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Occupational health among undocumented and newly regularized migrants in Geneva

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Abstract:

Background: Due to their illegal status and the presence of a network in certain employment sectors the majority of undocumented and eligible or recently regularized migrants are led to work in so-called "3D jobs" (dangerous, dirty and degrading). "3D jobs" are low-paying jobs that require significant physical effort, which endangers their health. The objective of the present research is to better understand the influence of employment and working conditions on the self-rated health status of undocumented and recently regularized migrants in Geneva.
Methodology: This research is based on data collected during the first wave of the Parchemins project, an interdisciplinary longitudinal study that aims to prospectively monitor the socio-economic and health impact induced by the pilot public policy aiming at regularizing undocumented migrants in Geneva. Multivariate analysis were conducted in order to determine how employment and working conditions influence self-rated health.
Results: Of the 395 individuals included in this research, 204 were undocumented migrants. Newly regularized or regularization-eligible migrants were significantly more likely than undocumented migrants to report very good or excellent health. However, this association was no longer significant after controlling for working conditions variables. Overall, better health is related to better working conditions.
Conclusion: To conclude, we observe that self-rated health is more influenced by working conditions than by residence status.

Background

International migration is currently on the rise. Indeed, in 2019, the number of migrants was estimated to be 272 million. Although this figure represents only 3.5% of the world's population, it already exceeds the projections that were made for the year 2050, which were expected to be about 2.6% of the population or 230 million (1). Migrant workers are a specific group of migrants, yet there is no global consensus on the definition of a labor migrants. The term "migrant workers" is used to define the motivation for migration or refers to the legal status or employment of the migrant, making it difficult to approximate the size of the population (2). The International Labor Organization (ILO) defines migrant workers as a population living in an area other than their country of origin, who are working or seeking work in the host country, or were previously seeking work or employed. The ILO estimates that approximately two-thirds of the migrant population are migrant workers (3). The latter contribute significantly to global social and economic development, not only to the economy of their country of origin through remittances, but also by providing labor force and skills to the country of destination (4,5). Thus, migration is considered as a major economic, social, political, and global health issue. An aspect that influences the decision of migrating from their country is their desire to search occupational opportunities and earn money in order to improve their living conditions and those of their families, who may remain in their country (5,6). A part of the migrant workers is composed of undocumented migrants. The latter constitute a vulnerable population, given the fact that they remain largely unprotected (7). Indeed, in comparison to regular migrants (refugees, asylum seekers,...), who have a legal framework that protects them, undocumented migrants are vulnerable given their illegal status which results from the fact that they do not have a residence permit (8).

Researchers have shown that undocumented status has a direct significant and negative influence on migrant health. This negative effect can be seen in the anticipated stress which is caused by the risk or perceived risk of being targeted for deportation at any time (9–11). Additionally, the fear of deportation is reinforced by the lack of knowledge of the system.

Indeed, these two factors interact together, inhibiting undocumented workers from denouncing the dangerous and precarious living and working conditions they endure in sectors that are not regulated (12,13). Thus, the lack of legal status for irregular migrant workers makes them more vulnerable to coercion (6,14). Indeed, undocumented migrants are more likely to find themselves in conditions of employment that are prejudicial to their health, such as servitude, forced labor, human trafficking or slavery (6,15).

Furthermore, the negative impact on their health is reflected in the precariousness of their employment conditions. Due to their illegal status and the presence of a network in certain employment sectors the majority of them are led to work in so-called "3D jobs" (dangerous, dirty and degrading) such as the sector of the hotel, construction or domestic economy, as housekeepers, cleaners, cooks or in the care sector (14–16). These workers are often hidden from or invisible to the public eye and from public policy, yet they are at high risk of occupational hazards, discrimination and exploitation on a daily basis in the workplace. "3D jobs" are low-paying jobs that require significant physical effort, which endangers their health (17,18). The link between employment and working conditions and health has already been established by various authors (7,15,17,19,20). Schenker (21) has established high prevalence rates of severe neck and back pain among domestic workers, related to physical activity, work intensity and ergonomic constraints. Zock and al. (22) have found an increase in respiratory illnesses among people employed in the domestic economy as cleaners. In the same order of ideas, Elkeles and Seifert (23) observed that the precariousness of working conditions among immigrant workers led to psychological distress. Indeed, the effects of job insecurity on overall health and psychological distress are an added burden for migrant workers (24).
Thus, irregular employment conditions among this population may result in a higher incidence of chronic health problems. Yet, research on occupational health among undocumented migrant workers is lacking for several reasons, especially because this population lives with the obligation to be in the shadow and is consequently hard to reach. Moreover, due to the fear of being deported, this population tends not to report work-related abuses, so existing evidence are scarce (7,25).

