obtaining support (emotional or material) if in need.

Occupation and housing tenure

Occupation and housing tenure were included as two proxies for SES. Occupational status was categorized into five groups: higher and middle white-collar, lower white-collar, self-employed, student, or blue-collar worker. Occupation was regarded as present or, in cases of current retirement/unemployment, previous work. Housing tenure was categorized into owning and renting one’s home.

The employment variable (employed/unemployed) was not included as a proxy of SES since it did not allow ordinary pensioners, early retirement pensioners, disability pensioners, or students to be taken into account.

Smoking

This variable was based on the following question: “Do you smoke daily?” The respondents were divided into two groups based on their answers, i.e. “Yes” or “No”.

The following migration-related variables were used in the additional analyses:

Language spoken at home

Language spoken at home was dichotomized into Swedish or other language.

Years in Sweden

This variable was categorized into four groups: 1–5, 6–10, 11–19, or >20.

Year of immigration to Sweden (Study II)

This variable was categorized into six groups: 1945-1949, 1950-1959, 1960-1969, 1970-1979, 1980-1989, and 1990-1999.

Year of immigration to Sweden correlated highly with *years in Sweden* and yielded almost the same result when tested in the additional analyses, although with a poorer fit of data. Therefore, this variable was tested but was not used in the additional analysis and is not discussed in this thesis.

3.2.5 Statistical analysis (used in both Study I and Study II)

The data were analyzed using the STATA software package [112]. Unconditional multivariate logistic regression [113] was applied to estimate the odds ratios (ORs) of poor self-reported health, and the results were presented with a 95% confidence interval (CI). First-order interactions between country of birth and explanatory variables (excluding migration-related ones) were tested. Full models included these explanatory variables analyzed jointly. An analysis including the migration-related variables was performed likewise on immigrant groups only (the Polish-born immigrants were used as a reference

in Study I and the FSU immigrants in Study II). The Hosmer and Lemeshow goodness-of-fit test [114] was used to assess the fit. All models showed a satisfactory fit ($p>0.05$).

3.3 QUALITATIVE STUDIES III and IV

3.3.1 Qualitative research methods

The term “qualitative research” applies to any type of research that produces findings not arrived at by the statistical procedures or other means of quantification. Instead, the findings in this type of research are derived from a non-mathematical process of interpretation, carried out for the purpose of discovering concepts and relationships in raw data and then organizing them into a theoretical explanatory scheme [109]. The aim of a qualitative research is to explore the meaning of a social phenomenon as experienced by the people themselves [115]. The qualitative research approach is useful for understanding all sorts of human behavior, for exploring the ways in which people understand and interpret their social reality [116], and to study such phenomena as feelings, thought processes, and emotions that are difficult to extract or learn about through quantitative research methods [109]. Qualitative research has been particularly recommended for studying the cognitive cultural processes associated with self-reporting of health. “While other research can tell about the meanings respondents supply, only the qualitative approach can reach beyond and discover the additional influences on the self-reporting of health” [89].

Qualitative research methods include various strategies for systematic collection, analyses and interpretation of data obtained by use of different methods, among which the most common are interviews with individuals or groups, observations (with or without participation and intervention), and field notes [117]. The collected data are usually transcribed and analyzed as text. The data for Studies III and IV were obtained by means of the semistructured in-depth interviews.

The common feature of various qualitative research methods is that the number of cases studied is less important than the quality of the sampling decisions. The generalizability depends on the latter and is linked less closely to quantification. For theoretical and analytical generalization, the relevant questions are “Which cases?” rather than “How many?” and “What do the cases represent?” [118].

In general, qualitative research is based on text instead of numbers, applies procedures for the interpretation of meaning instead of statistics to calculate probabilities, aiming for the wholeness rather than details, and acknowledges the involvement of the researcher in the construction of knowledge [117].

The analytical techniques that might be used in qualitative research also vary. The qualitative data were analyzed by applying grounded theory in Study III and a content analysis technique, “Framework”, in Study IV.

3.3.1.1 Grounded theory

The grounded theory was developed by Glaser and Strauss in the 1960s [119]. Literary “grounded theory” refers to a theory that was derived from data, systematically gathered and analyzed through the research process. When applying this research approach a researcher does not begin a project with a preconceived theory in mind, but allows the theory to emerge from the data. Grounded theories, because they are drawn from the data, are likely to offer insight, enhance understanding, and provide a meaningful guide for action [109]. Data analysis in grounded theory involves a coding procedure, conceptualizing and classifying the codes, forming categories, establishing the connections between these categories, and, finally, building a model or a theory. Table 3 roughly illustrates part of the grounded theory analyses used in Study III. A more detailed description of the analytical procedure applied in Study III is presented further on.

Table 3. Example of the grounded theory analysis

Interview quotations	Open codes	Concepts and their dimensions	Main conceptual categories
“Only in Russia is it acceptable to come to someone and start crying... (<i>People</i>) are used to taking along half a liter (<i>vodka</i>) and coming to a friend and sitting there until the morning, crying and talking (<i>about their problems</i>). ... Swedes have more formal communication. It is not acceptable to discuss problems: they are my problems, so I am the one who should solve them...”	Culture (Russian) Complaining Tradition (Russian) Drinking Role of friends Communication (Rus.) Sharing problems (Rus.) Communication (Sw.) Tradition (Swedish) Sharing problems (Sw.) Relation to problems	Communication traditions: Russian (open) and Swedish (formal) Problem sharing: Russian (sharing problems) and Swedish (no sharing)	Manner of communication (Russian vs. Swedish)

3.3.1.2 Content analysis

In qualitative content analysis, the text is first divided into units of meaning. These are condensed into descriptions close to text and the latent content is interpreted [120]. The method was used in Study IV to extract important criteria recounting how immigrants evaluate their own integration in the host society. The main difference between grounded theory and content analysis is that the content analysis is close to text and is not aimed at generating models or theories.

3.3.2 Scientific rigor in qualitative research

Criteria of scientific rigor in qualitative research include credibility, dependability, confirmability, and transferability [121]. According to Lincoln and Guba [121], these criteria correspond with traditional ones (used in quantitative research) in some ways, comparing credibility with internal validity, confirmability with objectivity, and transferability with generalizability or external validity.

Credibility refers to the ability to produce credible research: can others see what we see? Triangulation is a common method for assuring credibility. The idea of triangulation originated from a craft used by land surveyors, who increase the validity of a map by incorporating measures from different angles [122]. Triangulation, as a method to improve credibility might include cooperation of researchers with different backgrounds, combination of two or more theories, data sources, methods of data collection and data analysis within one study of a single phenomenon [123]. Other methods of improving credibility, according to Mays and Pope [124], might include respondent validation (or so-called 'member checking' when the members of the studied group receive the results of the study for validation), clear detailing of methods of data collection and analysis, and reflexivity.

Reflexivity refers to accounting for the effect of the researcher. "A researcher's background and position will affect what he/she chooses to investigate, the angle of investigation, the choice of methods, the findings considered most appropriate, and the framing and communication of conclusions" [122]. Thus, during all steps of research, the effect of the researcher should be assessed and adequate accounts of this effect should be presented in the publication. "If reflexivity is thoroughly maintained, personal issues can be valuable sources for relevant and specific research" [122] since theoretical background might help him/her to recognize and understand the way to carry out the interview and analyze the data [125].

Dependability refers to the researcher's ability to capture all aspects of the complex reality of the studied matter. To ensure it, the researcher has to thoroughly describe the research process, explaining all the steps and thus making it possible to follow them.

Confirmability is a criterion of neutrality of data [126]. To achieve neutrality, the researcher has to ensure that the results and conclusions are grounded in data [120]. This may be achieved by the researcher's constant commuting back to data and comparing codes, categories, and models with the original data in the technique known as constant comparisons.

