

## Original Article

## Job classification in health research in Iran: a case of a developing country

Neda Bayat<sup>1</sup>, Kazem Mohammad<sup>1</sup>, Reza Majdzadeh<sup>2</sup>, Arash Etemadi<sup>3</sup>, Saharnaz Nedjat<sup>2\*</sup><sup>1</sup> Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran<sup>2</sup> Department of Epidemiology and Biostatistics AND Knowledge Utilization Research Centre (KURC), School of Public Health, Tehran University of Medical Sciences, Tehran, Iran<sup>3</sup> Digestive Disease Research Center, Tehran University of Medical Sciences, Tehran, Iran

## ARTICLE INFO

Received 07.04.2014  
 Revised 21.07.2014  
 Accepted 07.09.2014  
 Published 20.2.2015

Available online at:  
<http://jbe.tums.ac.ir>

**Key words:**

National Statistics  
 Socioeconomic  
 Classification,  
 qualitative,  
 Iran

## ABSTRACT

**Background & Aim:** Due to lack of a unique and acceptable classification scheme for occupation in Iran, the role of this measure has been ignored in many health researches. We aimed to find a suitable classification .

**Methods & Materials:** In-depth interviews with expert health professionals were done through purposeful sampling. They expressed their opinions on five commonly used occupational based socio-economic measures in the world to develop a consensus draft for Iranian occupational classification. The main themes were identified by content analysis.

**Results:** The experts agreed that the National Statistics Socio-economic Classification was the most compatible job classification for Iran's health researches. Some of the problems in occupation assessment in health research were also clarified through interviews.

**Conclusion:** Job classification would better consist of more than one job dimension; the economic parameters are not stable and accurately measurable, so more social aspects of occupation such as the authority and control over workforce should be considered.

## Introduction

Occupation is one of the socioeconomic status (SES) indicators which is commonly questioned in health research either as a main variable or cofounder. Due to the nature of occupation in stratifying people within the social structure, the occupation-based SES measure has long been used to assess the effects of SES on health outcomes (1).

Some of the mechanisms, which may account for the association between occupation and health related outcomes, consist of the relations between income and occupation which

accordingly affect living standards (2, 3). Moreover, occupation represents social prestige, hence affecting health by smoothening the way for health care services, education, and more healthy residential facilities (4, 5). Social networks and the pattern of health behaviors within a network can also be determined through occupational circumstances (6). Harmful task-related exposures may also affect health (7). In addition, occupations can lead to social inequality in modern industrial societies on account of social classes (8, 9).

The current or last occupation prior to becoming unemployed is considered as an SES indicator in predicting the variations in health status (7, 10). A large number of occupational classifications have been developed and different theories explain various aspects of SES application in assessing health outcomes (7).

\* Corresponding Author: Saharnaz Nedjat, Postal Address: Postal Address: Department of Epidemiology and Biostatistics, School of Public Health, Knowledge Utilization Research Center, Tehran University of Medical Sciences, #12 Nosrat Street, 16 Azar Street, Keshavarz Boulevard, Tehran, Iran. Email: [nejatsan@tums.ac.ir](mailto:nejatsan@tums.ac.ir)

There have been some differences in the theoretical basis of occupation-based measures across countries particularly when it comes to comparing settings of low- and high-income countries. For instance, some formal jobs are rare in low and middle income countries; by contrast, small own-account workers and pseudo-occupations are more common. Furthermore, as mentioned earlier, the linkage of prestige and occupation could be interpreted differently in different contexts (11). People in developing countries are involved in more than one occupation, or live on temporary and seasonal jobs. In some agriculturally dominated countries, many households rely on their own farms. To differentiate these kinds of jobs in terms of social status, the localized form of occupation based SES measures are needed.

In Iran, there are lots of job positions that are occupied by non-educated people, and lots of educated people are unemployed or are in the wrong job positions. This makes using international scales complicated and doing the job classification more sophisticated.