Thus, this research aims to contribute on filling the knowledge gap on occupational health of undocumented and recently regularized migrants by examining the influence of employment and working conditions on self-rated health (SRH) among this population in Geneva. How are working conditions (e.g., exposure to hazards, physical hardship, job insecurity), as well as the terms of employment related to SRH? And to what extent can these factors explain SRH?

In February 2017, the State of Geneva, Switzerland, launched a pilot public policy called "Operation Papyrus". The aim of this operation was to clean up sectors of the economy particularly affected by illegal work and normalize the residence status of a specific group of undocumented migrants according to strict criteria (26). To be eligible for regularization, undocumented migrants had to meet the following criteria: not being registered as an asylum seeker, having lived continuously in Geneva for 10 years (5 years for a family with a school-age child), being financially independent (without social assistance), not having a criminal record and having a minimum language level of A2. Switzerland hosts between 58'000 and 105'000 undocumented migrants, of which 10'000 to 15'000 are in the Geneva area (18,27). Through this public policy, 2390 undocumented migrants, who met all the necessary requirements, were regularized (26).

Beyond the positive aspects for the State's economy (28), what were the impacts of this operation for the communities concerned by this regularization? The Parchemins study was

initiated in 2017 with the objective of evaluating the impact of regularization via Operation Papyrus on the health and socioeconomic conditions of undocumented migrants recently regularized in Geneva. The objective of the present research is to better understand the influence of employment and working conditions on the SRH status of undocumented and recently regularized migrants in Geneva.

Methodology

For conducting our research, we accessed the dataset collected during the first wave of the Parchemins project, an interdisciplinary longitudinal study on the living conditions and health of undocumented and migrants in Geneva carried out jointly by the University of Geneva and the University Hospital of Geneva. The aim of this study is to prospectively monitor the socioeconomic and health impact induced by the policy of regularization of the status for undocumented migrants in Geneva. For this purpose, the study followed the trajectories of 464 non-status residents over four years, half of whom undertook the Papyrus standardization procedure. The inclusion criteria for the Parchemins project were the following: the persons must be over 18 years old and of non-EU or non-EFTA origin, have lived in Geneva for at least 3 years without a residence permit, plan to stay in Geneva for at least 3 years, and not be registered as asylum seekers. Participant recruitment took place over a period of several weeks and in various settings such as the University Hospital of Geneva, which provides primary care to undocumented migrants in a specific unit. Trade unions and associations in contact with this population also contributed to recruiting participants for the study. The study administered a standardized face-to-face questionnaire to the two groups (regularized and non-regularized) and in the four most common languages within the Geneva immigration network: French, English, Spanish and Portuguese (18).

As this research focuses on the working conditions of undocumented or recently regularized migrants, unemployed individuals were removed from our sample and only those with a job were retained, leaving us with a sample of 395 people from the age of 20 to 73.

Dependent variable
In the context of this research, the dependent variable used is SRH. In epidemiological studies, it is common to use SRH as a measure. Indeed, this evaluation criterion is particularly popular in population-based studies such as the one of the present research (29,30). This concept was mobilized for its prognostic value in terms of physical and mental morbidity and mortality (30,31). SRH was measured using question 1 of the 12-Item Short-Form Survey (SF-12), which uses the 5-point Likert scale. The SF-12 is a multi-language validated measure of self-reported outcomes that assesses an individual's health. We were able to establish the variable SRH based on the following question that interviewees were asked: "Overall, do you think your health is (1) excellent, (2) very good, (3) good, (4) fair, or (5) poor?" We then recoded the variable by combining the modalities (3) good, (4) fair, and (5) poor which were coded as 0, and on the other hand, the modalities (1) excellent and (2) very good were coded as 1. The choice was made to group the third modality (3) good with those who answered fair or poor instead of very good or excellent.

