Sozial- und Präventivmedizin Médecine sociale et préventive 30, 76 – 79 (1985)

The Swiss Health Survey Project (SOMIPOPS): an Example of a Data Collection Effort from Various Sources*

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1. Introduction

In 1981/82 the first representative health survey was conducted in Switzerland with the aim of 1) gaining representative data on health status (perceived morbidity) and use of health services in the population of Switzerland, 2) analysing the demand for health care, and 3) developing reliable health and use indicators (Fig.1).

Figure 1

THE SWISS HEALTH SURVEY PROJECT SOMIPOPS

Socio-medical Indicators for the Population of Switzerland

A I M S

- ● Gain representative data on health status and use of health services
- ● Analyse demand for health care
- ● Develop reliable health and use indicators

Swiss National Science Foundation, National Research Programme 8, Grant No. 4.350.079.08

The third aim is of particular importance : as SOMIPOPS was conceived as a pilot project to prepare for the possible introduction of a micro-census in Switzerland, an assessment of the validity of data obtained by questionnaires appeared essential. Equally essential was the identification of ways to analyse the characteristics of non-responders. The integration of additional (secondary) data sources had primarily to serve these two objectives.

2. The Health Survey SOMIPOPS

Sampling and Data Collection

The sample for the Swiss population was drawn from the voting registers in the "communes" and the one for the foreign residents from a central register. Whereas the foreign residents were drawn as a simple random sample, the sample for Swiss citizens was a two-stage random sample following the "Berner Stichprobenplan" (1), combining a simple random sampling without replacement and a cluster sampling (at least 8 persons per "commune"). After defining both the "communes" and the number of persons, "commune" administrations were asked to provide the address of every Xth citizen living in their "commune", starting with a random number Y (systematic probability sampling).

In 1981/82, data were collected through a self-administered questionnaire, sent prior to the interview, and a personal interview for each person in the sample.

Response rate

Data were obtained on 4,255 residents of Switzerland (response rate 72.9%) aged 20 and over. The response rate was 70.4% (n=3,419) for Swiss citizens, and 85.4% (n=836) for foreign residents (table 1)

Table 1

HEALTH SURVEY SOMIPOPS - PARTICIPATION

	Swiss Citizens	Foreign Residents	All
Eligible	4,857	979	5,836
Participation* of Eligible	3,419	836	4,255
	70.4%	85.4%	72.9%

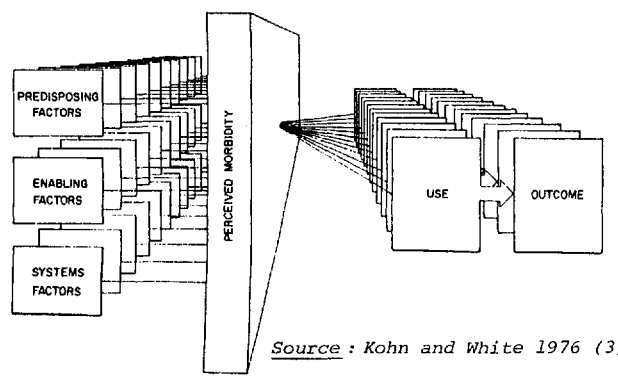
* Completed questionnaire and interview

Conceptual basis

The conceptual basis of the data gathering instruments relates primarily to the work of Anderson (2) and Kohn and Withe (3).

