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GHOLDH: GÄVLE HOUSEHOLD, LABOUR MARKET DYNAMICS AND HEALTH OUTCOMES SURVEY

STUDY PROTOCOL

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ABSTRACT

In many industrialized countries including Europe, there is now a well established relationship between work conditions and physical and psychological health. In addition, due to changes in the labour market, the shifts to service jobs and the use of technology to perform job tasks, the European Union (EU) have raised concerns on mental-ill health in the workplace. In Sweden, some studies have found a relationship between employment and working conditions and health although there are variations on type of data used as well as its context. However, very little is known regarding the impact of employment and working conditions on mental and physical health of people living in Gävle although it houses a considerable amount of Industries. Thus, the main objective of the project is to investigate the impact of household income and labour dynamics on health outcomes among people residing in the County. The panel data to be collected will provide detailed information on how household, family and labour dynamics relate to mental and physical health in Gävle Municipality and will offer a more precise measure of both the direction and the magnitude of changes among variables at the individual level, the level of household and within the various parishes within the Municipality. The level of information which will be accumulated from the project will provide a microcosm of a real life of the population of Gävle, which can be used to study and potentially stimulate the impact of public health and labour market/workplace intervention programs across

specific groups of respondents. Ultimately, the survey will provide a sound evidence base for social and health policy development.

I. BACKGROUND

In many industrialized countries including Europe, there is now a well established relationship between work conditions and health (1-3). For instance, physical health outcomes such as low back pain, and eczema and asthma symptoms to be related with working conditions (2). Similar associations have been reported regarding to mental health problems such as anxiety and depression, even if debate still ongoing regarding its mechanisms (4, 5).

In recent years, due to changes in the labour market, the shifts to service jobs and the use of technology to perform job tasks, the European Union (EU) have raised concerns on mental-ill health in the workplace (1). In addition, some argue that within the EU, schemes and shift to pay for productivity reward systems are likely to increase pressure for workers performance at the workplace, thus, increasing stress, anxiety, and irritability, and mood disorders (1). Furthermore, flexible employment contracts may have increased individuals perception of job insecurity and the likelihood of unemployment, thereby producing adverse effects on workers psychological well-being, (1, 4, 6-9).

In Sweden as in other European countries, research using various data sources has found that changes in labour market have affected many of the essential features of the organization of work, but most importantly have had an impact on the work environment and on work-related ill health (physical and mental) (5,10-13).

Little is known regarding physical and mental health among the economically active residents of Gävle Municipality, although it houses a considerable industrial and services activity within its borders. Therefore this project aims to investigate the impact of household income and labour-market dynamics on mental and physical health outcomes among economically active individuals of Gävle Municipality.

II. STUDY OBJECTIVES

Main objective: The main objective of the project is to investigate the impact of labour market dynamics and household income on health outcomes among people residing in Gävle Municipality.

Specific objectives

- a) To assess how labour-market dynamics influence mental health among economical active individuals residing in Gävle Municipality
- b) To assess how labour-market dynamics influence physical health among economical active individuals residing in Gävle Municipality
- c) To investigate the relationship between area context (parish level), types of employment and mental health in Gävle Municipality
- d) To investigate the impact of household income on physical and mental health outcomes in Gävle Municipality

III. OVERALL MATERIAL AND METHODS

a) Study Setting

Gävle Municipality (Gävle kommun) is a municipality in east central Sweden where the City Gävle is the municipal seat (14). Gävle is situated by the Baltic Sea near the mouth of the river Dalälven and is the southernmost municipality of the historical land of Norrland. The present municipality was created in 1971, when the City of Gävle was amalgamated with four surrounding rural municipalities. The population of the Municipality amounts to 92, 681 inhabitants distributed across 17 localities (14).

b) Study Design

b1. Sample design

The GHOLDH project will be carried out using a longitudinal design. In line with panel surveys, the sampling unit is the household, and members of those households will be traced over an indefinite life. GHOLDH Wave 1 sample is then automatically extended over time by following rules that add to the sample such as:

- Any children born to or adopted by members of the selected households, and
- New household members resulting from changes in the composition of the original household

The following rules, in combination with the initial sample is intended to be representative of all Gävle households, provide a mechanism for ensuring that the panel retains its cross-sectional representativeness over time.