Independent variables
Control variable
In order to assess the influence of working and employment conditions, we mobilized a series of variables related to this subject and selected control variables.

In order to consider the influence of residence status, a dichotomous variable measuring eligibility for regularization was created. Newly regularized migrants and migrants who had already submitted an application for regularization were grouped into a "regularized or regularization eligible group". Undocumented migrants who had not applied for regularization or were not eligible for Papyrus represented the "undocumented group" (or control group). This distinction was feasible because the applicants who fulfilled the criteria for regularization and had submitted one were guaranteed to be accepted and to receive a residence permit. On the other hand, those who wanted to apply but did not meet the criteria for acceptance were advised not to submit anything, given the risk of possible deportation in case of refusal. Sex, age, and origin were used as control variables as they potentially influence SRH.

The independent variables were selected using the existing literature on the subject. To measure working conditions, we included variables related to the professional activity and to working conditions. The first category encompasses the following variables: number of paid working hours per week (continuous variable), the salary per month (continuous variable), and the sector of employment (Domestic work, Construction, Hotel and catering, or Others).
Concerning the second category, the arduousness of the job was measured using a series of four questions that asked: How often does your job involve... : (1) Painful or tiring positions; (2) Lifting or moving heavy loads; (3) Standing; (4) Repetitive hand or arm movements. The response categories for these questions were never, rarely, often, or almost all the time. These variables allowed us to code the *job arduousness* variable and to define whether the job is not arduous, arduous, or very arduous.
Exposure to vibration, noise and harmful products was also included in our research. We created the variable *exposure to hazards* based on the following six questions: How often are you exposed in your job to...: (1) Vibrations caused by hand tools, machines, etc.; (2) Noises so loud that you have to raise your voice to talk to people; (3) High temperatures that make you sweat even when you are not working; (4) Low temperatures, whether inside or outside; (5) Harmful or toxic products (or substances): dust, industrial fumes, microbes, chemicals, etc.; (6) Passive smoking: inhalation of cigarette smoke from nearby smokers. The response categories for these questions were never, rarely, often, or almost all the time.
Burnout is a state of physical and psychological fatigue resulting from continuous work-related stress. Maslach developed a validated questionnaire using three dimensions to assess burnout: emotional exhaustion, depersonalization and loss of sense of personal accomplishment (32). In the present study, occupational mental health is evaluated using the emotional exhaustion dimension of Maslach's Burnout Inventory test. This dimension is assessed by asking 9 questions, such as "you feel emotionally exhausted by your work", or "you feel that you work "too hard" in your job". Items were rated on a 7-point frequency scale (0-6), such that more points on the emotional exhaustion indicated a higher likelihood of burnout. Scores ranged from 0 to 54, with 0 to 17, 18 to 36 and 37 to 54 indicating low, moderate and high emotional exhaustion respectively.
The issue of the difficulty of finding a job if the current one is lost was included in our study, as it may be a source of anxiety that influences self-rated health. The interviewees were asked : "If you lose your current position, would you find a comparable new position easily or with difficulty?" The possible answers were: very easily, easily, difficult, or very difficult. On this basis we created the variable *Opportunity in case of job loss* and recoded the very easy and easy modalities together and combined the difficult and very difficult modalities.
Satisfaction with working conditions was assessed by asking respondents their level of satisfaction with their working conditions. Respondents were asked to indicate a number from 0 to 10, with the minimum meaning they were not satisfied at all and the maximum signifying that they were completely satisfied. In order not to influence the results by transforming the

data into categorical variables based on interpretation, the decision was made to preserve the data on this variable as it is.

Given that studies have shown that abusive treatment in the workplace impacts health, as well as job satisfaction, we added a variable that takes into account discrimination and abuse related to age, gender, ethnicity, disability, verbal abuse, threats and humiliating behaviors, physical violence, intimidation, and sexual harassment (33).

Statistical analysis

The statistical software Stata was used to conduct univariate, bivariate, and multivariate analysis in order to a) explore whether there is an association between the dependent and independent variables (Table 1) and b) how employment and working conditions influence self-rated health. Bivariate analysis was conducted by performing chi square test or T test according the kind of variable. Additionally, Cramer's V indicating the strength of the association between self-rated health and categorical variables was used. Significance was established at $p < 0.05$. Hence, variables with non-significant bivariate association were dropped (not included in the multivariate analysis) and not further explained, except for the control variables that were non-significant that we kept in our regressions.

