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迁移与工作能力

——珠三角制造业工厂流动工人迁移特征与工作能力关系的实证研究

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中 文 摘 要

背景

　　伴随着中国工业化、市场化和城市化的过程，流动人口不断增加。2012年中国农民工数量已达2.63亿人，未来一定时期内仍呈增长趋势。流动工人是中国产业工人主体，为中国的制造业发展提供了重要的人力资源，但他们面临较高的职业危害风险，缺乏职业保护，是职业病的主要罹患人群，尤其是尘肺、中毒噪声性耳聋等职业病病例多数都是农民工。此外，迁移特征也是流动工人健康的潜在影响因素。人力资源是经济发展的主要动力，尤其是在中国即将面临的高度老龄化社会中，保护流动工人健康和工作能力，不仅关乎社会公平，也是提高社会生产率，促进经济可持续发展的需要。国内已有研究存在的主要问题有：（1）以职业病为职业健康结局指标，不能综合反映健康和工作能力；（2）缺乏对职业健康中间过程变量及结局变量整体的研究；（3）缺乏对迁移特征与职业健康关系的研究。本研究采用经典的理论框架（Planning for Health Model，Health Promotion Model， Anderson Model），以流动工人的迁移特征为主要关注的因素，以工作能力指数为职业健康结局评价指标，以防护用品使用和卫生服务利用为职业健康中间过程指标，研究迁移特征等与职业健康中间过程和工作能力指数之间的关系。

方法

　　本研究为横断面问卷调查。研究对象是珠三角制造业

工厂工作中接触有机溶剂，按要求需要佩戴防护面具的流动工人。按估计总体率的公式，计算样本量。采用多阶段抽样，第一阶段抽取城市，第二阶段抽取工厂，第三阶段抽取工人。最终获得来自珠三角四个城市、10家中小型制造业企业的878个有效样本。研究方法包括文献回顾、现场观察与定性访谈、问卷调查等。其中问卷内容包括人口学特征、迁移特征、收入和保险、社会支持、对防护用品使用的认知、工作环境的人际和情境特征、工作环境的物理和社会心理特征、工作能力指数等。采用描述统计方法、单因素分析、多因素回归、结构方程模型和路径分析方法。

主要结果与建议

1. 防护面罩使用行为的影响因素

约有53%的工人能够基本按要求佩戴防护面罩，而47%的工人不能按要求佩戴防护面罩。多因素和结构方程模型分析显示，从总效应看，个人认知因素对面罩使用行为的影响较弱，而人际和情境因素对面罩使用行为影响较强。支持、规范、榜样和情境，可以直接影响面罩使用行为，或通过影响个人认知，间接影响面罩使用行为。

对具备不同迁移特征的流动工人分组进行结构方程模型的多群组分析结果显示，迁移时间和迁移意愿对面罩使用行为的模型具有调节作用。离乡时间对自感益处及自感障碍有影响。离乡时间短的流动工人，认为"戴口罩可以预防职业病"是重要的益处，而离乡时间长的工人认为"预防患职业病"是重要的益处。迁移意愿能够调节自感障碍对自我效能的影响。希望回乡的工人，在自感障碍对自我效能的作用上，强于希望留城的工人。即希望回乡的工人，在有行为障碍时，障碍会对自我效能产生较大的影

响。而希望留城的工人，有行为障碍时，障碍对自我效能的影响较小。可能原因是：希望回乡者，将目前的工作视为短期工作，从而忽视了远期的健康风险，对戴面罩的重视不足；而希望留城者，会重视远期的健康，因而会更重视戴面罩。提示具备不同迁移意愿和迁移时间不同的工人的认知有差异，可进一步研究其差异内在机制，并在健康干预中予以不同的干预措施。

