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Study of Health in Pomerania (SHIP): a health examination survey in an east German region: objectives and design

Summary

Objectives: The reason for the Study of Health in Pomerania (SHIP) is the lack of epidemiological studies with a broad range of health indicators. Furthermore, in Germany there is a need for studies that take into account the particular situation of life after the reunification. One objective of SHIP is to provide prevalence estimates on a broad range of diseases, risk and health factors for a defined region in the former GDR.

Methods: A sample of 7008 women and men aged 20 to 79 years in a north-east region of Germany, 4900 expected participants. The sample was drawn in two steps: First, 32 communities in the region were selected. Second, within the communities a simple random sample was drawn from residence registries, stratified by gender and age. The data collection and instruments include four parts: oral health examination, medical examination, health-related interview, and a health- and risk-factor-related questionnaire. The oral health examination includes the teeth, periodontium, oral mucosa, craniomandibular system, and prosthodontics. The medical examination

includes blood pressure measurements, electrocardiography, echocardiography, carotid, thyroid and liver ultrasounds, neurological screening, blood and urine sampling. The computer-aided health-related interview includes cardiovascular symptoms, utilisation of medical services, health-related behaviours, and socioeconomic variables. The self-administered questionnaire comprises housing conditions, social network, work conditions, subjective well-being and individual consequences from the German reunification.

Key-Words: Health examination survey – Germany – Prevalence – Oral health – Carotid arteries ultrasound – Echocardiography.

The research work reported is funded by grants from the German Federal Ministry for Education and Research (BMBF, grant no. 01ZZ96030), of the Ministry for Education, Research and Cultural Affairs and the Ministry for Social Affairs of the State of Mecklenburg-West Pomerania as well as the Municipal Hospital of Stralsund GmbH.

Background of the Study of Health in Pomerania (SHIP) is, first, the need for population-based health surveys with a broad range of health and quality of life indicators. Particularly in Germany, most population studies focus on single diseases and related risk factors, mostly cardiovascular disease^{1,2}. There is a lack of epidemiological studies with a broad range of health indicators that allows for extensive analysis of comorbidity and the study of combined risk factors for different health problems.

Second, there is a need for studies that take into account the specific social situation of Germany after the reunification and contribute to explaining still existing disparities between the health of former East and West Germans. Since 1989, the Eastern part of Germany has been in a major social transition process including economic, political and social shift, and the change of social attitudes and norms. Through this process, morbidity and mortality have been affected³. Due to the reunification of Germany, former East Germans faced profound changes in their living situation, the health insurance system and health services. Although differences in the health of former East and West Germany seem to narrow, there are still disparities in the prevalence rates of several health disturbances, including cardiovascular and neurological diseases, allergies, and subjective health⁴⁻⁹. Differences are usually attributed to differences in psychosocial and environmental factors, in health behaviours or in medical treatment. However, these explanations are usually not based on a detailed analysis of the different determinants.

Third, for a community medicine approach which is being developed in North-East Germany, population health data is needed to serve as a basis for multi-disciplinary studies including follow-ups and interventions within a community medicine research network. This network involves different medical disciplines, such as physiology, genetics, immunology, cardiology, neurology, psychiatry, environmental and occupational medicine, different disciplines of dental health (periodontology, orthodontics, restorative dentistry, gnathology), and other disciplines such as psychology, legal sciences, and biochemics¹⁰. One goal of the community research network is to overcome limitations of single-discipline studies and to examine health in a multidisciplinary perspective.

Objectives

SHIP is a population-based study in West Pomerania, a north-east region of Germany (Fig. 1). The first objective of the study is to provide prevalence estimates on a broad range of diseases and risk factors for a defined area. The second objective is to establish quality-controlled baseline data about population health in the region, representative for three former districts and the cities of Greifswald, Stralsund, and Anklam, and to provide information about the most prevalent diseases and their potential predictors for further research projects that will focus on specified diseases, risk and health factors in cohort, intervention or case-control studies. Thus, the overall objective is to provide epidemiological results. In order to get a comprehensive picture