Multivariate models were tested to further analyze the strength and direction of the association between indicators of self-rated health, control variables, and independent variables. Models were tested stepwise, each with inclusion or exclusion of different variables. Table 2 shows a selection of different multivariate analysis models starting with the inclusion of variables related to the demographic control variables. In the second model, indicators for employment conditions were added, meaning number of working hours, salary and sector of employment. Finally, the third model embeds the complete selection of variables of this study. Model quality was estimated by calculating Akaike information criterion (AIC).

Results

Table 1 illustrates the final selection of variables used for the analysis. The table provides an overview of sample characteristics including corresponding percentages as well as the results of the bivariate analysis indicating the association between the independent and dependent variable. Of the 464 participants interviewed, we included 395 (85.1%) respondents in our analysis and removed 69 (14.9%) because of missing values or because they were unemployed. Of the 395 individuals included in this research, 204 (51.65%) are undocumented migrants. Age ranged from 20 to 73 years, with a median age of 43 years. The majority of the sample were women (75.7%), and most of the participants came from Latin America (63.1%) or Asia (21.3%, mainly from the Philippines). 62.8% of those interviewed rated their health as poor to good and only 37.2% reported being in very good to excellent health. Concerning the professional occupation, most of the people are employed in the domestic sector (77.5%), the median monthly salary is 2500 CHF (IQR = 1600) and the median for the number of weekly working hours is 35 (IQR = 21). 13.1% and 11.1% indicated high and moderate emotional exhaustion respectively. The median for satisfaction with working conditions is 7 (IQR = 4).

Regarding bivariate analysis, significant associations of moderate strength were found between SRH and the following variables: *status*, *origin*, *job arduousness*, *opportunity in case of job loss*, and *sector of employment*. A considerable majority of undocumented migrants (70.6%) indicate that their health is poor to good, while this percentage among newly regularized or eligible for regularization is only 54.4%. The median salary for individuals reporting poor or good health is 2300 (IQR = 1500), while the latter is 2700 (IQR = 1400) for those perceiving

themselves in either very good or excellent health. No association were found between SRH and *job exposure*, nor *maslach's emotional exhaustion*, nor *discrimination and violence at the workplace*.

Table 1. *Overview of the bivariate analysis between independent variables and dependent variable.*

| Independent Variables | Self-Rated Health | | Total | Sig. p | Cramer's V |
| | Poor to good | Very good to excellent | | | |
	N = 248 (62.8)	N = 147 (37.2)	395 (100)		
	n (%) or median (IQR)	n (%) or median (IQR)	n (%) or median (IQR)		
Status				0.001	0.17**
Undocumented	144 (70.6)	60 (29.41)	204 (100)		
Newly regularized or eligible for regularization	104 (54.4)	87 (45.6)	191 (100)		
Sex				0.128	
Female	194 (64.9)	105 (35.1)	299 (75.7)		
Male	54 (56.2)	42 (43.8)	96 (24.3)		
Age (years)	43 (16)	43 (15)	43 (15)	0.605	
Origin				0.001	0.21**
Latin America	179 (67.6)	86 (32.4)	265 (67.1)		
Africa	13 (81.3)	3 (18.7)	16 (4.05)		
East Asia	45 (53.6)	39 (46.4)	84 (21.3)		
Europe	11 (36.7)	19 (63.3)	30 (7.6)		
Salary per month	2300 (1500)	2700 (1400)	2500 (1600)	<0.001	
Number of working hours (hours)	32 (22)	37 (17)	35 (21)	0.132	
Job arduousness				0.017	0.14**
Not arduous	39 (50.0)	39 (50.0)	78 (19.7)		
Arduous	115 (63.2)	67 (36.8)	182 (46.1)		
Very arduous	94 (69.6)	41 (30.4)	135 (34.2)		
Exposure to hazards				0.575	0.05
Not exposed	150 (63.0)	88 (37.0)	238 (60.7)		
Exposed	80 (65.0)	43 (35.0)	123 (31.9)		
Very Exposed	17 (54.8)	14 (30.4)	31 (7.9)		
Maslach – Emotional exhaustion				0.057	0.12*
Low	179 (59.9)	120 (41.1)	299 (75.7)		
Moderate	29 (65.0)	15 (35.0)	44 (11.1)		
High	40 (76.9)	12 (23.1)	52 (13.1)		
Opportunity in case of job loss				<0.001	-0.20**
Easily	84 (51.2)	80 (48.8)	164 (41.5)		
Hardly	164 (71.0)	67 (29.0)	231 (58.5)		
Discrimination and violence in workplace				0.379	-0.05
Never experienced discrimination nor violence	186 (61.0)	119 (39.0)	305 (78.6)		
Experienced discrimination or violence	55 (66.3)	28 (33.7)	83 (21.4)		
Sector of employment				0.027	0.15**
Domestic work	201 (65.7)	105 (34.3)	306 (77.5)		
Construction	10 (37.0)	17 (63.0)	27 (6.8)		
Hotel and catering	22 (57.9)	16 (42.1)	38 (9.6)		
Others	15 (62.5)	9 (37.5)	24 (6.1)		