On the other hand, lack of consensus among researchers in using a compatible frame for those having self-employed jobs (working in unregistered marketing in the private sector), which are frequently considered as one of the main classes of occupation is another dilemma in Iran. This class includes a wide spectrum of jobs, which do not have much in common. Adding to these complexities there is a common approach that classifies people into employed, unemployed, student, conscript and housewife groups, whereas the concept of occupational classification refers to the employed group only. Only in some limited cases more detailed classifications are structured; through which industrial and agricultural occupation hold different positions rather than clerical works (12-16).

Lack of an exclusive, acceptable and common measure of occupational classification across Iran's health studies is a big challenge that can result in imprecise data gathering this in turn may lead to misestimated results by roughly ignoring occupational data in the analysis process. In addition to the absence of internal validity, there is often no way of

comparing the results with those of different studies. The use of simple occupational classifications may then become rather problematic. Without a cautious interpretation, a simple classification may not be the best indicator to measure social position. Categories of occupations should be context specific.

In the present study, we tried to take health professionals' opinions toward currently used job classifications in the world to find out the challenges in using and developing a classification in Iran.

## **Methods**

In this qualitative study, expert experiences and their opinions about job classification in health studies were obtained to explore the current approaches facing occupational data and the way they group people in a meaningful method to reflect social stratification within a society. Based on our literature review, different aspects of classification are in doubt. Since this topic is still in its prime in health research in Iran, we addressed only the fundamental issues (mentioned in the results section). We developed a query to find out how job information could be inquired and which attribute it should have in the health survey questionnaires.

### ***Population under study***

Purposeful sampling was done from well-known health researchers who had performed several national health and social surveys. These were researchers and who were responsible for the biggest national studies throughout the country at the time and who had published several authoritative papers in these fields as well. Thirteen semi-structured interviews were carried out in order to theoretically make sense of their knowledge and experiences in implementing occupational data. After each interview, we asked them to refer us to other reputable experts (snowball sampling). The participants consisted of 12 men and 1 woman. Their professional experience ranged from 10 to 30 years. There were 10 epidemiologists, 1 sociologist, 1 medical sociologist, and 1 professor of biostatistics.

**Interview guide development**

To develop an interview guide, we conducted an electronic literature search throughout health databases to find out what classifications other countries had used in their studies to explore the theoretical underpinnings and methodological constructions of each scale. Thereafter, we constructed a semi-structured interview guide consisting of the five most popular international stratification schemas in which the advantages and disadvantages of each classification were summarized in table 1.

**Interviews**

The research team arranged the interviews in the experts' offices. Interviews were held in two parts. In the first part, face-to-face interviews were conducted by asking three open-ended questions. The first question was about their current approach toward occupational classification. The second question was about the theoretical basis they use as a rationale for

classification, and the last question was what characteristics a good classification should have in terms of appearance and structure. This part resumed by focusing on each person's interest in the defined areas. In the second part of the study, participants were asked to give their opinions on the relevancy and transparency of five styles of classifications currently used in the world. The mean duration of interviews was 1 h (ranging 45-90 min). All the sessions were audio-recorded and transcribed, and notes were taken down by the interviewer at the same time. The sessions continued until saturation. Prior to recording we obtained oral consent from all participants. The study was approved by the research and ethics committee of Tehran University of Medical Sciences.

**Data analysis**

All the transcriptions and notes were reviewed, and the main themes were extracted by two individuals independently and coded for further analysis.