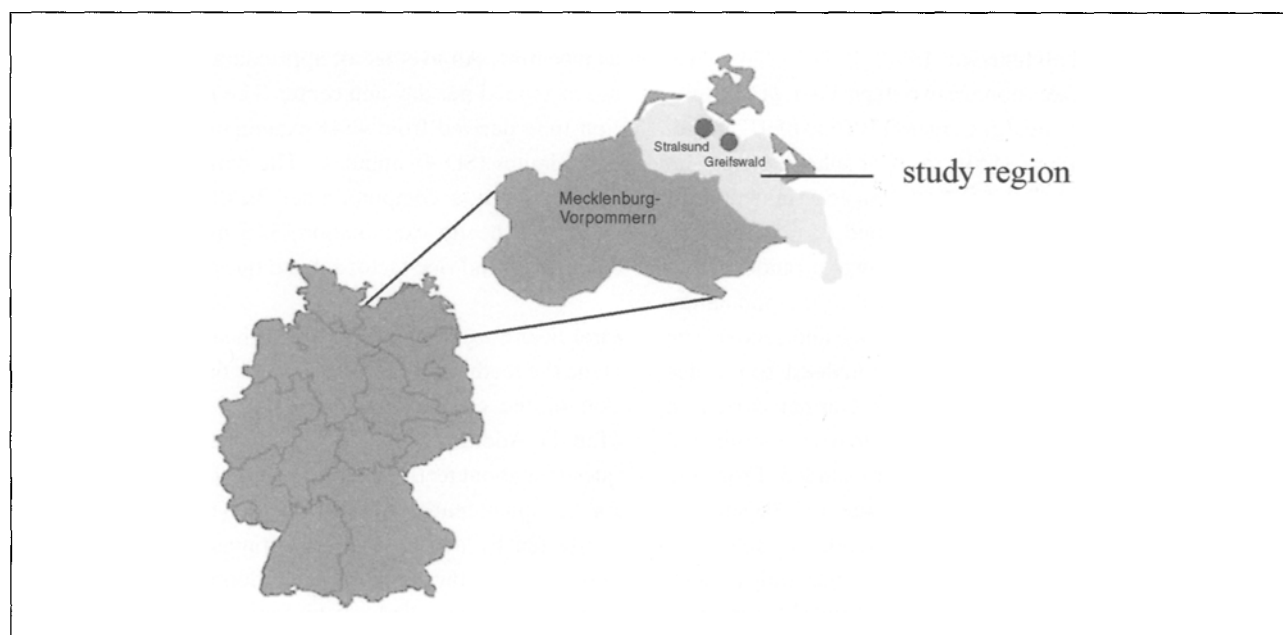


Figure 1 Study region in Germany

of diseases, the results will be accomplished by further data sets, such as mortality data and hospital data on morbidity. In addition, we expect some experience for practical interests in community medicine, such as how to do intervention studies in a community health center.

In detail, the aims are: prevalence estimates of diseases in a region of West Pomerania including medical, dental and subjective health, of biological, environmental, social, and behaviour-related risk factors and resources for health, analysis of the frequency and kind of utilisation of medical care, preventive health check-ups, analysis of multiple risk factors, identification of subgroups in the population with particularly high health disorder rates or a high number of risk factors for selection of subsamples for additional case-control, cohort or intervention studies, a specific health profile for the study area.

Methods

Sample and study area

A sample of 7008 women and men aged 20 to 79 years was drawn in the cities of Greifswald, Stralsund and Anklam and 29 communities in the surrounding region which is part of West Pomerania (2024 km²) and is the most north-easterly region of Germany, adjacent to the Baltic Sea in the north and to the Polish border in the east. West Pomerania is the north-eastern part of Mecklenburg-West Pomerania, one of the 16 federal German states. Mecklenburg-West Pomerania is, with 79 inhabitants/km², the state with the lowest population density in Germany (for comparison: Germany has 229 inhabitants/km²).¹¹