While all members of the selected households are defined as members of the sample, individual interviews and self reported questionnaires will only be obtained from those aged 18-65. Some limited information will be collected about people under 18, from an appropriate member of the household (just as information in the household grid of the household questionnaire).

b2. Reference population

The reference population for GHOLDH Wave 1 will be all members of private dwellings aged 18-65 years living in Gävle Municipality, with the following exceptions

- Certain diplomatic personnel of overseas governments, customarily excluded from census and surveys
- Overseas residents in Gävle (e.g. persons who are staying in Gävle less than one year)
- Residents of institutions (such as hospitals and other health care institutions, military and police installations, correctional and penal institutions , convents and monasteries) and other non-private dwellings (such as hotels and motels)

Residents of non-private dwellings will be excluded from Wave 1 sample since they may become a cause of operational complexities to obtain interviews as well as questionnaire responses.

The coverage rules are broadly in line with those adopted by other panel surveys as well as the rules governing other studies carried out by Statistics Sweden. In the GHOLDH

Wave 1 survey, individuals in boarding schools, halls of residence and university students, will be included in the reference population. In addition, children of household members who are away living in study-related accommodation will be included in the sample.

b3 Sampling Unit and Inclusion Criteria

The sampling unit in GHOLDH is the household. The definition of the household to be applied in *GHOLDH* is “a group of people who usually reside and eat together”.

Specifically a household is either:

- A one person household that is , a person who makes provision for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household or
- A multi-person household that is a group of two or more persons, living within the same dwelling, who make common provision for food or other essentials for living. The persons in the group may pool their incomes and have a common budget to a greater or lesser extent; they may be related or unrelated persons, or a combination of both.

More, the GHOLDH survey will apply the following observations:

- A household resides wholly within one physical dwelling. A group of people who make common provision for food but are living in two separate dwellings are two separate households.
- The notion of pooling income may be implied by the definition but it is not an essential criterion in defining a household

- Lodgers, who receive accommodation only (not meals), are treated as a separate household.
- Boarders, who receive accommodation and meals (board), are treated as part of the household.

In general, persons who live in more than one household will be treated as members of the household in which they spend most of their time. People who live in another private dwelling for more than 50 per cent of the time will not be treated as part of the household. Visitors to the household will also not be treated as part of the household. Finally, people who usually live in the household but are temporarily absent for work, school or other purposes will be treated as part of the household, and this will mean that some proportion of interviews will be conducted in locations other than the household addresses.

b4. Sampling Procedure and Sample Size Calculation

The sample size calculation was carried out by Statistics Sweden. Phase 1 of the sample selection was produced using the Total Population Register (TPR) of Gävle taking into consideration all residents of Gävle and those aged 18-65 years of age. The initial sample frame consisted of approximately 60,000 individuals. In the second stage, a random sample of 400 individuals (corresponding to 400 households) was selected. However, due to absence of appropriate household registers, Statistics Sweden has not been able to give the approximate number of people 18-65 years age to be surveyed in the 400 households (work to identify the total number of people is ongoing).

The sample size was determined so that the proportions had sufficient precision. In addition, the sampling calculation took into account important variables such as age and gender which will enable the performance of various tests on individuals and households. The sampling also took consideration the parishes and households within the municipality.

Table 1. Number of individuals aged 18-65 years in the Gävle Municipality by age groups and gender

Age -Groups	Number of men in the frame	Number of women in the frame
18-25	5 650	5 552
26-35	5 893	5 599
36-45	6 534	6 382
46-55	6 353	6 085
56-65	5 933	6 038
Total	30 363	29 656

Source: Statistics Sweden, 2011

c) Survey Execution

Statistics Sweden will execute the GHOLDH Survey on behalf of the University of Gävle (through subcontracting). Statistics Sweden has carried out many surveys with high quality standards including the well known Public Health Survey which is carried out nationally every 4 years on behalf of the Swedish National Institute..