Figure 2

MODEL OF RELATIONSHIPS BETWEEN INDEPENDENT AND DEPENDENT VARIABLES, WITH PERCEIVED MORBIDITY AS CONTROLLING VARIABLE



Source : Kohn and White 1976 (3)

* *Presented at the Xth Scientific Meeting of the International Epidemiological Association, Vancouver, B.C., 19-25 August 1984.*

** *The Health Survey SOMIPOPS (socio-medical indicators for the population of Switzerland) is a project within the Swiss National Research Programme No 8 ("Efficiency and Efficacy in Swiss Health Services") Swiss National Science Foundation Grant No. 4.350.79.08.*

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In the presence of predisposing, enabling and systems factors, perceived morbidity is viewed as the controlling variable regarding the use of services (Fig.2). Health, in this analysis, is considered as a multi-dimensional concept (physical, mental, social health and general health perceptions) (Fig.3)

Figure 3

HEALTH SURVEY SOMIPOPS

Measurement of Health

PHYSICAL

- Symptoms (4 weeks)
- Normal activity limitations (functional disability) (4 weeks)
- Physician diagnosis (12 months)
- 4 major chronic diseases (12 months)
- reason for last visit

MENTAL

- general health questionnaire

SOCIAL

- social integration
- social function

GENERAL

- perceived general health
- perceived present health
- perceived past health

In the present context, we will focus exclusively on integrating various data sources within SOMIPOPS, particularly for validation purposes.

3. Integrating various data sources

In addition to the primary data sources, two additional (secondary) sources were used.

Income and wealth data were collected from the tax files in 26 cantons for the whole of the original SOMIPOPS sample (N=5,860). Permission to get health insurance records was obtained from 80% of the interviewed sample, during the time of the interview (n=3,404) (Fig.4)

Tax file data

Previous studies have demonstrated that interview/questionnaire data on income and, even more so, on wealth are not reliable in Switzerland. For exemple, Schweizer (1980) found that 7 out of 10 respondents reported an income which was considerably lower than the income they had previously reported to tax authorities for the same period. Moreover, there were systematic differences in reliability by sex, residency (urban/rural), etc. In addition, response rates for questions about income seem to be substantially lower in Switzerland compared to other countries.

Income and wealth data were collected for 1978/80/82*. Data on income are available per income source and income earner, while data on wealth can only be collected per household. Although income and wealth data from tax files are far from perfect, they are substantially more valid and reliable than the interview data. The SOMIPOPS and the Income Distribution data sets were merged for the empirical analysis.

The interpretation of this data source allows

- the analysis of health and use according to a (valid) socio-economic indicator,
- the testing of a structural model for medical care demand,
- the analysis of some of the characteristics of non-responders in the SOMOPOPS survey.