2. 应就诊而未就诊的影响因素

有19%的工人报告过去12个月曾有"应就诊而未就诊"情况。收入和是否有保险并不直接与卫生服务利用有关。

路径分析发现，迁移特征多数通过影响社会支持和健康状况而影响"应就诊而未就诊"行为，社会支持是迁移特征与卫生服务利用重要的间接因素。与"应就诊而未就诊"直接有关的迁移变量是迁移时间。迁移时间长者比迁移时间短者，"应就诊而未就诊"的可能性大。同时迁移时间也通过影响健康状况（需要）而与"应就诊而未就诊"有关。与"应就诊而未就诊"有间接作用的迁移变量是迁移意愿和迁移行为。迁移意愿通过需要而与"应就诊而未就诊"有关，希望留城者，健康状况较差，故"应就诊而未就诊"较多。迁移行为通过社会支持与"应就诊而未就诊"有关。长期迁移者与候鸟式迁移者相比，有利于在本地建立社会关系，得到社会支持，"应就诊而未就诊"较少。社会支持与"应就诊而未就诊"有直接和间接的关系。社会支持程度较好的，"应就诊而未就诊"情况较少，卫生服务利用程度更好。社会支持会影响需要，即社会支持较好的人，其健康状况较好（需要程度较低），故其"应就诊而未就诊"情况较少。

社会支持是迁移特征与卫生服务利用重要的间接因素

变量，这加深了迁移对职业健康影响的理解，为今后的相关干预工作，提供了新的思路。

3. 工作能力的影响因素

本研究未发现年龄与工作能力总分评级的关系。对各维度得分进行分析发现，随着年龄增长，自评工作能力和心理资源得分有增加趋势，但健康状况得分没有明显变化。

不稳定的迁移状态（候鸟式迁移）、迁移地点变动较多、希望留城和单人迁移是流动人口工作能力的主要负面因素，提示这些人群是更为脆弱的人群，应在就业、教育、医疗等方面为流动人口提供公平的社会福利，促进他们稳定迁移、家庭整体迁移，促进他们融入城市社会，改善身心健康，提高工作能力。

较好的物理环境、较强的工作自主度和较小的工作压力，有助于提高流动工人的工作能力。已有多个研究表明，物理和心理的工作环境对工作能力有影响。

本研究分析了迁移特征与个人防护用品使用行为、卫生服务利用行为和工作能力各维度的关系，探索了流动工人工作能力的理论框架，为今后相关干预研究提供思路。

Abstract

Background

Following the industrialization, marketization and urbanization, the migration population is gradually increasing. The number of Chinese farmer workers was up to 263 million in 2012. Migrant workers are the main part of Chinese industrial workers. They provide important human resources for construction industry. However, facing the high risk of occupational hazard and poor protection, they become the main part of population with occupational diseases. Especially pneumoconiosis and noise-induced epicophosis, most of the occupational patients are farmer workers. In addition, the features of migrating process are the potential correlated factors associated with health of migrating workers. Human resource is the power of economic development, especially in China, a country which will face high ageing society. Protecting the health and work ability of migrating workers is not only about society equity but also need of improve labor productivity and economic sustainable development. The main problems of present domestic researches are: （1）Using occupational health as outcomes can not reflect the comprehensive of health and work ability; （2）Lack of examination both process variables and outcome variables from a whole prospective; （3）Lack of research on relationship between migration characteristics

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and occupational health. To study relationship between migration characteristics and occupational health process and work ability index, this study adopted classic theory frame, including planning for health model, health promotion model and Anderson model, focused on migration characteristics of migrating workers, used work ability index as health outcome measurements, and used protective articles usage and health services utilization as process variables.

Method

This was a cross-sectional questionnaire investigation study. Research objects were migrating workers who may contact organic solvent and need to wear gas-mask as required in construction factories at Pearl River Delta. The sample size was calculated according to the estimating equation of population rate. Using multistage sampling method, the first stage chose cities, the second stage chose factors and the third stage chose workers. Ultimately 878 valid samples from ten middle small construction enterprises in four cities were investigated. Research method included literature review, field observation, qualitative interview and questionnaire investigation. Questions in the questionnaire included demographic characteristics, migration characteristics, income and insurance, social support, knowledge of labor protection supplies, interpersonal and situation feature of work environment, physic and social-psychological feature of work environment, and work ability index etc. Statistic methods included statistic description, univariate analysis, multivariate regression, structural equation model and path analysis.

Results and suggestions

1. Associated factors of gas-mask using behavior

About 53% of workers can use gas-mask according to the requirement, but 47% cannot. Result of multivariate and structural equation model analysis showed, individual knowledge had weak impact on gas-mask using behavior, but interpersonal and situation feature had strong impact. Support, norm, example and situation can affect gas-mask using behavior directly, or affect indirectly gas-mask using behavior through individual knowledge.