The sample selection was done in two steps. First, of the three districts in the region, the three cities (17076 to 65977 inhabitants) and the 12 towns (1516 to 3044 inhabitants) were selected, and of the small towns (less than 1500 inhabitants), 17 out of 97 were drawn at random. Second, from each of the selected communities, subjects were drawn at random from official inhabitant data files, proportional to the population size of each community and stratified by age and gender. The addresses include those living institutionalised too. Since there was just a proportion of 1.6% Non-German citizens in the population only individuals with German citizenship and main residency in the study area were included. From the entire study population of 212157 inhabitants, 7008 subjects were sampled, with 292 persons of each gender in each of the 12 five-year age strata. Subjects who leave the study area by migration or who die are lost for the sample. In order to minimize drop-outs by migration, subjects were selected in two waves. The collection of the personal data was supported

by the residents' registration offices. The sampling procedure follows strict data security protocols. Selected persons receive a maximum of three written invitations with detailed information about the examination. The letters are followed by a telephone call in the case of non-response or by home visits if non-responders cannot be contacted by phone. A response rate of 70% is intended. Given this, the sample is 2.15% of the population in the region in the age of 20 to 79 years. The information about non-responders includes age, gender, and the reason for not taking part.

Data collection procedure and instrumentation

The data collection instruments and examination procedures were developed in collaboration with local, national, and international experts and tested during three pilot phases. During the first pilot (n = 144) the medical and dental examination procedures were tested and the duration of the individual parts was monitored. The second pilot (n = 54) was specifically designed to test the sampling procedure. In the third pilot (n = 49), the finalised medical and dental examination procedures, the interview, and questionnaire were tested. Additionally, the best sequence to administer the study parts to participants and the logistics of the examination procedure was tested.

Data collection started in October 1997 and will last until 2001. Data is collected in two medical examination centers specifically established for the study. One center is located in the University of Greifswald Hospital, the other one is located in the city of Stralsund as part of the municipal hospital. The participants are offered free transportation to the centers from their homes on request, a meal and 15 EURO as incentive. An average of approximately four individuals are examined per day and center. The mean total examination time derived from 4141 examinations done to date is 219 minutes (SD 41 minutes). The data collection includes four parts: 1. a computer-aided health-related interview, 2. an oral health examination, 3. a medical examination, 4. a health- and risk-factor-related questionnaire.

Oral health examination: The oral health examinations include the teeth, the periodontium, the oral mucosa, the function of the craniomandibular system, and prosthodontics (Tab. 1). Additionally, an online interview is conducted with questions about teeth cleaning habits and knowledge relevant for the maintenance of oral health. The examinations are conducted by dentists who are trained in cariology, periodontology, orthodontics, prosthodontics, and gnathology. The findings are called out by the dentist and are entered during the examination into a specifically developed data entry program by a trained dental assistant.

Oral health component	Parameters
<ul style="list-style-type: none"> caries dental crown caries dental root caries 	<ul style="list-style-type: none"> Decayed, Missed, Filled Teeth (DMF/T) Decayed, Missed, Filled Surfaces (DMF/S) Root Caries Index (RCI)
<ul style="list-style-type: none"> periodontium 	<ul style="list-style-type: none"> Plaque Index, Bleeding Index, attachment loss, pocket depth Community Periodontal Index (CPI)
<ul style="list-style-type: none"> oral mucosa 	<ul style="list-style-type: none"> pathological findings
<ul style="list-style-type: none"> function of craniomandibular system 	<ul style="list-style-type: none"> Tooth Wear Index¹² Dysfunction Index¹³ Classification of dynamic occlusion
<ul style="list-style-type: none"> orthodontics 	<ul style="list-style-type: none"> alignment and occlusion of teeth
<ul style="list-style-type: none"> prosthodontics 	<ul style="list-style-type: none"> removable and non-removable dentures, constructions, and materials

Table 1 Major selected oral health parameters

Medical examination: The waist-to-hip ratio as well as the body mass index are determined on grounds of scales as part of the medical examination (cf Tab. 2 for the instruments). Blood pressure and heart rate are measured after a five-minute rest period by the OMRON HEM705CP system that meets the Association for the Advancement of Medical Instrumentation and the British Hypertension Society criteria to be applied in clinical trials¹⁴. Electrocardiograms (ECG) are recorded on flash-cards by an ESAOTE Personal 120LD system. An immediate ECG-diagnosis report is printed by the device integrated Modular ECG Analysis System (MEANS) algorithm¹⁵. The ESAOTE CARDIObase analytical software package is used to export and to analyse the ECG recordings in cooperation with the Institute of Medical Informatics at the University of Rotterdam by special computer programmes to encode them according to the Minnesota coding^{16,17}.