**Table 1.** Occupational based socioeconomic indicators (18)

Skill	Property of means of production and class relations – social class	Working relations	Prestige, skills
<b>International Standard Classification of Occupations</b>	<b>Wright</b>	<b>UK National Statistics Classification (NS-SEC)</b>	<b>Registrar-general's social class</b>
1. Legislators, senior officials, and managers	1. Capitalist	1. Managerial and professional occupations	1. Professional administrators and officials;
2. Professionals	2. Small employer	2. Intermediate occupations	2. Intermediate managers in large industrial establishments; large proprietors
3. Technicians and associate professionals	3. Petty bourgeoisie	3. Small employers and own account workers	3a. Skilled non-manual
4. Clerks	4. Expert manager	4. Lower supervisory and technical occupations	3b. Skilled manual
5. Service workers and shop and market sales workers	5. Skilled manager	5. Semi-routine and routine occupations	4. Partly skilled
6. Skilled agricultural and fishery workers	6. Non-skilled manager		5. Unskilled
7. Craft and related trades workers	7. Expert supervisor		
8. Plant and machine operators and assemblers	8. Skilled supervisor		
9. Elementary occupations	9. Non-skilled supervisor		
	10. Experts		
	11. Skilled workers		
	12. Non-skilled workers		
			1. Higher grade professionals, administrators and officials;
			2. Lower grade professionals, administrators and officials; higher grade technicians; managers in small industrial establishments; supervisors of non-manual employees
			3a. Routine non-manual: Higher
			3b. Routine non-manual: Lower
			4a. Small proprietors with employees
			4b. Self-employed without employees
			4c. Farmers/smallholders
			5. Foremen and technicians
			6. Skilled manual
			7a. Semi and unskilled manual
			7b. Agricultural workers

NS-SEC: National Statistics Socioeconomic Classification

**Table 2.** Major themes reported by participants toward current approaches of occupational classification

Themes	Subthemes
Measuring occupation in current health research	Hard to measure due to co-linearity with other factors and difficulty in the coding process Asking open-ended questions about the job titles Classifying the jobs based on the final protocol of occupational classification Developing a group of questions Ask for other employees in the family at the same time the questionnaire of job classification is going to be filled
How should we classify housewives and retired people?	Would be classified based on the job just before retirement For those retired, more questions need to be asked (like duration of retirement, present job involvement, and so on) Housewives should be considered as a separate class in the occupational classification House-working in its pure sense is a job position mostly because it affects people's position and health in the society; however, it is not a job, as there is no income with it
Which theoretical basis would you suggest for job classification?	A combination of people's impression on what they do and their authority A combination of job title, income, and social status A combination of job title and person's position in the community or organization Autonomy and control in job, and work relationship Governmental or non-governmental employment/type of organization Social capital and social dignity Job title and its prediction about income and educational level
Which characteristics should any occupation classification protocol have?	Simple and understandable to interviewers Hierarchy is important, however, it is idealistic and unnecessary Clear differentiation of job classes For simplification, there should be many jobs with common characteristics in one job class For a job classification to function, it is sufficient if it is applicable at national level only

Qualitative content analysis was used to show conflicting opinions and unsolved issues regarding the meaning and use of occupational classification and its characteristics.

## Results

The extracted themes from the content analysis, including 4 themes and 21 subthemes, are shown in table 2. We summarized the various aspects of classification in the following themes.

### ***Measuring occupation in current health research***

All participants pointed out the difficulty in measuring occupation due to its complex nature. In other words, a boundary to discriminate the role of occupation from other SES indicators is unclear. Almost all participants agreed that categorizations based on predefined protocols resulting from expert panels could be valuable and applicable in demonstrating the health gradient changes throughout classes. Only two persons proposed that it was better to have all job titles during the process of filling out the questionnaires. Then, after data gathering in line with the aims of the study, a decision should be made to use them as categorized variables and to classify them.

However, they specified several factors that affected the low priority given to developing precise measurements. These included difficulty in coding and the time-consuming process of constructing a good measure.

Five experts indicated that developing a group of questions including; overtime, shift work, and position within an organization would help build a better classification. Inquiring about job information at both individual and household level was suggested by 10 experts (Table 2).

According to the participants, lack of knowledge about the basic concepts of social classification and ambiguity over some occupations were the main reasons a unique classification scheme could not be used. They said most of the previous experiences were based on no particular evidence, and they had to categorize people into very broad categories.

### ***How should we classify housewives and retired people?***

Half of the participants believed that the housewives and retired people comprised a large proportion of the general population. Separate strategies should be considered for the two groups. Job title prior to retirement, duration of

retirement, and the current employment status of retirees should be considered for the retired group. Housewives should be excluded from the employed groups and their socioeconomic position should be measured in different stratum because they do not have a job according to its basic definition. Half the experts suggested that although the husbands' job did not accurately represent household SES, nonetheless it could be used as an alternative in health questionnaires.