Satisfaction employment conditions (from 0-10)	7 (3)	8 (2)	7 (4)	<0.001

Cramer's V: * weak association, ** moderate association, *** strong association

IQR : interquartile range

Table 2 provides the results of the logistic regression models for the association between the SRH and demographic characteristics. The first model contains the control demographic variables only. The second model adds the variables related to the occupational activity. Finally, model (3) contains all variables of interest including the ones on working conditions.

The findings of model 1 suggest that migrants newly regularized or eligible for regularization were significantly more inclined than undocumented migrants to declare being in very good to excellent health (aOR: 2.00; 95% CI: 1.30-3.07). Similarly, the results for people from East Asia (aOR: 1.86; 95% CI: 1.11-3.12) and those of European origin (aOR: 3.29; 95% CI: 1.34-8.07) were significant with greater odds to report better self-rated health. When adding the variables related to occupational activity (Model 2), the findings for people from Europe are no longer statistically relevant. However, significance is preserved for the eligibility to regularization and for people of East Asian origin. The coefficient related to salary is also significant, yet the intensity of its influence on SRH is almost zero. Finally, a multivariate analysis including all variables of interest was tested (Model 3). In this model, the association between SRH and with qualification for regularization and salary is no longer significant. Coming from East Asia still has a significant influence on SRH. People from this region (aOR: 1.79; 95% CI: 1.04-3.10) are more likely to report being in very good to excellent health. The association between job arduousness and SRH is also significant. People who have an arduous job (aOR: 0.52; 95% CI: 0.29-0.95) and those with a very arduous job (aOR: 0.43; 95% CI: 0.22-0.86) tend to be less likely to report being in very good to excellent health. Thus, the more arduous the job is considered to be, the less people report being in very good to excellent health. Job satisfaction is significantly and positively associated with SRH. The more satisfied people are with their jobs (aOR: 1.16; 95% CI: 1.03-1.30), the more it increases the odds that they perceive their health as better. People who expect to have difficulty finding a new job similar to the one they have if they lose their current job (aOR: 0.60; 95% CI: 0.37-0.97) are less likely to report very good or excellent health.

Regarding the Akaike information criterion, the inclusion of the complete volume of items present the best model fit (AIC score 498). The pseudo R also goes in this direction by suggesting a better fit for the third model, which presents a pseudo R of 0.114.

Table 2. *Overview of the multivariate analysis between independent variables and dependent variable.*

	Self-rated health					
Variables (reference)	**Model 1** aOR (95% CI)	**p-value**	**Model 2** aOR (95% CI)	**p-value**	**Model 3** aOR (95% CI)	**p-value**
Status (Undocumented)						
Newly regularized or eligible for regularization	2.00 (1.30, 3.07)	0.002	1.61 (1.02, 2.54)	0.040	1.47 (0.91, 2.37)	0.117
Sex (Male)						
Female	0.90 (0.51, 1.58)	0.709	1.22 (0.56, 2.61)	0.617	1.11 (0.51, 2.42)	0.798
Age	1.01 (0.98, 1.03)	0.607	1.01 (0.99, 1.03)	0.511	1.00 (0.98, 1.03)	0.756
Origin (Latin America)						
Africa	0.45 (0.12, 1.65)	0.226	0.48 (0.13, 1.79)	0.226	0.42 (0.10, 1.67)	0.217
East Asia	1.86 (1.11, 3.12)	0.018	1.90 (1.13, 3.22)	0.016	1.79 (1.04, 3.10)	0.037
Europe	3.29 (1.34, 8.07)	0.009	2.01 (0.55, 7.44)	0.293	1.44 (0.37, 5.56)	0.595