Echocardiography is performed in participants aged 45 to 79. The Vingmed CFM 800A (3.5 MHz probe) system is used. The echocardiography protocol incorporates standard echocardiographic techniques. Structural parameters to be studied include left ventricular wall and chambers dimensions, which are used to calculate the left ventricular mass.

Cardiac functional data will be derived from measurements of systolic performance such as fractional shortening and from Doppler data describing valve function. M-Mode images of the left ventricle at papillary level and the aortic valve with left atrium from the parasternal long axis position are recorded by the ImageP2/ULTRAFRAME system and stored on CD-ROM to be processed in the reading unit of the study.

Carotid arteries ultrasound measurement is carried out in 45 to 79 year old participants. A DIASONIC Masters (5 MHz probe) system is utilised for B-mode real-time ultrasound^{18–21}. Pictures are recorded on video tapes. The images of the common carotid artery are recorded by the ImageP2/ULTRAFRAME system and stored on CD-ROM to be processed in the reading unit. Analyses are based on the mean intima-media thickness of the far wall in a 1 cm segment of the common carotid artery proximal to the dilation of the carotid bulb, similar to protocols used in other studies, e.g., the Atherosclerosis Risk In Communities (ARIC) study²². Ultrasound is also used to assess thyroid size through thyroid volumetry and to determine diseases of the liver (fatty, engorged, hobnail liver) and of the gallbladder (cholecystolithiasis, cholecystectomy). The ultrasound

Examination	Parameters	Instruments
somatometry	waist-to-hip ratio, body mass index	Soehnle S20 Automatic Scales Soehnle Digital Body Height System
blood pressure measurements	systolic, diastolic blood pressure and heart rate	HEM705CP (OMRON Healthcare Inc., Vernon Hills, IL)
electrocardiography	parameters according to Minnesota-Code, MEANS	recording by ESAOTE Personal 120LD, analysis by MEANS
echocardiography	left ventricular mass, aortic, mitral valve function	Vingmed CFM 800 A (3.5 MHz probe) (GE Ultrasound, West Milwaukee, WI)
carotid ultrasound	intima-media thickness, plaques, stenosis	DIASONIC Masters (5 MHz probe)
thyroid ultrasound	thyroid size, thyroid nodules	SONOTRON Masters (5 MHz probe)
abdomen ultrasound	liverishness, cholecystolithiasis	Vingmed CFM 800 A (3.5 MHz probe)
neurological screening	neurological deficits	UPDRS (23), CGI (24)

Table 2 Medical examinations

Samples	Analytes
<i>Blood sample</i> blood cell counts blood clotting factors serum electrolytes serum lipids serum proteins, intermediates, hormones and enzymes immunological parameters	RBC, WBC, PLT, HCT, Hb, MCV, MCHC fibrinogen ²⁵ , Quick-test, PTT sodium, potassium, magnesium, calcium total cholesterol, HDL-cholesterol, LDL-cholesterol, triglycerides ApoA1, ApoB, Lipo(a), creatinine, lipase, HbA1c, CDT, ferritin, TSH, fT3, fT4, TPO-AK, ALAT, ASAT, GGT, uric acid antibodies to lyme disease, diphtheria, hepatitis B/C, toxoplasmosis, tetanus, rubella
<i>Spontaneous urine sample</i> standard lab protocol special anion/cation parameters	glucosuria, proteinuria, haematuria, ketonuria, nitrituria, urine creatinine, urine albumine urine iodide-, thiocyanate-, nitrate-ions

Table 3 Blood and spontaneous urine sample laboratory diagnosis

scanning procedure and the reading process are done by trained and certified raters including physicians, nurses, and technical assistants. All ultrasound measurements are based on the same standardised scanning protocol in the two examination centers, and a standardised central reading of scans. Neurological symptom screening is used to detect neurological deficits caused by common neurological disorders, e.g. stroke, parkinsonism. It is administered to persons aged 60 to 79 years. In the screening protocol, the Unified Parkinson's Disease Rating Scale (UPDRS)²³ and the Clinical Global Impressions Scale (CGI)²⁴ are included. All examination protocols are standardised and defined in a manual of operation.