Before data collection starts, a letter formulated by Statistics Sweden (in cooperation with the University of Gävle) will be sent to the selected subjects to outline the study background and objectives, reasons for participating, who are the client, how the answers will be used. The letter by Statistics Sweden will also emphasize the confidentiality of the survey as well as who to turn to if there are any questions regarding the investigation.

Following the notification letter, Statistics Sweden will start a phone interview with the 400 individuals of the 400 households (reference person in the household). The interview

will be carried out using a well validated Phone Number Search and Track system with well-functioning procedures for telephone number search's. The phone interview (for household questionnaire) is estimated to last for 25 minutes.

The next phase of the survey will involve data collection via questionnaires. A mailed questionnaire followed by two written reminders in the form of a thank you card and a reminder with a new query form. All the questionnaires will be scanned by Statistics Sweden.

The examination of the incoming query forms will be done in several stages from checking for potential distortions to the so-called double marks. In addition standard controls in the scanning process will be made.

A number of register variables (from the LISA's Register) will be added to the GHOLDH survey data.

Once the data is collected Statistics Sweden will produce a Technical Report describing how the survey was conducted.

c1) Questionnaire Content

The household questionnaire and the person's questionnaire for GHOLDH Wave 1 were developed using validated instruments which have been previously used in other surveys worldwide but especially across Europe and Sweden. The household questionnaire includes a household grid (for enrolment of all household members including children), a household form which will collect observations about the dwelling and a household questionnaire which will collect information about the household including child care and other household facts.

The Person's questionnaire will collect demographic information, detailed information about employment and working conditions, workplace conditions, income, health (physical and psychological), health behaviour, health care use and well being, and family formation from household members aged 18-65 years of age.

c2. Instruments used to derive questions

Health, Health Care and Well being

- a) *SF-36 version 2:*** The SF-36 (15) is an internationally standardized and validated instrument to measure health-related QoL on eight different scales: physical functioning, physical role, bodily pain, general health perception, vitality, social functioning, emotional role, and mental health. Thirty-six questions have to be answered and a score computed for each scale, ranging from 0 (least well-being) to 100 (greatest well-being). First used in the United States, the SF-36 has undergone reliability testing in Germany as well, where a random sample of 2914 subjects from the general East and West German population served as standard of reference.

- b) *GBB-24 Questionnaire:*** The standardized and validated GBB-24 (Giessen Subjective Complaints List [Giessener Beschwerdebogen]) (16) assesses psychosomatic reasons for physical complaints for the items cardiac complaints, gastric complaints, limb pain, fatigue tendency, and overall subjective complaints. The instrument has been frequently used in population based surveys in many European countries, especially Germany, the country of its birth.

- c) *The Gothenburg Quality of Life instrument (Tibblin) (17)*: This instrument will be used to assess subjective wellbeing. The instrument includes 18 items covering subjective physical, mental, and social well being.
- d) *Psychological well-being*: The HADS (18) is a self-report rating scale of 14 items on a 4-point Likert scale (range 0–3). It is designed to measure anxiety and depression (7 items for each subscale). The total score is the sum of the 14 items, and for each subscale the score is the sum of the respective seven items (ranging from 0–21). The anxiety and depressive subscales are also valid measures of severity of the emotional disorder. Depression symptoms that describe somatic aspects of depression (e.g. insomnia and weight loss) are not included in the scale
- e) Social support: Social support will be assessed using *The Schedule for Social Interaction (19)* consisting of 12 items. Six items involve social attachment in terms of availability of deep emotional relationships (e.g. having someone to share deep feelings). Items are scored 0-1 (not available-available). The other six entail social integration in terms of availability of peripheral social networks (e.g. contact with persons who have similar interests as oneself). Items range from 1-6 (nobody - more than 15 persons). High scores correspond to high social support (total/components). The total score ranges from 6 to 42.
- f) *Work-Related Well-being*: Job strain/social support at work will be assessed with the Karasek and colleagues *Job Demand-Control-Support Model (120)*. This scale contains 18 items (scored from 1 to 4), of which 6 concern job control, 5 job demands

and 7 social support at work. Job strain is derived from the ratio between job demands and control