Transferability refers to the question in what context the findings should be applied, namely, whom and what the findings concern. It is closely related to the sampling strategy of a qualitative study. Therefore, a thorough description of sample characteristics, study settings, and the research process is necessary for the reader to be able to ascertain for which situations the findings might provide information [121]. Another approach, sometimes called analytical generalization, is abstracting the results into hypotheses which can be transferred to similar situations and problems [127].

In the qualitative studies presented in this thesis, several techniques were used to ensure the scientific rigor.

Two types of triangulation were used to ensure the credibility of results. The first type of triangulation comprised participation in data analyses, hypothesis generation, and reporting the results of three researchers with experience in qualitative research, but with different backgrounds in family medicine, psychology and public health. Moreover, prior to submission for publication, Study III was read and evaluated by a group of researchers,

including an anthropologist, an ethnographer, and several medical practitioners. This was done to ensure that the readers, unacquainted with the studied matter, could follow the stepwise description of data collection and analysis, could understand the hypothesis, and, most importantly, this was done to find out the readers' opinions about the presented data and the generated conclusions.

The collaboration of several researchers in all the stages of the research process in both qualitative studies also had another advantage. While I, being a Russian-born individual who had lived in Sweden for five years, could have had prior knowledge of the studied matters, the other researchers had no such prior knowledge and no skills in the Russian language.

Yet, my particular background was rather important. Being a native Russian-speaker, I could conduct the in-depth interviews in Russian, which enabled the full expression of ideas and emotions by the respondents in their native language. It also gave me the possibility, to go back to the initial data in the process of data analysis and be able to check if something was lost in the translation of data available to the other researchers. Moreover, although a researcher with a grounded theory approach should not utilize any assumptions he/she might have had prior to the study, this does not necessarily mean not having a theoretical background which will help him/her to recognize and understand the way to carry out the interview and analyze the data [125]. Nevertheless, I recognized the possible effect of my background and acknowledged it as a possible limitation in the Discussion section of the presented studies.

The second type of triangulation, applied in both qualitative studies, Study III and Study IV, comprised validation of results. The results obtained from the analyses of the in-depth interviews with the chosen sample were validated by means of the telephone mini-interviews with new respondents after the main data had been analyzed. The findings derived from the data from the mini-interviews by telephone corresponded to the findings based on the data from the in-depth interviews.

We also tried to ensure dependability and transferability of the studies by giving a thorough description of the study design, sampling procedures, sample characteristics, and the process of data analysis and generation of conclusions. The data analyses were done according to the constant comparisons technique in order to ensure the neutrality of data. All tape-recorded interview contents, notes, and transcribed text were analyzed, discussed and subjected to a final proofreading, and all materials were stored for future reference and possible application.

Transferability was ensured by the theoretical and strategic sampling of participants for the in-depth interviews. To say that one samples theoretically means that sampling, rather than being predetermined before beginning the research, evolves during the process [109]. In Studies III and IV the semistructured interview guide was created prior to the beginning of the studies, but it was constantly updated during the conduct of the interview to ensure the collection of saturated data. Data are considered to be saturated when no essentially new information is obtained during the interviews and the preliminary data analysis, i.e. when the collection of additional data appears to be counterproductive and the "new" information that is discovered does not add much more to the explanation at the time

[109]. The strategic sampling guaranteed the variation in sample characteristics. The strategic sampling also counteracted the limitation of a snowball technique (referrals by other participants in the study) employed for recruitment of the interview participants, i.e. the recruitment of persons with demographic characteristics to similar to those of the previous participants who recommended them. The snowball technique in turn counteracted the limitation of the recruitment via public announcements, i.e. recruiting persons who were more responsive than the average population.

3.3.3 Data collection method

Studies III and IV were based on the data collected by means of the semistructured in-depth interviews, conducted within “Russimmigrant” - a pilot qualitative research study on the acculturation of Russian-speaking immigrants from the FSU in Sweden. The data collection was conducted in April-June 2005 in Stockholm and its suburbs.

Respondents were recruited in two ways: (a) as a result of their contacting the project’s office in response to interview announcements made in Russian and Swedish and placed across the city and suburbs (nine persons) and (b) by the snowball effect (six persons). The following sampling criteria were used: (a) sex (men/women), (b) age (25-34, 35-44, 45-59, >60), (c) marital status (married/cohabiting or single/widowed/divorced), and (d) employment (employed/unemployed). Although the final sample did not include all possible variations of the sampling criteria, the recruiting of participants was finished when we felt we had reached a saturation point in the variation of the received answers.

In-depth interviews (approximately 1.5 hours each) took place at the participant’s home or at any other place chosen by the participant. The interviews were held in Russian, tape-recorded, transcribed verbatim and translated into English. The semistructured interview guide consisted of several blocks of open-ended questions concerning the respondent’s experience of migration, socioeconomic status and background, family situation and relations, acculturation, health, and coping strategies (it is presented in the Appendix of Study IV). It was complemented after each interview if new topics or questions emerged – according to the theoretical sampling method [109]. Follow-up telephone calls were made to the previous respondents to supplement their interview data if needed.

3.3.4 Study sample

The participants, 15 persons (5 men and 10 women) in total, were Russian-speaking immigrants with a Swedish permanent residence permit or Swedish citizenship. They came to Sweden from the FSU, specifically from Russia (9), Ukraine (2), Byelorussia (1), Kazakhstan (1), Kyrgyzstan (1) and Uzbekistan (1). Two of the immigrants came to Sweden after having lived in another country (Cuba, the USA). The mean age of the respondents was 47.3 (25 - 70) years and the mean time spent in Sweden was 13.6 (3 - 36) years.

3.3.5 Analysis

Data collection and analysis were carried out in parallel. Although the data were analyzed by different techniques in Study III (grounded theory) and in Study IV (the content

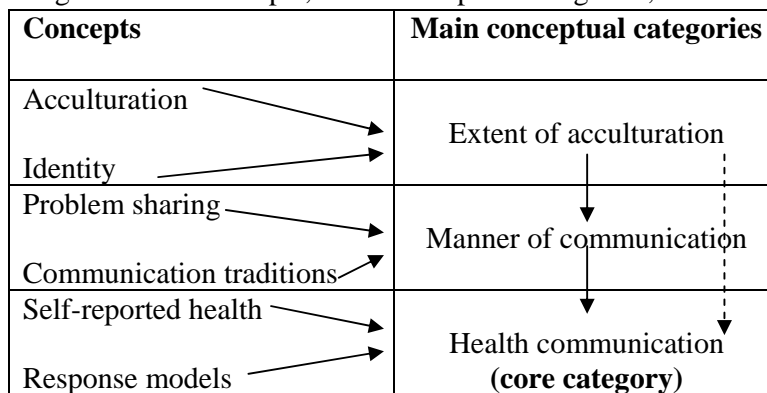
analysis technique “Framework”), the preliminary stage of analysis was similar in both techniques and included familiarization with the data. The difference was in the further organization of the data. We therefore, created two separate files to record the same interview data, but organizing it in two different ways.

It was essential to carry out the preliminary data analysis simultaneously with the data collection in accordance with the theoretical sampling [109]. This allowed us to see the emergence of new topics or if data were incomplete, which gave us the opportunity to constantly update the semistructured interview guide as described above.