	aOR (95% CI)	P	aOR (95% CI)	P
Number of paid working hours	0.99 (0.97, 1.01)	0.164	0.99 (0.97, 1.01)	0.433
Salary	1.00 (1.00, 1.00)	0.007	1.00 (0.99, 1.00)	0.067
Sector of employment (domestic work)				
Construction	1.36 (0.28, 6.59)	0.705	1.82 (0.36, 9.21)	0.469
Hotel and catering	1.44 (0.55, 3.74)	0.456	1.58 (0.60, 4.21)	0.357
Other	1.30 (0.48, 3.54)	0.608	1.16 (0.41, 3.32)	0.781
Job arduousness (Not arduous)				
Arduous			0.52 (0.29, 0.95)	0.033
Very arduous			0.43 (0.22, 0.86)	0.017
Maslach – Emotional exhaustion (Low)				
Moderate			1.41 (0.65, 3.08)	0.384
High			0.88 (0.39, 1.95)	0.744
Opportunity in case of job loss (Easily)				
Hardly			0.60 (0.37, 0.97)	0.036
Satisfaction employment conditions			1.16 (1.03, 1.30)	0.013
AIC	507.74		508.37	498.08
Pseudo-R^2	0.053		0.071	0.114

P-Value : *p>0.10 ; **p>0.05 ; ***p>0.01
aOR: adjusted Odds Ratio
95% CI : 95% Confidence Interval

Discussion

The aim of this study is to determine the relationship between working conditions and self-rated health among undocumented migrants and migrants in the process of being regularized or recently regularized in Geneva. Only few studies, such as the one carried out by Sousa et al. (15) in Spain, have investigated such subject. Similar to our findings, Sousa et al. (15) reported that self-rated health was determined more by working conditions than by residential status. Indeed, while eligibility for regularization is statistically and significantly associated with self-rated health in Models 1 and 2, when adjusted with working conditions (Model 3), the association loses its significance. One potential explanation may be the relationship between the time elapsed since migration and legal status. Undocumented migrants receiving regularization have a longer history and experience of cumulative precariousness than more recently arrived undocumented migrants. Moreover, regularization may be a source of improvement in their situation, but they still remain in a position of vulnerability. Obtaining a permit can also act as a catalyst for expressing the effects of their previous, more precarious situations by bringing up memories of their previous undocumented living situation that they may feel retroactively (15). Another reason may be that regularization is associated with new material and immaterial concerns, including payment of taxes and compulsory health insurance as well as compliance with the conditions for renewal of the residence permit (34). These concerns can induce stress and anxiety, and thus lead to a decline in the perception of their own health. The healthy immigrant effect does not apply here, because it usually disappears after 3 years (15,35) and the shortest period of residence in Switzerland in our sample is 5 years.

The observed association between satisfaction with working conditions and health are consistent with the results found by Pikhart et al. (36) in their quantitative research with 285 individuals which measured self-assessed health of irregular immigrants in the Czech Republic.

The latter, as our results show, highlighted the positive effect of satisfaction with employment conditions on self-perceived health.

Consistent with our observations, studies on physical and psychosocial conditions support our prediction that the physical arduousness of work negatively affects self-rated health, while psychosocial factors, such as the Maslach score, have little or no effect on self-rated health (37,38). However, as noted by Hämmig and Bauer (39), the literature regarding the effects of psychological work demands or psychosocial work factors on health is more vague and less uniform. No relationship between exposure to hazard and self-rated health was identified. As Ahonen et al. (20) pointed out in their study of immigrant workers' perceptions of their working conditions in Spain, the majority of our sample are women working in the domestic sector, so they regularly perform similar tasks in their paid jobs and in their homes. This may lead to a diminished perception of risk, explaining the absence of a relationship with self-rated health. On the other hand, according to Buchmüller and al. (40), consumers' knowledge in general about the potential risks specific to household chemicals is low, meaning that people in our sample are not necessarily aware of the impact of product exposure on their health.