- g) Employment and working conditions, workplace conditions and family formation questions will come from validated questions used in other panel surveys of labour dynamics with a range of 10 to 20 years follow-up. Other questions were retrieved from the ULF and Public Health Survey questionnaires.
- h) Emotional, Personality well being: the questions are derived from the emotion regulation questionnaire (21) and the Brief Measure of the big five personality domains (22).

Statistics Sweden will be responsible for the layout of the questionnaire form, the original cover letter in consultations with the research team at University of Gävle. In addition, Statistics Sweden will be responsible for the printing of the questionnaire, the thank you card and reminder letter.

IV. DATA STORAGE AND STATISTICAL ANALYSIS

An anonymized response data file will be produced on a SPSS format by Statistics Sweden in accordance with Sweden's and Statistics Sweden secrecy rules. The file will be made available to the University of Gävle through the system Microdata Online Access (MONA). This means that the anonymized data will be physically stored at Statistics Sweden as well as at the Faculty of Health and Occupational Studies, Unit of Public Health at the University of Gävle. However, the key with the information of the participants which will be used for the potential follow-up Waves will be stored only at Statistics Sweden in accordance with national rules.

Various statistical analytical methods will be applied to GHOLDH data. They will include Chi-Square tests, ANOVAs and multivariate linear and logistic regressions. Advanced and complex analytical models will be applied including multilevel methodology to investigate the impact of labour market changes, household income and family dynamic on physical and psychological health at both individual and contextual levels.

V. CREATION AND COLLECTION OF DOCUMENTS

A series of documents GHOLDH project will be produced by both the Statistics Sweden (GHOLDH Technical Report) and by the University of Gävle (the GHOLDH Wave 1 Report). A Study Protocol for the project has been produced.

VI. DISSEMINATION

The dissemination of the GHOLDH project will be carried out by the research team at the Department of Occupational and Public Health Sciences to different local actors as well as National entities. In addition and most importantly, results of GHOLDH will be disseminated within the Municipality and at in the University of Gävle home page.

VII. REPORTS AND PUBLICATIONS

Statistics Sweden will produce a Technical Report for GHOLDH Wave 1 which will be delivered with the data file at the end of June 2012. Following the data file delivery, work will start (data analysis) to produce a Report with the overall findings of GHOLDH Wave 1. The report will be produced by the GHOLDH research Team.

Furthermore, a minimum of 10 scientific publications are expected from various researchers from the Faculty of Health and Occupational Sciences (the sponsor of the GHOLDH Survey).

A controlled mechanism based on application for GHOLDH data use will be established to monitor who and for what purposes the data is requested. Furthermore, all publications using GHOLDH data will be thoroughly monitored.

VIII. GHOLDH SURVEY TIME PLAN

A time plan has been agreed between Statistics Sweden and Gävle University as follows (Table 2).

Table 2. Time plan for GHOLDH Survey Execution by Statistics Sweden (on Subcontracting terms)

Month (s)	Activities Planned
October 2011-January 2012	- Expert analysis and cognitive test - Establishment of rules of selection rules
February 2012	Final questionnaire (including layout approved by both parties)
March 2012	Statistics Sweden will carry the Phone interview with the reference persons of the 400 households (GHOLDH Household questionnaire)
April-May 2012	-Collection of data through mail questionnaires (GHOLDH person's questionnaire) - Data Scanning and Data entering
June 2012	End of GHOLDH Wave 1 Data file and Technical Report delivery to the University of Gävle

IX. GHOLDH FOLLOW-UP SURVEY (Wave 2)

The second wave (Wave 2) of the GHOLDH survey is planned to take place Spring 2014 and it will be carried out in cooperation with Statistics Sweden (through a subcontract).

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