Blood samples of 48 ml are drawn from the cubital vein in supine position. Blood cell counts, electrolytes, lipids, enzymes, hormones and intermediates, blood clotting parameters as well as immunological parameters are analysed (Tab. 3). A sample of spontaneous urine of at least 14 ml is collected for urine-protein, -glucose, and -nitrite status. The handling of the samples in the two medical examination

centers as well as in the diagnostic laboratories is predefined in the manual of operation including pre-analytical and analytical procedures of the study.

Computer-aided health-related interview: An online interview is administered by trained and certified interviewers. The main purpose of the questions is first to obtain valid sociodemographic and socioeconomic data that takes into account the specific situation in the former East Germany (Tab. 4). A second purpose is to obtain subjective health data (e.g., diagnosed diseases, use of medication) for validation of the medical examination data and to assess those diseases that could not be included in the medical examinations. Additionally, the questions cover a wide range of risk factors for disease (e.g., health-related behaviours, work conditions, diseases in the family). Furthermore, the screening for cognitive impairment provides a criterion for identifying individuals that might not be able to appropriately answer interview and questionnaire questions. Of these subjects, oral health and medical examination data

Parameter	Instruments
Sociodemographics: education, employment status, partner education and employment	Demographic standards for Germany (Statistisches Bundesamt)
Angina pectoris, heart attacks, hypertension, stroke, restless legs	Rose questionnaire for angina pectoris ²⁶
Chronic diseases, diabetes, women's health, and other diseases	Newly developed, comparable with e.g. MONICA study
Utilisation of medical services: hospital stays, doctor visits	Newly developed
Use of therapeutic drugs during the last seven days	Schwabe ²⁷
Health-related behaviours: Alcohol use	Beverage-specific use of alcohol during the past weekend and the past working day
Nicotine dependence	Fagerström Test of Nicotine Dependence ^{28,29}
Nutrition habits	Food frequency list ³⁰
Alcohol abuse screening	Lübeck Alcohol Dependence and Abuse Screening Test ³¹
Workplace conditions: exposure to noise, vibration, radiation, heavy lifting	Newly developed
Diseases of parents, siblings and close family members	Newly developed
Cognitive impairment	Mini Mental State Examination ³²
Oral health: satisfaction with oral health, utilization of dental services, oral hygiene	German national oral health survey ^{33,34}

Table 4 Major selected areas of the interview

Parameter	Instrumentation
Housing conditions: noise, humidity in walls, allergenic material	Keil et al. ³⁶
Social network	Social Network Index ^{37,38}
Job strain (job demand and decision latitude)	Short Form Karasek Questionnaire ³⁹
Victim of criminal offence	Bilsky et al. ⁴⁰
Physical and mental health summary scales	SF-12 ⁴¹
Psychiatric screening	CID-S ⁴²
Psychological and physical complaints	Complaints Schedule (Von Zerssen) ⁴³
Beverage-specific quantity and frequency of recent alcohol drinking	German National Survey on psychotropic substance use ⁴⁴
Readiness to change alcohol consumption, smoking, eating habits, and exercise	German version of the Readiness to Change Questionnaire ⁴⁵
German reunification: changes in personal, financial and professional situation since 1991	Newly developed

Table 5 Major areas of the self-applied questionnaire

will be used. Their interview as well as questionnaire data will be compared with those of the age-matched cognitive unimpaired subjects. Additionally, an oral health interview is included.

Questionnaire: The main purpose of the self-applied questionnaire is to assess risk factors and resources for health in living and working conditions, and, to obtain information about subjective and mental health status. Additionally, questions about the readiness to change health-related behaviours are included. These questions follow the trans-theoretical model of behaviour change³⁵. Furthermore, questions about changes in the personal, financial, and professional situation due to the German reunification will allow for analysis of health problems related to recent changes in the political situation in Germany (Tab. 5). The questionnaire is assisted, if necessary, by trained interviewers.