3.3.5.1 Study III

The grounded theory approach was applied to analyze the data for Study III. The analysis included open, axial, and selective coding [109]. In open coding, the interview scripts were broken down line by line to select words or phrases that reflected a “single unit of meaning” [128]. The codes sharing common characteristics were then grouped into more abstract conceptual categories or concepts. Conceptual categories were compared with each other and subcategories were identified to form dimensions of the concepts. The recruitment of participants and interviewing were terminated when the categories were saturated, i.e. when no new information emerged during coding [109]. Through axial coding, the relations between the concepts were identified and the main conceptual categories formed concepts of higher order. Other data sources, such as existing literature, were used to compare with emerging categories and assist in the explanation of the developing linkages and theory. For example, Berry’s bidimensional theory of acculturation [76] helped to explain the link between two concepts (*acculturation* and *identity*) and helped to construct a main conceptual category (*extent of acculturation*). Detailed memos were kept about the potential linkages of the categories to provide ideas about the emerging theory. Finally, through the selective coding, the core category was established and all the conceptual categories were linked and related to it. Concepts, main conceptual categories, the core category and the links between them are presented schematically in Table 4.

Table 4. Linkage between concepts, main conceptual categories, and the core category



The conceptual category *extent of acculturation* was derived by combing two concepts: *acculturation* and *identity*. The concept *acculturation* was derived from the analysis of all the respondents’ statements concerning their occupation, language skills, and

communication. Participants who reported two of the following were considered to have achieved high-level acculturation: being employed; having a good knowledge of Swedish; and having contacts with Swedish-born individuals outside work. Other participants were considered to have experienced low-level acculturation. The concept *identity* was derived from the analysis of all respondents' statements concerning: self-identification as a Russian; being proud of being Russian; commitment or sense of belonging to the Russian ethnic group; positive evaluation of the Russian ethnic group; belief in Russian values; involvement in ethnic behaviors and practices; interest in and knowledge of the group; and preference for the Russian-speaking group. When the majority of these statements were positive, a respondent was considered to have high-level identity and, otherwise, low-level identity.

The conceptual category *manner of communication* was derived from the concepts *problem sharing* and *communication traditions*. The concept *problem sharing* was derived from the analysis of the respondents' answers to the question about whether they would share their problems, of any kind, with the persons closest to them. The concept *communication traditions* was derived from the analysis of all respondents' statements concerning the way people communicate in Sweden and in Russia.

The conceptual category *health communication* was derived from the concepts *self-reported health* and *response models*. During the in-depth interviews the respondents were asked the so-called general health question "How do you feel in general?" No response alternatives were offered, thus allowing the respondents to describe their health in their own words as extensively as they wished. The data obtained were divided into two components. The first component concerned what was mentioned in the answer to the general health question, in other words, what health was reported. We referred to this component as *self-reported health*, and classified it as "very good", "good", "something in between good and poor", "poor", or "very poor". The second component concerned how the general health question was answered, i.e., the verbal context in which the answer was provided. We referred to this component as the *response model*.

To validate the answers to the general health question, we asked the participants the following additional questions concerning their health: (1) Have you sought medical counseling in the past three months? Why? (2) Do you have any chronic diseases? What are they? How long? (3) How is your mood in general? (4) Have you ever had depression? When? Why? These questions were posed not directly before or after receiving an answer to the general health question, but considerably earlier or later in the interview to minimize the risk of one answer determining another. In some interviews these questions were unnecessary since the respondent revealed everything him- or herself in the answer to the general health question. The answers to these questions were analyzed separately from the answers to the general health question and were referred to as the "actual" health (the quotes are to remind readers that the answers were not clinically supported). Self-reported health was compared with the "actual" health among all respondents.

3.3.5.2 Study IV

The content analysis technique "Framework" [129] was applied to analyze the data for Study IV. The first stage comprised familiarization with the data and identification of

emerging issues. This led to the development of a thematic framework, a matrix with a series of subject charts both grounded in and driven by the respondents' own accounts [116]. Data from each interview transcript (verbatim quotations) were transposed under the appropriate subject heading of the thematic matrix after each interview. Using this methodology, it was possible to compare data immediately both within a single interview and between interviews. It was also possible to observe the emergence of new charts or any missing information. In the latter case, the interview guide was complemented with the new topics, and follow-up telephone calls were made to complement the data of the earlier respondents. Data collection was considered complete when all the main charts were filled out for all the participants and new charts were not emerging (i.e., when a state of saturation was reached). The final stage involved classificatory and interpretative analysis of the charted material to identify patterns and find explanations. For example, all the quotations concerning working experience were placed in the chart *Occupation* and its content was analyzed thereafter. The interpreted data from the charts *Occupation*, *Language*, and *Communication* were then combined to form a comprehensive variable, *Acculturation*, used in the further analysis.

Since the word "variable" is usually applied in quantitative research, I would like to justify its use in Study IV. This study was aimed at exploring the immigrants' own rating of the extent of their acculturation (addressed here as self-reported integration) as a source of information in contrast to an external (researchers') measurement of acculturation. In other words, the purpose was to learn whether the self-reported integration could be used as a proxy for acculturation in various studies on migration and health, primarily in the quantitative studies, as an alternative to the inaccurate proxies that are being currently used. Therefore, although the "variables" presented in Study IV are in fact concepts filled in with the verbal quotations from the interviews, for the sake of convenience and transferability of the self-reported integration to quantitative studies, we refer to them as "variables" in this study.

Several such variables were derived from the "Framework" analysis. They are presented below.

Acculturation and *identity* were derived in exactly the same way as the concepts with the same names in Study III.

Understanding of integration by respondents was ascertained by asking what the phrase "to become integrated" meant to them.

Self-reported integration or the respondents' view of their own integration was ascertained by asking: "In your opinion, have you become integrated in Sweden?" The verbal phrase "to become integrated" (*integririvatsya*) was preferred to the verbal phrase "to become acculturated" (*akkulturirivatsya*) because the former verb is better known than the latter one in Russian. Therefore, the answer "Yes, I have become integrated" was considered to be a proxy for high-level acculturation and "No, I have not become integrated" to be a proxy for low-level acculturation. The verbal phrase "to become integrated" (*integririvatsya*) was used on purpose instead of "to be integrated" (*byt integririvannym*) to avoid leading the respondents into discussions concerning the host country's integration

policies, but, instead, to encourage them to reflect upon their own feelings and experiences of integration into the host society.

Self-reported integration criteria considered by the respondents when rating their integration were ascertained by asking: “Why do you say you have/have not become integrated?”

General determinants of integration were obtained by asking the respondents: “In your opinion, what is needed for integration in general?”

3.4 ETHICAL CONSIDERATIONS

Studies I and II were based on the ethical approvals 11/00, 2005/399-32, 13/00, and 14/00 granted by the Ethics Committee of the Karolinska Institute, Sweden. The data used in the analyses could not be traced back to any specific interview participant. Every SALLS participant registered in the database was assigned a number by Statistics Sweden, thereby preventing disclosure of the participants’ identity. Therefore, we did not have access to any information allowing the opposite.

Studies III and IV were based on the ethical approval 51/03 granted by the Ethics Committee of the Karolinska Institute, Sweden. Prior to the in-depth interviews, each participant was informed about the purpose and procedures of the study, signed an informed consent statement and completed a basic personal data sheet. Confidentiality was assured and pseudonyms have been used throughout the reports of the study findings.

4. MAIN RESULTS

4.1 STUDY I

The prevalence of poor self-reported general health (with 95% exact binomial confidence intervals) among persons born in Poland, other East European countries, the FSU and Swedish-born respondents is shown in Table 5. The same table shows that the age- and sex-adjusted odds ratio of poor self-reported general health was higher among persons born in Poland, other East European countries and the FSU than among the Swedish-born respondents (Model 1). Moreover, the odds ratio of poor self-reported general health among these immigrants remained almost unchanged after both stepwise (not shown) and simultaneous adjustment for the demographic and socioeconomic variables (Model 2). All three groups of immigrants had similar odds ratio for poor self-reported general health.