We have to emphasize that the present research focuses on self-rated health, a subjective measure that has been successful in assessing physical morbidity and mortality. Yet, this measure does not reflect objective health status. Thus, our results suggesting that exposure to hazards does not decrease self-rated health do not mean that exposure to hazards does not negatively affect the objective health status of the population studied. Indeed, several studies have indicated a relation between the exposure to toxic products and dust among household cleaners and health. Such exposure is associated with an increased risk of developing respiratory problems, including asthma (22,41).

The difficulty of finding a new job is linked to the precarious conditions in which undocumented migrants or those who are eligible for regularization work and evolve. Moreover, this population must live in invisibility, reinforcing this difficulty. On the one hand, as the studied population work in hidden economy, employers can exploit them. Indeed, the contractual conditions of employment are not always clearly defined and the lack of legal protection makes it possible to be fired at any time. On the other hand, the association between self-assessed health and the difficulty of finding a job in case of loss of the one held could possibly be explained by financial necessity, especially for undocumented migrants who live in invisibility without the possibility of applying for state aid because of the risk of being deported. This financial necessity can also explain this association for migrants eligible for regularization or recently regularized, given that financial independence is required to obtain eligibility for regularization or renew a residence permit. Thus, the difficulty of finding a job can present itself as a factor of anxiety diminishing self-rated health (20,42). Further research, including qualitative research, on this issue could shed light on the way it influences self-rated health.

While Vianello (43), in her qualitative research regarding migrant women working as home helpers in Italy, showed an association between self-rated health and work-related discrimination and abuse, our results predict that abuse and discrimination are not significantly associated with self-rated health. In contrast to Pikhard et al. (36) who determined that gender was statistically and significantly related to self-perceived health by stating that the risk of reporting poor self-rated health was higher for women, our results, similar to the ones of Bauer et al. (17), suggest that gender does not influence self-rated health.

The present study is not without limitations. Firstly, the cross-sectional nature of the data reduces the ability to assess the causality of the observed associations, as it does not consider changes over time in the self-rated health status of the studied population, which can fastly evolve as shown by Ronellenfitsch and Razum (44) in their article "Deteriorating health satisfaction among immigrants from Eastern Europe to Germany". In addition, we analyzed

results from the first wave of the study, making it difficult to evaluate not only the impact of regularization on health, but also its influence on work due to the short time since the regularization. Secondly, we adopted a quantitative approach, and did not conduct any qualitative methods, which may result in a different perception and understanding of the analysis. Indeed, throughout the data collection, we observed contradictions from several participants. For example, some interviewees were describing difficult working conditions, but gave a high score to the question on satisfaction regarding working conditions. This constitutes a bias that impacts the results of the study and that has to be considered in our analysis and interpretation. Finally, as Burton-Jeangros et al. (34) point out in their research including the same sample as ours, the study is purposive and likely represents only a portion of this population, namely the ones that are more related to the associations and institutions through which their enrollment occurred.

Despite these limitations, the Parchemins project and the present study shed light on an invisible population. The sample is relatively unique in a field where quantitative research is scarce, thereby such studies contribute to further knowledge about the health and socioeconomic conditions of undocumented and recently regularized migrants.

Conclusion

To conclude, we observe that self-rated health is more influenced by working conditions than by residence status. Hence, policies should implement systems to control working conditions in these sectors, which remain largely unregulated. This paper is intended as a starting point for future research on the occupational health of immigrants in Switzerland, and more specifically in Geneva. Advancing research on factors influencing self-rated health among migrants considered legal or illegal could be a valuable resource for shaping and improving health policy. As highlighted by Benach et al. (6), comparing documented and undocumented immigrant workers can contribute to a more comprehensive understanding of the health consequences of legal status. Recognizing that non-permanent workers are exposed to physical, mental, and social problems, we should discuss various ways to improve conditions of non-permanent workers and solve the imbalance in employment status. Finally, further research is needed to evaluate the long-term impact of the regularization of legal status on working conditions and health.

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