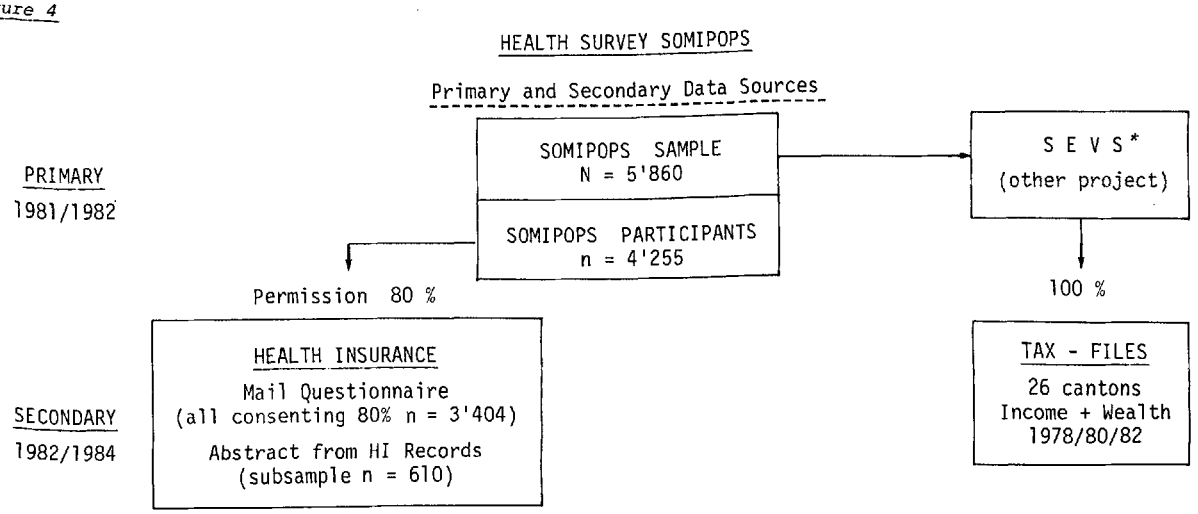
Health Insurance data

Data from health insurance files can be used to test the validity and reliability of the interview/questionnaire data, to analyse specific medical/epidemiological questions, and to estimate empirically the demand for medical care. The latter would require the collection of the insurance data for all respondents who gave permission for the inspection of their files.

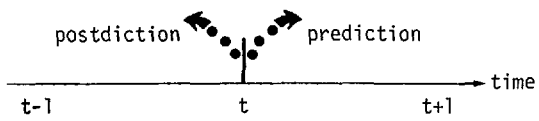
Apart from the question of reliability, using cross-section interview/questionnaire data in a demand model for medical care poses one major problem. Health status, however measured, is an important explanatory variable for medical care utilization. In the theoretical model, health status is supposed to predict utilization, e.g. people are supposed to seek medical care whenever they feel ill. However, cross-section data do not allow the use of health status as a predictor in empirical demand models. The reason is that cross-section data, by their very nature, provide information

** As part of another National Science Foundation Project (René L. Frey and Robert E. Leu : Income Distribution and Redistribution in Switzerland - SEVS) No. 1.455.081*

Figure 4



on health status at the time of the interview (t) and on utilization at a period preceding the interview (last six months, etc.). Thus, present health status is used to "postdict" past utilization rather than to predict future utilization in empirical studies.



Access to health insurance data provides one way out of the problem simply because it is possible to get information on utilization at time t+1. This, in turn, allows estimation of empirical demand models in which health is really a predictor rather than a "postdictor".

In Switzerland there are roughly 700 decentralized health insurance carriers. The members of the SOMIPOPS sample belonged to 200 different insurance carriers, some of which do not even have a centralized membership file.

For all consenting SOMIPOPS participants, a questionnaire to collect data on insurance type and status, as well as information on reimbursed costs, was sent to the respective insurance carriers.

In order to get detailed information on the use and morbidity variables, health insurance carriers had to be visited and the data abstracted from available records, as these variables are not routinely included in the insurance carrier's computer file.

For this purpose, a subsample of those health insurance carriers that included more than fifty SOMIPOPS participants was chosen (5 carriers, n=610 SOMIPOPS participants, i.e. 18% of all SOMIPOPS participants).

Between the health insurance (HI) subsample and the total SOMIPOPS sample there are no statistically significant differences regarding the age, sex, income distribution and the number of visits to a physician within the previous twelve month (Table 2).

Table 2

HEALTH SURVEY SOMIPOPS

Health insurance (HI) subsample

SEX	MALE	FEMALE			
SOMIPOPS	49.8 %	50.2 %			
HI SAMPLE	48.8 %	51.2 %			
AGE	20 - 39	40 - 59	60 - 79	80 +	
SOMIPOPS	40.4 %	35.2 %	22.4 %	2.1 %	
HI SAMPLE	45.2 %	35.7 %	18.0 %	1.2 %	
INCOME (IN 1,000)	- 20	21 - 40	41 - 60	61 +	
SOMIPOPS	21.1 %	45.7 %	24.3 %	8.8 %	
HI SAMPLE	20.9 %	46.6 %	23.9 %	8.5 %	
PHYSICIAN VISITS (12 MTHS)	0	1 - 2	3 - 5	6 - 10	11 +
SOMIPOPS	35.0 %	26.6 %	18.9 %	11.6 %	7.8 %
HI SAMPLE	37.5 %	25.7 %	17.5 %	13.0 %	6.5 %

4. Commentary

Difficult problems have to be overcome in order to develop an integrated data bank such as SOMIPOPS.