In additional unconditional logistic analyses (Swedish-born respondents were excluded), we found that migration-related variables, such as language spoken at home and years in Sweden, did not influence the association between being born in Poland, other East European countries, or the FSU and poor self-reported general health (Model 4).

Table 5. Association between country of birth and poor self-reported general health: SALLS 1993-2000 for ages 25-84.

Variable	Country of birth			
	Sweden	Eastern Europe		The Former Soviet Union
		Poland	Other	
Sample size	35,711	158	161	54
Prevalence (%) (95% CI)	29.5 (29.0-30.0)	38.6 (31.0-46.7)	38.5 (31.5-47.1)	46.3 (32.6-60.4)
Model 1. OR (95% CI) Adjusted for age and sex	1 (reference)	1.79 (1.29-2.50)	1.72 (1.24-2.39)	2.26 (1.30-3.95)
Model 2. OR (95% CI) Adjusted for all variables*	1 (reference)	1.75 (1.26-2.44)	1.65 (1.19-2.29)	2.21 (1.26-3.87)
Additional analyses (immigrants only; migration-related variables added)				
Model 3. OR (95% CI) Adjusted for age and sex	–	1 (reference)	1.09 (0.67-1.77)	1.32 (0.67-2.57)
Model 4. OR (95% CI) Adjusted for all variables**	–	1 (reference)	1.11 (0.67-1.84)	1.36 (0.68-2.70)

Abbreviations: SALLS, Swedish Annual Level of Living Survey; OR, odds ratio; CI, confidence interval.

* Age, sex, marital status, social network, occupational status, housing tenure, and smoking.

** Age, sex, marital status, social network, occupational status, housing tenure, smoking, *language at home*, and *years in Sweden*

4.2 STUDY II

The results of the logistic regression procedure presented in Table 6 showed that persons born in Poland or other East European countries reported both psychiatric illness and psychosomatic complaints about twice as often as the respondents born in Sweden. It also showed that persons born in the FSU had odds of reporting psychiatric illness and psychosomatic complaints similar to those of the Swedish-born reference group. This remained true even after stepwise (not shown) and simultaneous adjustment for the demographic and socioeconomic variables (Table 6).

Table 6. Odds ratios [OR (95% CI)] for self-reporting of psychiatric illness or psychosomatic complaints in the study population (simultaneous adjustment for all the explanatory variables, except migration-related ones): SALLS 1994-2001

Variable	Level	OR (CI 95%) Self-reported psychiatric illness	OR (CI 95%) Self-reported psychosomatic complaints
Country of birth	Sweden	1 (Reference)	1 (Reference)
	Poland	2.17 (1.55-3.03)	2.27 (1.63-3.15)
	Other East European countries	2.17 (1.54-3.02)	1.44 (1.05-1.96)
	The Former Soviet Union	1.09 (0.58-2.05)	1.16 (0.69-1.93)
Age	25-44	1 (Reference)	1 (Reference)
	45-64	1.13 (1.06-1.20)	1.04 (0.99-1.10)
	65-84	1.14 (1.06-1.23)	0.88 (0.83-0.94)
Sex	Women	1 (Reference)	1 (Reference)
	Men	0.56 (0.52-0.59)	0.54 (0.52-0.57)
Marital status	Married/cohabiting	1 (Reference)	1 (Reference)
	Single	1.65 (1.56-1.76)	1.06 (1.01-1.11)
Social network	Good	1 (Reference)	1 (Reference)
	Poor	1.48 (1.38-1.59)	1.04 (0.98-1.10)
Occupation status	White-collar	1 (Reference)	1 (Reference)
	Lower white-collar	1.24 (1.14-1.35)	1.24 (1.16-1.33)
	Self-employed	1.09 (0.98-1.21)	1.37 (1.27-1.48)
	Student	1.47 (1.26-1.72)	1.18 (1.04-1.35)
	Blue-collar worker	1.21 (1.13-1.29)	1.52 (1.44-1.60)
Housing tenure	Ownership	1 (Reference)	1 (Reference)
	Renting	1.28 (1.20-1.36)	1.12 (1.07-1.18)
Smoking	No	1 (Reference)	1 (Reference)
	Yes	1.32 (1.24-1.41)	1.23 (1.16-1.30)

Abbreviations: SALLS, Swedish Annual Level of Living Survey; OR, odds ratio; CI, confidence interval.

Table 6 also shows the odds of reporting psychiatric illness and/or psychosomatic complaints in other categories of the explanatory variables. For example, men reported psychiatric illness and psychosomatic complaints half as often as women. Respondents occupied with other than the white-color work, respondents who rented their homes, and those who smoked reported psychiatric illness and psychosomatic complaints more often than their counterparts. Those who were single reported psychiatric illness more often than those who were married/cohabiting, as did respondents with a poor social network, compared to those with a good social network. However, none of these demographic and socioeconomic variables could explain the association between the self-reporting of both psychiatric illness and psychosomatic complaints and the country of birth.

This association has been tested further. The FSU-born respondents were treated as a reference group, Swedish-born respondents were excluded (Table 7, Models 1a and 1b), and migration-related variables were added one-by-one to the analyses (Table 7, Models 2a, 2b and 3a, 3b). *Language at home* did not influence the odds of the outcomes. However, *years in Sweden* (Model 3b) largely decreased the odds ratio of reporting psychosomatic complaints among immigrants from Poland and other East European countries. Thus it can be regarded as a confounder for psychosomatic complaints, but not for self-reported psychiatric illness (Model 3a).

Table 7. Association between country of birth and outcome variables adjusted for all explanatory variables, including the migration-related variables *language spoken at home* and *years in Sweden*: SALLS 1994-2001, age 25-84 (Swedish-born respondents excluded)

	Country of birth	Eastern Europe		The Former Soviet Union
		Poland	Other	
	Sample size (n)	161	164	60
Psychiatric illness				
Model 1a	OR (95% CI) Adjusted for all variables (without migration-related ones)	2.06 (1.00-4.24)	2.01 (0.98-4.13)	1 (Reference)
Model 2a	OR (95% CI) Adjusted for all variables + <i>Language at home</i>	2.11 (1.02-4.35)	2.05 (1.00-4.24)	1 (Reference)
Model 3a	OR (95% CI) Adjusted for all variables + <i>Years in Sweden</i>	1.92 (0.90-4.08)	1.96 (0.93-4.12)	1 (Reference)
Model 4a	OR (95% CI) adjusted for all variables, incl. both <i>Language at home</i> and <i>Years in Sweden</i>	1.94 (0.91-4.14)	1.97 (0.93-4.18)	1 (Reference)
Psychosomatic complaints				
Model 1b	OR (95% CI) Adjusted for all variables (without migration-related ones)	2.03 (1.10-3.78)	1.30 (0.71-2.38)	1 (Reference)
Model 2b	OR (95% CI) Adjusted for all variables + <i>Language at home</i>	2.04 (1.07-3.79)	1.29 (0.70-2.38)	1 (Reference)
Model 3b	OR (95% CI) Adjusted for all variables + <i>Years in Sweden</i>	1.67 (0.87-3.19)	1.12 (0.60-2.11)	1 (Reference)
Model 4b	OR (95% CI) adjusted for all variables, incl. both <i>Language at home</i> and <i>Years in Sweden</i>	1.65 (0.86-3.16)	1.10 (0.60-2.53)	1 (Reference)

Abbreviations: SALLS, Swedish Annual Level of Living Survey; OR, odds ratio; CI, confidence interval.