***Which theoretical basis would you suggest for job classification?***

Eleven interviewees stated that, as the social aspects of occupation within organizations and societies are more reliable and measurable, they should be considered more to differentiate the special role of occupation from income or other economic markers. In this regard, a medical sociologist stated that social capital is the most ignored aspect of employed people's occupation, and can be used as a basis for this means.

Three experts implied that in light of Iran's circumstances, governmental and nongovernmental jobs were structurally segregated; special characteristics like autonomy and authority within job structures lead to different health effects. Hence, they could be used to stratify individuals within the job market. As a result, job-related stress, job satisfaction, and intangible workforce hazards were stated by different professionals; however, they believed these assumptions could not be generalized.

***Which characteristics should any occupation classification protocol have?***

They all suggested that classes should be simple, short, and user friendly. More than half of participants pointed out that hierarchical classification are better, because they will show the health gradient throughout the classes; they would also be valuable in quantitative studies. On the other hand, health inequality could be measured better; though, it is not necessary. To reach the highest quality of this scale all the participants emphasized on reducing within-group variance and increasing between-group variance. National comparability would be good enough for our first step, while half the

participants preferred the capability of international comparison.

***The second part of the interview***

In the second part of our interviews, the interviewees were asked to choose the best fitted classification scheme as a national classification of jobs and give their opinions about the advantages and disadvantages of the current classifications (Table 1). The five aforementioned classifications are presented below.

***Registrar-general's social classes (RGSC)***

Registrar-general's social classes (RGSC) were the first attempt by a British researcher to classify social class based on prestige. However, upon revision it considered both prestige and skill. All participants agreed that the definition of prestige is ambiguous in Iran, and different people may have different concepts about it. Some people focus on the issue of wealth and some others may regard it as education. They all thought that challenges would rise if it was considered in the health questionnaire; using the self-administrated method, the interpretation would lead to a variety of ideas. Eight experts believed that due to the increasing number of skill-based jobs this classification was no longer useful, because unskilled and partly skilled based occupations were two major groups of this classification. In their opinion, these two groups should no longer be considered as major groups. However, they thought that the name of each class was quite clear and easy to understand. By contrast, five participants stated that if skill was not considered equal to education, there were still huge numbers of people who would fall in the skilled manual class. All in all, their opinions weighed heavily against this classification.

***International Standard Classification of Occupations (ISCO)***

The International Standard Classification of Occupations (ISCO) has been designed on the basis of the International Standard Classification of Education: almost all participants agreed that the external features as well as the names of the classes were pretty tangible and most likely suitable for Iran. However, when they took the

basis into account they all stated that education could not necessarily represent occupation, especially in Iran. Nevertheless, less than half of them pointed out that this classification could be used in conjunction with other parameters.

***Erikson, Goldthorpe, and Portocarero (EGP) class schema and National Statistics Socioeconomic Classification (NS-SEC)***

The theoretical basis of these two classifications is the same with regards to work relations and conditions. And since it was somewhat new to our participants they all believed such factors would create a boundary between occupation and other indicators. Moreover, the combined nature of these classifications would relatively cover different aspects of the occupation. However, the National Statistics Socioeconomic Classification (NS-SEC) was more acceptable when compared to the Erikson, Goldthorpe, and Portocarero (EGP) class schema appearance-wise; the length of classes in the EGP was criticized and almost all were in favor of using NS-SEC.

***Erik Olin Wright schema***

This classification is influenced by Marx's theory of class and classifies people into two classes based on whether they own the means of production or not. According to Wright, the relationship between different classes of society can be explained in two ways: domination, or exploitation. All participants rejected this classification and believed that it is suitable for capitalist societies, and that it would not help us reach social stratification based on occupation.

Finally, the results demonstrated that there was a tendency (10 out of 13 experts) toward the NS-SEC among other introduced classifications when the characteristics were taken into consideration.

**Discussion**

The empirical data from our interviews indicate that NS-SEC is likely the most acceptable classification for categorizing occupations in Iran.