In particular, even before obtaining the data, time consuming procedures are necessary in order to obtain permission to use data sources such as tax or health insurance files (privacy of personal data).

Once support has been secured, the effort required to collect the very often disparate data (example : one of the major health insurance carriers in this country has 1,475 local sections, with no central records on an individual level) is extremely resource consuming.

Furthermore, the amount of data manipulation necessary for the development of an integrated data bank from various sources also introduces new sources of error which not only help in, but at time add to, difficulties in interpretation.

However, the linkage of different sources of data on an individual level greatly enhances the analytical potential of health surveys.

Summary

In 1981/82 the first representative health survey (SOMIPOPS "Socio-medical indicators for the population of Switzerland") was conducted 1) to gain representative data on health status (perceived morbidity), use of health services, 2) to analyse the demand for health care, and 3) to develop reliable health and use indicators.

In order to validate questionnaire and interview data (primary data sources), two additional (secondary sources) were used : income and wealth data for the whole of the original SOMIPOPS sample (N=5,860), and health insurance records for 80% consenting members of the interviewed sample.

The integration of different data sources on an individual level greatly enhances the analytic potential of health survey.

Résumé

Une enquête de ménage en Suisse (SOMIPOPS) : l'utilisation de plusieurs sources de données

En 1981/82 la première enquête de ménage représentative (SOMIPOPS) "Système d'indicateurs socio-médicaux de la population suisse") a été menée dans le but 1) d'obtenir des données représentatives concernant l'état de santé et le recours aux services de santé, 2) d'analyser la demande des services de santé et 3) de développer des indicateurs fiables.

Pour vérifier la fiabilité des données obtenues par questionnaire et interview (sources de données primaires) et pour analyser les non-répondants (28%), deux sources supplémentaires ont été utilisées : les données sur le revenu et la fortune pour l'ensemble de l'échantillon original SOMIPOPS (N=5'860), et les données des caisses-maladies pour les 80% des participants à l'interview.

L'intégration de plusieurs sources de données au niveau de l'individu permet une amélioration considérable des possibilités analytiques des enquêtes de ménage sur la santé.

Zusammenfassung

Die Schweizerische Gesundheitsbefragung SOMIPOPS : Beispiel der Integration verschiedener Datenquellen

1981/82 wurde eine erste gesamtschweizerische Gesundheitsbefragung (SOMIPOPS : "soziomedizinisches Indikatorensystem der Population der Schweiz") durchgeführt, um 1) repräsentative Angaben über Gesundheit ("wahrgenommene Gesundheit") und Inanspruchnahme medizinischer Dienste zu erhalten, 2) die Nachfrage nach

gesundheitlichen Dienstleistungen zu untersuchen, und 3) zuverlässige Gesundheits- und Versorgungsindikatoren zu entwickeln.

Um einerseits die Angaben aus Fragebogen und Interview (primäre Datenquellen) validieren und um anderseits die Nichtteilnehmer analysieren zu können (28%), wurden zwei zusätzliche Datenquellen einbezogen : Einkommen und Vermögen für die gesamte ursprüngliche SOMIPOPS Stichprobe (N=5'860) und Krankenkassen-Daten für 80% der interviewten Stichprobenmitglieder.

Die Integration verschiedener Datenquellen auf individueller Ebene vermag das analytische Potential von Gesundheitsbefragungen deutlich zu steigern.

References

1. Fritschi P., Meyer R., Schweizer W. - Ein neuer Stichprobenplan für ein gesamtschweizerisches Sample. Schweiz Zeitschrift Soziol, 1976, 2, No. 3: 149-158.
2. Andersen R. - A Behavioural Model of Families' Use of Health Services. Research Series No.25. Chicago, University of Chicago, Center for Health Administration, 1968.
3. Kohn R., White Kl. - Health Care : An International Study. Oxford, Oxford University Press, 1976, XXXI + 557 p.