To test the main results of the study, we conducted an analysis of hospital admissions based on data for all hospitalizations in the entire nation. We used the Cox regression to calculate the age- and sex-adjusted hazard ratios (HRs) for first hospital admissions due to mental disorders among immigrants from Poland, other East European countries and the FSU aged 25-84 years, who arrived in Sweden after 1944 and lived in Sweden during 1994-2001. We found that both men and women born in Poland (HR=1.43; CI=1.32-1.56), as well as women born in other East European countries (HR=1.15, CI=1.01-1.31) had a higher hazard ratio of being hospitalized due to mental disorders than the Swedish-born

men and women. However, persons born in the FSU, regardless of their sex, did not have a higher hazard ratio than Swedish-born persons (HR=1.09, CI=0.96-1.24).

4.3 STUDY III

Applying Berry's theory of acculturation [76], the respondents were divided into four groups in terms of the extent of their acculturation: Integrated (high-level acculturation into Swedish society/high-level Russian identity), Assimilated (high/low), Separated (low/high), and Marginalized (low/low).

Members of each acculturation group generally held a common opinion about whether to share or not to share their private problems, of any kind, with the persons closest to them. The Integrated respondents were divided into those who would and those who would not share their problems. The Assimilated respondents replied that they would not do so and the Separated respondents that they would. The Marginalized respondents said that they would share, but probably after the problems had been left behind.

According to all respondents, Swedes and Russians have different manners of communication. Swedes were characterized as being more reserved and not accustomed to sharing their problems, whereas Russians were said to be more open and inclined to share their problems. For the sake of convenience, we called these manners of communication "Swedish" and "Russian". Different acculturation groups had different attitudes to these manners of communication. While those with high-level acculturation accepted the Swedish manner of communication, the Separated (low-level acculturation/high-level identity) did not.

When asked the general health question, the respondents with high-level acculturation (Assimilated and Integrated) answered only positively, reporting their health as "good" or "very good". Nobody reported "very poor health" and only respondents with low-level acculturation (Separated and Marginalized) reported "poor" health.

Each acculturation group used a particular way to communicate health in response to the general health question.

Assimilated respondents used two response models when answering the general health question. One of them was a *standardized positive* model, i.e. giving a short and always positive answer without justifying or explaining it. They also used an *embroidered* response model. When communicating their health in this way, the respondents did not give a direct answer and created an ambiguous picture of their health, trying to re-establish or restore a good image after having said something negative. Nevertheless, using either response model, the Assimilated respondents reported their health as "good". However, their answers did not necessarily correspond to their "actual" health.

Separated respondents used an *explicit* response model. They gave a clear picture of their health, reporting all types of health (from "good" to "poor"), depending on their "actual" health. If a respondent was aware of some illnesses/diseases he/she had, he/she reported "poor" or "something in between good and poor" health; if a person was healthy, he/she

reported “good” health. A comprehensive explanation always followed the initial answer. The self-reported health corresponded with the “actual” health among all participants using this response model.

Marginalized respondents used two models: either the *embroidered* one, described above, or a *justifying* response model. When communicating their health in the latter way, these respondents also gave an unclear answer, giving an ambiguous picture of their health. They reported their health somewhat positively at first. They then mentioned different diseases/illnesses they had, but immediately justified having them by saying that such diseases/illnesses were normal for their age, health behavior, etc., and thus they thought positively about their health in spite of it all. The additional information about their “actual” health showed that all the respondents using this response model had several different illnesses/diseases at that time.

Integrated respondents used nearly all of the above-described models when answering the general health question, but their “actual” health did not necessarily correspond to their self-reported health.

These findings suggested that the way in which the immigrants answered the general health question (i.e. communicated health) reflected their preferred manner of communication and, therefore, the extent of their acculturation. This association is presented schematically back in Table 4.

Being highly acculturated into Swedish society and having low-level Russian identity, the Assimilated respondents knew that sharing one’s problems and practising Russian communication was not traditional in Sweden (in their opinion). They did not do so either and gave a reserved *standardized positive* answer when answering the general health question. They also used the *embroidered* response model, but, in either case, they reported their health as “good”, although this did not necessarily correspond to their “actual” health. Thus, it may be assumed that the Assimilated adapted all their answers to the accepted standard or norm in Swedish culture, and we therefore generalized their response models into one: *normalized*.

The Separated respondents, having low-level acculturation but high-level Russian identity, continued exercising the Russian manner of communication, including sharing problems. They used the *explicit* response model when answering the general health question and openly revealed whether or not their health was “poor”, “something in between good and poor”, or “good” depending on their “actual” health.

The Marginalized respondents, although having low-level acculturation as well, had low-level Russian identity and preferred neither the Swedish nor the Russian communication traditions. They reported that they would not share their problems with anyone and, if otherwise, they would share only when the problems were solved. They used both *justifying* and *embroidered* response models, trying to justify their “very good” or embroider their “poor” self-reported health. Consequently, we generalized their response models into one: *implicit*.

The Integrated respondents had both high-level acculturation into Swedish society and high-level Russian identity. Although some of them were willing to share their problems with the persons closest to them and had a positive attitude to the Russian communication tradition, they also knew the Swedish communication traditions. Combining their knowledge of both cultures, they used nearly all response models when answering the general health question; however, they reported their health only as “good” or “very good”, which did not necessarily correspond to their “actual” health.

The summarized findings are shown in Table 8.

Table 8. The summary of findings

Extent of acculturation	Manner of communication	Health communication (answer to the general health question)		“Actual” health status
		Response model	Self-reported health	
Integrated	Swedish and Russian	<i>Normalized</i>	“Good”	Illness/disease (past or present)
		<i>Explicit</i>	“Very good”	No illness/disease
		<i>Implicit</i>	“Good”	Illness/disease (past or present)
Assimilated	Swedish	<i>Normalized</i>	“Good”	Illness/disease (past or present)
Separated	Russian	<i>Explicit</i>	“Good”	No illness/disease
			“Something in between good and poor”, and “Poor”	Illness/disease (past or present)
Marginalized	No preference	<i>Implicit</i>	“Very good”	Illness/disease (past or present)
			“Poor”	Illness/disease (past or present)

4.4 STUDY IV

Study III showed that the extent of acculturation affects the way immigrants communicate their health regardless of their “actual” health status. Therefore, the aim of Study IV was to test the variable *self-reported integration* as an alternative source of information for measuring the extent of acculturation as opposed to the existing methods of measuring the extent of acculturation (uni- and bidimensional). We compared the respondents’ own rating of the extent of their acculturation (i.e., the self-reported integration) with our rating according to the bidimensional model of acculturation. According to this model and as in Study III, the respondents were divided into four acculturation groups: Integrated (high-level acculturation/high-level identity); Assimilated (high/low), Separated (low/high), and Marginalized (low/low). Table 9 summarizes the groups’ main characteristics.

Table 9. Characteristics of the four acculturation groups.

Variable/ Criterion	Integrated	Assimilated	Separated	Marginalized
Acculturation	High	High	Low	Low
Russian identity	High	Low	High	Low
Self-reported integration	Integrated	Integrated	Not integrated	Not integrated
Attitude toward Swedish and Russian cultures	Understand and appreciate both Russian and Swedish cultures	Understand, accept and adapt to Swedish culture totally; - avoid Russian culture (negative attitude)	Do not understand and cannot adapt to Swedish culture (negative attitude); - favor Russian culture	Have a positive attitude toward Swedish culture, but lack a knowledge, understanding and experience of it; - have mixed (mostly negative) feelings about Russian culture
Feeling at home	No/yes	Yes	No	Yes
Communication with the host population	Yes	Yes	No	No
Communication with other Russian-speaking immigrants	Yes	No	Yes	No/Yes
Employment	Yes	Yes/Retired	No/Yes	No/Retired
Swedish language mastery	Good/excellent theoretical, but poorer communicative language	Good	Good/good knowledge, but not comfortable using it/poor	Poor
Time in Sweden (Years, range)	11-22	10-36	3-14	3-16

Self-reported integration corresponded with our classification of respondents according to the extent of their acculturation. All of the respondents defined by us as having low-level acculturation reported that they had not become integrated, and all of those defined by us as having high-level acculturation reported feeling integrated (Table 9). To explore what the respondents meant by “to become integrated”; which criteria they applied when evaluating their own integration; and which determinants, to them, defined integration in general, specific questions were asked. These findings are summarized in Table 10.