Based on evidence from the literature review the NS-SEC is the most recently used scale in Britain (17-19), and has been used in their

census from 2001 onward. Moreover, the strength of this classification to predict a social difference within health inequality has been approved by the short form health surveys (SF-36), and its construct validity has also been confirmed. The study tests the associations of NS-SEC with self-reported functioning and well-being. The results show significant social class differences in health (20).

The clear theoretical basis of this classification which assigns people into eight, five or three non-hierarchical classes based on employment relations and conditions can explain health changes from psychosocial pathways including inconspicuous rewards, labor contracts, job security, and job control. However, this flexible theory is likely to vary over time. So like other classifications it requires continuous updates (18). The full method, reduced method, and simplified methods are known as methods for deriving coding systems of this classification scheme. Due to the elaborate nature of these methods, we will not discuss this topic further here (21).

We observed different ideas toward each classification's theoretical basis. For prestige based scales (the first basis of RGSC), our participants agreed upon the controversies other studies had raised regarding prestige limitations (22). American researchers (Nam & Powers 1965) provided a new outlook on income and educational attainments related to occupation. In other words, educational level consequently determined the eligibility for entry into occupations and the income is the reward of investment in education (23). Howe et al. claimed that the role of education in SES was a knowledge based factor; however, it is strongly in relation to income and occupation (11). Correspondingly, our experts pointed out the undeniable linkage between education and income with occupation, as an explanation for better access to health facilities. They all agreed that the basis of social class should vary from income and education, because the two can obviously be asked in separate questions. Therefore, the ISCO was criticized because of its educational related basis.

The Wright class schema too seems impractical for our country; its rigid and materialistic structure is based on capitalist

societies, according to our experts' opinions. This classification ignores skill or management assets that help assign individuals to a class and relies more on individuals' financial status. In contrast to the Wright schema, the NS-SEC is flexible enough and considers changes over work labor and over time (4).

Social capital in the work place was considered as a specific result of our interviews. As far as the positive impacts of social capital on individuals are concerned, it raises opportunities toward employment and education. On the contrary, the down side of high social capital is social segregation and injustice (22).

One of our striking findings was considering retired people and housewives as important as currently employed people in holding positions in terms of SES. This finding confirms those of other studies, which have reported that occupational classifications based on the characteristics of husbands' occupations do not demonstrate the effect of women's occupations. It seems there is no difference in the interpretation of retired people and housewives among low and high income countries (7).

The participants also addressed the features of a suitable scheme which were in line with the findings of other studies. Based on their opinions, a suitable classification scheme should be comprehensive enough to account for the vast variety of jobs, and standardized to be comparable among different contexts (4). From a hierarchical point of view, the NS-SEC followed EGP to show social class in comprehensive however elaborate categories. Different studies have stated that the hierarchical trend appeared when the NS-SEC collapsed into three classes, otherwise there is no apparent gradient. Accordingly, our study reached the same result, meaning, the hierarchical slope and order of this scale is undeniable among the classes (24, 25).

To the best of our knowledge, this is the first study describing job classification and its concerns in the context of health measures in Iran and no report has been found in relation to measuring social class in terms of occupation in health studies.

An important limitation of our study was its lack of information on other dimensions of

classifications in detail; although, we have tried to catch the utmost important theoretical bases which are being used now. Another possible weakness of this study was the number of interviews; it was very hard to find experts willing to be interviewed. Nonetheless, we reached saturation.

An important strength of our study is that it could be the inception for further studies in this field. As mentioned above the deriving code system for this scale is explicit and applicable by three methods; the full version that required unit group, employment status, and size of organization can be easily developed by self-coding methods (21). We suggest testing the validity and reliability of each method in relation to health outcomes.

## **Conclusion**

Constructing a valid measure for occupational classification is challenging, because it is a neglected area of research in Iran. In the present study, the main points made through in-depth interviews with experts were that combination based classifications, consisting of social and mental aspects of occupation such as authority and control over work could be better applied in Iran, rather than unstable and hardly measurable economic indicators.

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