Quality control of the data

One emphasis of the study is to ensure good data quality by frequent training and certification of interviewers, readers and physicians, and by continuous quality monitoring. The data quality is summarised in tri- to bi-annual reports and monitored by an external data safety and monitoring committee. The quality control is provided in the following main six areas (Tab. 6):

- The repeatability of the physical examination results and that different examiners follow identical protocols that result in identical diagnoses for the medical and dental exams and for the reading of the image data is ensured. After training and certification, the examining dentists fulfill a gold standard in diagnostics defined by examination results of the most experienced observers. During the data collection period, inter-rater-reliabilities of diagnostics are determined every six months (examining

Purpose	Method
Reliability of medical and dental examination results: repeatability, identical protocols and identical diagnoses for different observers, reliability of readings of image data	Training and certification of medical personnel specifically for the study, intra- and inter-reader and -observer testing
Ensure reliability of laboratory results: consistent handling of blood and urine samples by different laboratories, identical analysis procedures and results	Standard sample exchange, tests according to Institute of the Standardisation and Documentation in the medical laboratory (http://www.uni-duesseldorf.de/www/INSTAND/), blood phantom sample
Avoid bias caused by inconsistencies in functioning of equipment	Phantom for ultrasound measurements, adjusted weights for weight measurement system, standard length for height measurement system, calibration procedures for blood pressure measurement
Identify and correct data entry mistakes	Double entry of data
Consistent and errorfree online interview	Comparison of audiotape recordings of the interview with data entered (10% sample), interviewer training and certification
Avoid missing values in questionnaire	Detailed instruction, check for missing values, personal assistance for filling out the questionnaire

Table 6 Quality control of data collection

dentists – experienced dentists) on grounds of individuals examined other than in the study, intraoral photographs (mucosa, dental root caries), and dentition models (orthodontics). A paper about the design and quality control of the dental part of the study is in preparation. With respect to ultrasound images, all observers and readers have to pass semi-annual certification procedures. Variability within and between the observers and readers is measured by mean differences (% mean bias) and the intra-class correlation coefficient (ICC). The results have to meet the following standards: % mean bias < 5%, 2 SD % mean bias < 20%, and ICC > 0.85, respectively.

- To ensure consistent handling of the blood and urine samples by different personnel and different laboratories, identical analysis procedures are used and results of analytes compared.
- To avoid bias that could be caused by technical inconsistencies of the equipment, a continuous check of the medical equipment is done to monitor any alterations of the equipment configuration that might distort the measurement. Adjusted weights for the scales and a height standard mark for the height measuring system are used for a daily quality control. For the blood pressure measurement instrument, a quality control protocol has to be passed once a week to check the performance of the equipment. To ensure the ultrasound image quality, the probe and system performance is checked with the GAMMEX RMI tissue mimicking phantoms.
- To identify and correct data entry mistakes, there is double entry of all medical and questionnaire data, consistent monitoring of systematic data entry mistakes and correction of the mistakes.
- To ensure consistent and errorfree procedures during the online interviews, data entry is proved by audiotape.
- To avoid missing values in the questionnaire, assistance is offered to the subjects.

Thus far, results of the quality control of 4141 subjects show that there is one mistake per 1000 data entries in the online interview according to the tape records of the interviews, and one mistake per 1000 data entries as well in the questionnaire according to the double data entry. In the medical examination no relevant failure of instruments and no obviously unpalatable values in laboratory data were detected.

Conclusion

The study covers a broad range of behavioural, environmental, social, psychological and medical risk and health factors and diseases. Therefore, questions of comorbidity can be

addressed and the combinations of risk factors with respect to specified diseases can be tested. The combination of medical and dental examination and interview data allows for testing hypotheses specifically related to the interplay of dental and medical factors, such as periodontitis and atherosclerosis. We developed a comprehensive model for quality assurance that goes beyond the scope of quality testing in many other studies. Because we use several validated instruments that allow for comparison with results of other studies, for example MONICA, ARIC, Rotterdam, Alameda County, National Alcohol and Drug Survey, SHIP provides a base for international collaboration.