Table 10. Respondents' understanding of integration; their self-reported integration criteria, and determinants of integration in general.

Understanding of integration	Integration criteria		General determinants of integration
	Internal (feelings)	Formal (facts)	
To understand, to accept, and to adapt to the host culture	Feelings of understanding, fitting in, adapting or getting used to the host society	Communication with the host population	Communication with the host population
To feel comfortable, calm, good, and familiar in the host society	Feeling comfortable or calm; the feeling of becoming part of the society	Employment	Employment
To feel at home	Feeling at home	Mastery of the Swedish language (except Separated)	Mastery of the Swedish language
To become a Swede (only Assimilated)	Missing Sweden whenever going away; or not feeling nostalgia about the former Soviet Union		One's attachment to the homeland and host country (<i>roots</i>)
	Not feeling discriminated		One's personal motivation to integrate (except Marginalized)
			Conditions in the host country, i.e. multiculturalism/monoculturalism, integration policy, etc. (except Marginalized)

The respondents' self-reported integration criteria were divided into internal and formal ones. Both types of criteria were considered by respondents when estimating their own integration. The internal integration criteria reflected feelings and emotions that respondents felt or did not feel about being in the host country. These criteria corresponded to the immigrants' understanding of integration in general. The formal criteria were measurable facts, the absence of which could be interpreted by the respondents as not being integrated. The formal criteria of self-reported integration corresponded with some of the general determinants of integration or, in other words, with what the respondents thought was required for integration in general (Table 10).

The concept of *roots* (meaning a strong attachment to a country) was mentioned by the respondents (except the Marginalized) among the general determinants of integration. Respondents with high-level acculturation claimed that a person could integrate into the new society only when no roots had been left in the homeland. Assimilated respondents suggested that one should pull out all of one's roots after emigration (stop all communication with relatives and friends left in the homeland and block all the memories of the past), and the Integrated respondents thought it would be easier not to have any roots (such as work or family) to begin with. Separated respondents believed that a person could become integrated in the host society only if he or she would put down new roots there (e.g., build a family with a Swedish partner).

5. DISCUSSION

5.1 MAIN FINDINGS

The general aim of this thesis was to study the self-reported health and its determinants in immigrants from the FSU in Sweden.

Studies I and II showed that while immigrants from the FSU had higher odds of self-reporting poor general health than the Swedish-born host population, they did not have higher odds of reporting poor mental health. This was not true for immigrants from other countries of the former Soviet Bloc (Poland and other East European countries), who had higher odds of self-reporting both poor general and poor mental health than Swedish-born persons. These findings could not be explained by the adjustment for demographic or socioeconomic variables.

Study III focused on the Russian-speaking immigrants from the FSU only and showed that acculturation influenced the way these immigrants communicated their health regardless of their “actual” health status. The more acculturated a respondent was, the more his/her response model to the general health question and the self-reported health corresponded to the response model and self-reported health traditional of the host country, but did not necessarily correspond to the “actual” state of the respondent’s health. Therefore, it is essential to account for acculturation in studies of immigrant health.

Study IV suggested an easy way to account for acculturation, by applying a variable called “self-reported integration”, which might be regarded as a proxy for acculturation. The self-reported integration is determined by the response to the question: “In your opinion, have you become integrated in Sweden?” The findings showed that the answer to this question given by the immigrants corresponded with the researchers’ bidimensional estimation of the immigrants’ extent of acculturation and possibly represented a holistic view of respondents of their acculturation, based on self-evaluation of both internal and formal criteria of integration.

5.1.1 Self-reported health

The findings of increased odds for poor self-reported general health of immigrants from the FSU compared to the host population agreed with the earlier studies. For example, a cross-sectional survey from Israel has shown that immigrants from the former Soviet Union have a 38 percent higher risk of poor self-reported health than the majority population after taking socioeconomic variables into account [130]. In Study I the socioeconomic variables were also accounted for, along with the demographic variables. They were shown to be significant risk-factors for self-reporting of poor health but could not explain the association between being born in the FSU and increased odds for poor self-reported general health.

The findings of significantly increased odds for both poor self-reported general and mental health among immigrants from Poland and other East European countries compared to the host population also agreed with the studies of self-reports and of hospital admissions from Sweden, Britain, and the US and with other cross-sectional and longitudinal studies, as well as with studies on war and political refugees from these countries [23, 131-135].

It has been suggested that poorer health among immigrants from the FSU and other Soviet Bloc countries than among a general host population might be explained by acculturative stress [136, 137], socioeconomic circumstances in the new environment [138], push and pull factors [139], and migration selection [130]. However, since immigrants from the former Soviet Bloc originate from countries where citizens have poorer self-reported general health than citizens in the host country Sweden [13], the migration-import hypothesis is a plausible explanation in the present thesis, particularly in Study I. This hypothesis assumes that health rates in immigrants correspond more closely to those of their country of origin than to those of their adopted country [140]. Yet, this effect tends to wear off with time and the health rates become more like those of the host population (the migration-convergence hypothesis).

The finding that immigrants from the FSU had odds of poor self-reported mental health similar to those of the host population did not agree with studies conducted elsewhere [18, 21, 22, 24]. However, it is difficult to compare our findings with the findings of the studies with different sampling and analysis techniques, as the discrepancy between the results of our and these studies might stem from the difference in the research design, place of the studies, and so on. Many other studies have focused on specific ethnic groups from the FSU (e.g., only Russians or Russian Jews), geographically defined communities, psychiatric patients, or other selected groups that have higher risks of mental disease [18, 21, 22, 41, 101]. In contrast, Study II included immigrants from various FSU republics living anywhere in Sweden. This was ensured by drawing our sample from the national representative sample of permanent Swedish residents recorded in the Register of the Total Population and interviewed in SALLS between 1994 and 2001. However, the sample of the immigrants from the FSU in Sweden was small. Therefore, another explanation to the disagreement of our findings with the studies conducted outside Sweden is plausible. It is possible that the difference between the host countries (e.g., different prevailing migration trends [family reunion, labor migration or asylum seeking], different state socioeconomic situations, migration policies, etc.) might explain why the health status among immigrants from the FSU residing in different host countries varies.

Study II showed that immigrants from the former Soviet Bloc are not a homogeneous group in terms of self-reported mental health. For example, immigrants from Poland had higher odds of reporting both psychiatric illness and psychosomatic complaints than the Swedish-born respondents, but immigrants from the FSU did not. This could be explained by the fact that persons born in the FSU are inclined to hide their private feelings [141], to be ashamed of their physical and psychological problems, and tend not to share them with others [96]. It is also possible that persons born in the FSU are afraid of stigmatization, have a more negative attitude toward mental disorders and their treatments (as a legacy of the Soviet abuse of mental diagnoses and medical services for political purposes in the past) and are inclined not to report poor mental health or seek help for mental disorders. Hitch and Rack [23] give an alternative explanation, comparing the mental health of

immigrants from Poland and one of the FSU countries, Ukraine, in Great Britain. The authors suggest that weaker mutual support in Polish communities than in Ukrainian ones and social seclusion from the host population and fellow-nationals might partly explain the higher incidence of first admissions to psychiatric hospitals among Polish immigrants than among Ukrainian immigrants. However, it is also possible, that immigrants from the FSU initially have better mental health than immigrants from other former Soviet Bloc countries. According to the WHO Health for All Database in 2002, the prevalence of mental disorders in the FSU (2.8%) was lower than in the former Czechoslovakia (3.5%) and Poland (3.2%).