Structural equation model analysis of migrating workers sub-groups with different migration characteristics showed migrating time and willingness can adjust the gas-mask using behavior model. Leaving hometown time had impact on self-perceived advantages and self-perceived obstacles. Workers with shorter leaving hometown time believed the important advantage was wearing gas-mask can prevent occupational diseases, and worker with longer leaving hometown time believe the important advantage is preventing occupational diseases. This may show their difference on "risk preference", i.e., the shorter leaving hometown time, the higher risk preference, low risk to occupational diseases even without gas-mask and poor gas-mask using behavior. Correspondingly, workers with longer leaving hometown time had lower risk preference, and they think they had high risk to occupational diseases if without gas-mask. So they had good gas-mask using behavior. Migrating willingness can adjust the impact of self-perceived obstacle on self-efficiency. The impact of self-perceived obstacle on self-efficiency among workers with hope

of go back to hometown was stronger than the impact among workers who hope to stay in cities, i.e., when facing behavior obstacles, these obstacles would induce great impact on self-efficiency among workers hoping to go back hometown. However, the impact of obstacles on self-efficiency is relatively small among workers hoping to stay in cities. The possible reasons were, workers hoping go back to hometown regarded the present job as temporal and ignore long-term health risk and overlook the importance of gas-mask, but workers hoping to stay in cities, they take care of their health and more concern wearing gas-mask. This may be correlated to the difference of time preference.

2. Associated factors of in-need but missing doctor visit

19% of workers reported they had "in-need but missing doctor visit" in the past twelve months. Income and insurance had no directly relation with health service utilization.

Path analysis showed most of migration characteristics impact the missing doctor visit through social support and health status. Social support was the important medium variable of health service utilization. The direct migrating feature associated with "in-need but missing doctor visit" was migrating time. Compared with workers with shorter migrating time, workers with longer migrating time had higher odds of missing doctor visit. In addition, migrating time correlated with missing doctor visit through impacting health stature （need）. The indirect migration characteristics associated with missing doctor visit were migrating willingness and migrating behavior. Migrating willingness correlated with missing doctor visit through need. Workers hoping to stay in cities had poorer

health and they had more missing doctor visit. Migrating behavior associated with missing doctor visit through social support. Compare with individuals like migrant bird, long-term migrating individuals had advantages to establish local social relationship and get social support and they therefore had less missing doctor visit. Social support had direct and indirect relationship with "in-need but missing doctor visit", more social support, less missing doctor visit and higher utilization of health service. Social support would affect need, i.e., individuals with better social support were healthier （low need） and they had less missing doctor visit.

Social support was an important medium variable between migrating feature and health service utilization. This deepened our understanding on impact of migrating to occupational health and provided new thought for future intervention.

3. Associated factors of work ability

This study did not found the relation between age and total rate scores of work ability. Analysis on each dimension showed, scores of self-evaluated work ability and psychical resources had increasing trend along with the increasing of age, but there was no significance change on scores of health statue.

Work ability was associated with work environment. Migrating time, number of migrating cities and migrating units directly associated with self-evaluation of work ability. Individuals with longer migrating time, less migrating sites and having families accompanied had better self-evaluation on work ability. In addition, gas-mask using was also the medium between migrating cities and health self-evaluation. Migrating behavior indirectly correlated with health status. Long-term

migrating individuals were healthier than individuals like migrant bird. Migrating willingness directly correlated with psychical resources. Individuals hoping to stay in cities had poor psychical resources. This may attribute to the psychical pressure because of the gap between expectation of staying in cities and city nonadmission.

This study found migration characteristics, physical work environment and interpersonal situation affect work ability through affecting work support, social support, gas-mask using behavior and health service utilization. Workers with longer migrating time, having no families accompanied, living in cities in long-term and hoping to stay in cities were population with few social support, poor health, low utilization of occupational protection supplies and poor work ability which needed more concern. Regarding to migrant population policy, to improve social support for migrant workers, strategies including improving families migrating, improve support among colleagues, enlarge local social support network among migrant population may warrant.

第 一 章

流动工人迁移特征与
工作能力关系研究问题的提出