Zusammenfassung

Study of Health in Pomerania (SHIP) – Ein Gesundheitssurvey in einer ostdeutschen Region: Ziele und Design

Fragestellung: Grundlage für die Study of Health in Pomerania (SHIP) ist der Mangel an epidemiologischen Studien mit einer hohen Zahl von Gesundheitsindikatoren. Darüber hinaus gibt es in Deutschland Bedarf an Studien mit Berücksichtigung der besonderen Lebenssituation nach der Wiedervereinigung. Ziel der SHIP ist die Prävalenzschätzung eines breiten Spektrums an Erkrankungen, Risiko- und Gesundheitsfaktoren für eine Region in der früheren DDR.

Methoden: Die Stichprobe umfasst 7008 Frauen und Männer im Alter von 20 bis 79 Jahren in einer Region im Nordosten Deutschlands mit einer erwarteten Response von 4900 Teilnehmern. Die Ziehung der Zufallsstichprobe erfolgte in zwei Schritten: Zuerst wurden 32 Gemeinden in der Region ausgewählt. Danach wurde innerhalb der Gemeinden jeweils eine Stichprobe durch die Einwohnermeldeämter gezogen, stratifiziert nach Geschlecht und Alter. Die Datenerhebung beinhaltet vier Teile: zahnmedizinische Untersuchung, medizinische Untersuchung, gesundheitsbezogenes Interview und gesundheits- und risikofaktoren-bezogener Fragebogen. Der zahnmedizinische Teil umfasst die Untersuchung von Zähnen, Zahnhalteapparat, Zahnfleisch, kraniomandibulärem System und Prothetik. Die medizinische Untersuchung beinhaltet Blutdruckmessung, Elektrokardiographie, Echokardiographie, Sonographie der Arteria Carotis, der Schilddrüse und der Leber, ein neurologisches Screening sowie Blut- und Urinanalysen. Das computergestützte Interview beinhaltet kardiovaskuläre Symptome, Inanspruchnahme medizinischer Hilfen, gesundheitsbezogenes Verhalten und sozioökonomische Variablen. Der Fragebogen zum Selbstauffüllen betrifft die Wohnsituation, das soziale Netzwerk, Arbeitsbedingungen, subjektives Befinden und persönliche Bewertungen der Lebenssituation nach der deutschen Wiedervereinigung.

Résumé

L'étude de santé en Poméranie – une étude de la santé de la population dans une région en Allemagne oriental: l'objectifs et design

Objectifs: La base de l'étude du santé en Poméranie (Study of Health in Pomerania, SHIP), c'est le manque de l'études épidémiologiques avec beaucoup des facteurs de la santé. Au-delà, en Allemagne il y a besoin de l'études avec une considération de la situation de vie en les lands nouveaux. L'objet de SHIP, c'est l'estimation des prévalences de beaucoup des maladies, facteurs risque et facteurs de la santé pour une région dans les lands nouveaux.

Méthodes: L'épreuve contient 7008 femmes et hommes d'âge 20 à 79. On pouvait s'y attendre 4900 participants. L'épreuve a été tirée en deux pas: commencer 32 villes et villages dans

la région ont été tirée, ensuite dans les communes chaque fois une épreuve a été tirée par les bureaux des déclarations de résidence, pour groupes de l'âge et genre. Le lever des informations renferme quatre parts: l'examen dental, l'examen médical, l'interview et un questionnaire concernant la santé et les risques de la santé. Le part dental comprends les dents, les gencives, le système craniomandibulaire et le dentier. L'examen médicale contient le mesurage de la tension artérielle, l'électrocardiographie, l'échocardiographie, l'ultrasonographie de l'artères carotides, de la glande thyroïde et du foie, une diagnostique brève neurologique et des analyses du sang et d'urine. L'interview renferme des symptômes cardiovasculaires, l'utilisation des aides médicaux, le comportement concernant la santé et facteurs économiques. Le questionnaire concerne la situation d'habitation, le panneau social, la condition du travail, l'état de santé subjectif et l'estimation du situation de vie après la réunification de l'Allemagne.

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