5.1.2 Acculturation and the self-reported health

While a considerable number of studies have demonstrated that acculturation influences the health of immigrants [136, 142-146], Study III suggested that acculturation also affects the way immigrants communicate their health regardless of their “actual” health status. The self-reported health of Russian-speaking immigrants in Sweden (rated from “very good” to “poor”) was associated with their choice of response models to the general health question (*explicit, normalized, or implicit*). This choice was determined by the extent of their acculturation (Integrated, Assimilated, Separated, or Marginalized) and consequent preference for manner of communication (Swedish or Russian).

The influence of the acculturation process on the choice of manner of communication, and therefore health communication, may be explained by theories of culture and communication. According to these, acculturation can be characterized as a process of assimilating a host population’s social means [147]. It revolves directly or indirectly around communication competence [147]. Therefore, the more culturally competent, i.e., acculturated, the more capable a person is of using the host culture’s social means, referred to here as communication traditions. This affects one’s manner of communication in general, including, presumably, communication of health.

The shift from one manner of communication to another may be explained by Berry’s theory of behavioral shifts [76]. According to this theory, Integrated immigrants usually apply behaviors of both the culture of origin and the host culture and the Assimilated adopt the behaviors of the host society and shed features of their culture of origin. In contrast, Separated immigrants reaffirm and hold on to the earlier behavioral repertoire. And the Marginalized live “between the margins of two different cultural traditions” [148]. In Study III we saw the same pattern in the respondents’ preference of manners of communication, and, consequently, communication of health, depending on the extent of their acculturation. It has been suggested that the self-reported health integrates a cultural process of identity formation [27]. Therefore, acculturation, directly affecting one’s cultural identity (according to the bidimensional model of acculturation by Berry [79]) may also influence the way one talks about one’s own health, i.e. communicates health.

According to the findings of Study III, the communication of health among immigrants is a culturally rooted process, which is defined by the communication traditions of one’s culture of origin and/or the surrounding culture. Which one dominates depends on the immigrant’s level of acculturation. Being Integrated, one can use the communication traditions of either culture or of both, while the Assimilated adopt the communication

traditions of the host culture, and the Separated retain the communication traditions of the culture of origin.

Baron-Epel and colleagues [99] described a particular effect of culture on health communication. Having found that the Arab population in Israel has better self-reported health than the Israelis, they suggested that it may be more common to express ill health and to share personal feelings with strangers (e.g., the interviewers) in the Jewish community than in the Arab population, thus resulting in better self-reported health in the Arab population. Similarly, Swedish and Russian cultures have different communication traditions, including attitudes toward sharing problems, which affected the respondents' health communication in the present study. The respondents in Study III suggested that it is more common to share personal feelings among Russians than among Swedes. Moreover, Swedes are known to largely overrate their health compared to people in other European countries [149]. This explains why in Study III, the respondents with high-level acculturation, i.e. having adopted the host culture's health communication model, presented only positive pictures of their health, reporting it as "good", which did not necessarily correspond to their "actual" health.

These findings support the statement that "the self-reports are the outcomes of complex interactions and context and not the simple unalloyed reports of internal states" [94]. Acculturation is one of a number of factors that might affect the process of answering the general health question.

5.1.3 Measuring acculturation

The findings of Study III suggested that it is essential to account for acculturation in the studies of immigrant health, particularly, the self-reported health. To account for acculturation, one needs to measure it at first.

The unidimensional approach offers a "shortcut" and, instead of measuring acculturation, it suggests utilizing some other variables as proxies for acculturation. Migration-related variables, according to the unidimensional approach, are suitable for this purpose. In accordance with this approach, we included two such proxies for acculturation in the analyses in Studies I and II, namely *years spent in Sweden* and *language spoken at home*. However, the adjustment for these variables did not influence the self-reported general health and the odds for self-reported psychiatric illness among immigrants from the FSU and other countries of the former Soviet Bloc. In contrast, Study III showed that acculturation affects the self-reporting of health. This discrepancy might be explained by the fact that the migration-related variables used for the adjustment in Studies I and II were the so-called unidimensional proxies for acculturation. Such proxies for acculturation might give an incomplete rendering of the acculturation process [74], reflecting, as they do, only one of its many aspects. Their limitation can be illustrated by the findings of the analyses of the qualitative data in Studies III and IV, showing that immigrants do not necessarily become acculturated with time and those who have spent as few as 3 years or as many as 16 years in Sweden could be equally unacculturated. Also, both people who migrated as children and those who did so at a mature age could be acculturated. Thus, variables such as *years spent in the host country* probably should not be used as proxies for acculturation, but might rather be used for indirect controlling for the reasons of

immigration among the studied population. Study IV also illustrated the limitation of the application of such variable as *language spoken at home* as a proxy for acculturation. The findings showed that the mastery of the language of the host country does not necessarily mean that an immigrant is acculturated in the host society. For example, the majority of the Separated respondents (low-level acculturation/high-level identity) had a good knowledge of Swedish (self-reported), and yet did not feel integrated due to the lack of communication with Swedes, difficulties in finding a job, or other reasons. Moreover, language mastery was a complicated criterion because the majority of the respondents were inclined to separate a theoretical knowledge of language from their communicative abilities.

In contrast, the self-reported integration tested in Study IV accounted for several aspects of acculturation by representing a holistic view of a respondent concerning his or her acculturation based on self-evaluation of both internal and formal criteria of integration (Table 10). Accounting for both internal and formal criteria is important when assessing acculturation. Although the respondents in Study IV emphasized the importance of the formal criteria for integration, it did not necessarily mean that by merely satisfying these criteria (e.g., having a job or mastering the language), an immigrant would feel integrated. The latter was also reported by Aroian [80] in a qualitative study of psychological adaptation to resettlement among Polish immigrants. Some of the immigrants, although having achieved occupational stability and linguistic adequacy, reported that they did not feel at home. They identified unresolved grief, such as missing the homeland, and the feeling of being displaced or between two worlds. Dealing with such feelings was presented by the respondents in Study IV as the concept of *roots*. Pulling out one's roots, not leaving them implanted in the homeland, or putting down roots anew in the host country - these were the ways of resolving the grief concerning what was left behind. These processes, and thereby resolving the grief, were cited as being important for integration in general. Other general determinants of integration reported by the respondents corresponded with the formal criteria of integration (Table 10). Aroian [80] refers to these criteria as resettlement demands and Kim [150] calls them "crucial for acculturation and development of intercultural identity." Thus, by resolving the grief concerning the homeland and satisfying the formal criteria of integration, one might become acculturated. For the respondents in Study IV, becoming acculturated or integrated generally meant the same as what was referred to as the internal criteria of self-reported integration (Table 10). Therefore, it is assumed that the end point of acculturation is the fulfillment of internal criteria of integration achieved by mastering the formal criteria and resolving the grief.

Thus, measuring the extent of acculturation should include an assessment of how well the immigrants have dealt with the formal integration criteria, whether they have resolved their grief concerning attachments left behind in the homeland, and whether their internal criteria of integration have been satisfied. It is not possible to do this using a unidimensional approach with a single variable as a proxy for acculturation. The bidimensional approach allows such an assessment, but it is demanding and time- and resource-consuming due to a complicated analysis of multiple acculturation variables. However, using the self-reported integration (the immigrants' self-assessment of their mastery of the formal criteria of integration, resolution of the grief, and satisfaction of the internal criteria), the assessment would be both informative and easy to execute.

5.2 LIMITATIONS AND STRENGTHS

5.2.1 Quantitative Studies I and II

5.2.1.1 Limitations

The limitations of the cross-sectional design of Studies I and II prevented us from tracing any causal pathways between the migration of people from the former Soviet Bloc, particularly, the FSU, and self-reported health, and we could only speculate about the determining mechanisms behind the reporting of poor general or mental health.

The sample size, especially of immigrants from the FSU, was small and possibly affected the significance of the analysis in Study II. However, in spite of its small size, the sample included immigrants from the various FSU republics, and the proportion of respondents was representative of all 25–84-year-old FSU immigrants who arrived in Sweden after 1944. The weighted mean population from our sample was similar to the average number of persons of the same age and country of birth living in Sweden registered by Statistics Sweden (data are presented in Study I, Table 1).

Another limitation of the quantitative studies was that the immigrant groups focused on, probably lacked homogeneity not only between themselves with regard to self-reported general and mental health and other characteristics (including historical background, religion, language, and geography), but also within themselves. For example, the three Baltic FSU republics have joined the European Union and differ from the other FSU republics in many other respects. Therefore, it is difficult to say whether our findings are fully applicable to immigrants from these now independent countries when considered separately from the whole FSU. Consequently, it is a limitation that immigrants with different backgrounds had to be combined into larger categories (“Other East European countries” and “The Former Soviet Union”) to achieve sufficient statistical power and to conduct the analyses in Studies I and II.

Another limitation was that the questionnaire was not specifically designed for the Studies I and II and we had to use the available data rather than collect our own. Additionally, it was not possible to perform a clinical evaluation to test the reliability of the instruments because the design of the national survey does not include a clinical examination or a clinical instrument.

A lack of data on alcohol consumption was also a limitation, especially for a study on self-reported mental health. However, adjustments of outcomes were made for smoking, demographic and socioeconomic variables, all of which are known to be associated with alcohol abuse [151-153].

The fact that the *psychiatric illness* variable was self-reported and not clinically validated was the most important limitation of Study II. It is likely that the prevalence of poor self-reported mental health is underestimated in the present study since the respondents are generally probably less willing to report a psychiatric disorder than a somatic one. Nevertheless, the additional testing of this variable by performing an analysis of the

hospital admission data for mental disorders in the same population supported the results of Study II. This confirmed our assumption that self-reported mental health, particularly, the self-reported psychiatric illness, may be a good indicator of mental health. Moreover, self-reported mental health is associated with mortality as self-reported general health is [154, 155] and we therefore argue that self-reported mental health is a valuable indicator in population health monitoring.

5.2.1.2 Strengths

The strengths of the extensive SALLS data balanced the limitations. Data were nearly 100% complete for all chosen variables. The high response rate (80%) meant that there was a minimal risk of selection bias. Normally, the non-response rate in SALLS is about 20%, mostly due to refusal to take part. In the earlier samples, it was found that those who refused to participate (2/3 of non-respondents) had the same mortality rate as respondents. Statistics Sweden, which performs SALLS annually, has a long tradition of carrying out national surveys and analyzing the collected data. The data collected by Statistics Sweden are regularly used in multiple studies and for the national statistical reports. The reliability of the survey questions was tested in other contexts in Swedish [33] and Latin American [34] subsamples and was found to be high. A sample of variables has been evaluated in several re-interview studies and showed good stability over time [111].

5.2.2 Qualitative Studies III and IV

5.2.2.1 Limitations

The fact that the same researcher (I, as the first author) who conducted and participated in the analysis of the in-depth interviews (main study) also conducted and analyzed the mini-interviews by telephone (retesting of findings) was one of the limitations of the qualitative studies.

Another possible limitation was that the studied sample included Russian-speaking immigrants without regard to their country of birth (all countries were within the borders of the FSU) or nationality, on the assumption that all native Russian-speakers are carriers of the Russian culture, identifying Russia as their “historical” or “national” homeland [156]. However, we tested this assumption by asking the respondents to name the country in which they felt at home. Our assumption was confirmed by the finding that not all respondents who named Russia as their homeland were born there or were Russian by nationality.

The fact that the “actual” health of respondents was self-reported in Study III was also a limitation. It would be advisable in further studies to compare the respondents’ self-reported health with their actual health evaluated by a physician.

Moreover, due to the small sample and its limitation to one geographical area and immigrant group, the findings of the qualitative studies should be considered cautiously and tested in a larger sample and other settings. However, the sample size is of less importance for generalization in qualitative research. It is the quality of sampling decisions ensuring the required variation of respondents’ characteristics and answers which should

be guaranteed. In Studies III and IV, the sampling procedure was set up in accordance with the aim of theoretical exploration [109] and included theoretical and strategic sampling.

5.2.2.2 Strengths

The strength of these studies was that several techniques were applied to ensure their scientific rigor, namely, the credibility, dependability, confirmability, and transferability of the findings. These techniques are described earlier under the subheading “Scientific rigor in qualitative research” in the Methods section (3.3.2) of this thesis.

5.3 CONCLUSIONS AND IMPLEMENTATION

Despite the above-mentioned limitations, these studies can be said to be an important innovative contribution to the research on acculturation, self-reported health, and health communication. In the age of globalization, when the total immigrant population is estimated to range between 185 and 192 million people [157], studies on migration and health are of particular importance.

Migration is a dynamic process which begins the moment that the decision to leave one’s country of birth is made [158] and is not completed by the arrival of an individual in a host country [159]. It is both a complex and stressful process, often induced by economic or political factors in the country of birth. It entails dealing with environmental, psychological, and sociological changes that may put at risk one’s physical and mental health [136].

A large body of studies have investigated various aspects of health in different immigrant groups [35, 160, 161] and it has often been found that immigrants have poorer health than the host population. For example, immigrants from the FSU in different countries worldwide demonstrate more extensive health and social service utilization [25], an increased risk of cardiovascular disease [162], hypertension, and angina pectoris [163], a higher prevalence of psychological distress [75], somatization [38], and higher levels of depressive symptoms [164] than the host population. The above is also true for immigrants from other countries of the former Soviet Bloc [80, 142, 158].

Previous research has revealed an association between migration and poor health status, even after adjusting for social position [165, 166], thus emphasizing the independent effect of migration, i.e. of negative factors related to the migration process as a causal factor for poor health among immigrants [139]. The contemporary studies emphasize the association between the immigrant’s country of birth and poor health even after adjusting for age [167] and socioeconomic status [168, 169].

Similarly, in the present thesis we found that being born in the FSU was associated with poorer self-reported general health than among the Swedish-born host population, which could not be explained by adjustments for demographic or socioeconomic variables. However, immigrants from the FSU had similar odds of reporting poor mental health as

the Swedish-born host population. Moreover, it was found that acculturation defined health communication among Russian-speaking immigrants from the FSU in Sweden. The more acculturated a respondent was, the more his/her response model to the general health question and self-reported health corresponded to the ones traditional of the host country, but did not necessarily correspond to the “actual” state of the respondent’s health.

This calls for attention when designing studies and interventions targeted at this population group. Self-reported health is widely used in medical and related research practice nowadays and underestimating the influence of culture and acculturation on health communication might have negative consequences in the planning, implementation, and evaluation of health care services. Therefore, the affect of acculturation on the self-reporting of the health of immigrants should be acknowledged. Self-reported integration might be an informative variable for measuring the extent of acculturation. This might have implications in immigrant research, but its use as a proxy for acculturation should be tested primarily in other settings and in a quantitative analysis.

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