

# Part-time work among nursing students of Sohag University, Egypt

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## ABSTRACT


**Background:** The last years spectacle an increase in the number of full-time nursing students joining in paid work, and the number of working hours during the study that may affect students health, the causes for the increasing numbers of full-time students in paid work are usually approved to be driven from increasing the expenses related to study and the fluctuations in the funding system. **Objective:** The objective of the study was to evaluate the prevalence, magnitude, and nature of part-time work among undergraduate nursing students of Faculty of Nursing and students of Nursing Institute at Sohag University. **Materials and Methods:** This is a cross-sectional study that was performed through the academic year 2018–2019. **Results:** The prevalence of part-time work among the studied nursing students was 41.3%, the associated factors which found to be significant in contributing for working among students are being male ( $P < 0.001$ ; adjusted odds ratio [AOR] 3.1; 95% [CI: 2.19–4.7]), and father having basic education only ( $P = 0.02$ ; AOR 2.3; 95% [CI: 1.39–2.7]) was independently associated with students' employment. About 56.9% of the participants work for financial support and 32.4% work to gain experience; exposure to physical hazards and biological hazards was the utmost common health hazards reported by working nursing students, musculoskeletal complaints were the most recurrent occupational health effects (80%). **Conclusion:** Working among nursing students becomes a common phenomenon that has a positive and negative impact, it leads to gaining clinical experience among students through working but at the same time, they are at a risk of exposure to physical, biological, and mechanical hazards.

**KEY WORDS:** Nursing; Part time; Hazards

## INTRODUCTION

The last years spectacle an increase in the number of full-time students joining in paid work and the number of working hours during the study.<sup>[1]</sup> A recent survey in Europe displayed that in many nations, more than 60% of students are working and their income from work has been spent to cover their expenses either living or study expenses. The working student rate in Europe is around 47%.<sup>[2]</sup> A survey from Australia on nursing student revealed that 75% of the students have a part-time job during

their study and they are spent about 13 h per week in the job, a study from the United Kingdom showed equivalent finding, an online survey from Royal College of Nursing showed that more than 80% of nursing students work about 10 h weekly,<sup>[3]</sup> a study from Ireland showed that more than 90% of students worked during their studies as health-care assistance,<sup>[4]</sup> an Egyptian study on 2017 carried out on nursing students at Mansoura University showed that 23.3% of the students are working during the study.<sup>[5]</sup> The causes for the increasing numbers of full-time and part-time students in paid work are usually approved to be driven from increasing the expenses related to study and the fluctuations in the funding system.<sup>[3]</sup> Recent research declared that separately from the financial benefits, working students stated that they have better self-confidence, self-esteem, consideration of the business world, and skills development as again of paid labor.<sup>[5]</sup> Students also notice that paid labor will enrich their curriculum vitae, preparing them for future careers

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and access to full-time work after their graduation from the university, thus making them more employable;<sup>[6]</sup> moreover, the outline of university students has come to be more malleable, it is now open to students who are more motivated to work during their study.<sup>[5]</sup> Nevertheless these benefits, studies also declared negative influences on the safety and well-being of working students, these include greater stress levels, a decrease in leisureliness and social activities, and many hazards health effects that may affect young age workers include cuts, injuries sprains/strains, low back pain, and exposure to chemical substances, causing injurious health effects. According to the National Institute for Occupational Safety and Health (NIOSH), 359 workers died due to work-related injuries in 2009 (NIOSH 2013), young workers have superior injury rates than working adult elaborated in comparable employments.<sup>[7]</sup> Undergraduate nursing students are increasingly engaging in paid work, spending less time on campus to cover their living expenses and studies, it may assist them in raising their nursing skill and expand their nursing clinical experience,<sup>[5]</sup> this may lead to missing some classes and handing in projects lately,<sup>[8]</sup> many other studies elaborate poorer academic performance to be linked with increasing numbers of hours spent in paid work more than 16 h.<sup>[9]</sup> While some researches have reported an improvement in academic performance of the nursing students who are involved in paid work <16 h/week during their studies,<sup>[10]</sup> separately from the side effect on students academic performance, nursing workers in health institute are bare to many work-related hazardous factors.<sup>[11]</sup>

To the best of our knowledge, there are a few numbers of researches that had been carried out on undergraduate nursing students involved in part- or full-time work in Upper Egypt.

## Objective

We conducted this study to evaluate the prevalence, magnitude, and nature of part-time work among undergraduate nursing students and to determine the occupational health effect on the nursing students.

## MATERIALS AND METHODS

This is a cross-sectional study that was performed on nursing students of Faculty of Nursing and students of Nursing Institute at Sohag University during the academic year 2018–2019.

## Setting

This study was conducted at Faculty of Nursing and Nursing Institute at Sohag University.

## Study Participants and Sampling

All students of the final year of Faculty of Nursing and final year of Nursing Institute of Sohag University were asked to participate in the study. Among 235 and 200 students from

faculty of nursing and nursing institute, respectively, 193 and 173 students completed the questionnaire, the overall response rate was 84%.

## Data Collection Procedure

At the end of their lectures, nursing students were asked to participate in the study after the explanation of the aim and content of the questionnaire to them. We distributed the questionnaire between the students who decided to participate in the study.

## Study Instrument

Data were collected through a self-administered questionnaire which consists of three modules. The first module about social and demographic data of the studied nursing student and their families (age, gender, type of study whether nursing institute or faculty of nursing, residence, parental education, parental employment, socioeconomic status as viewed by the student, and number of members in the family). The second module began with a question about whether the participants practice a part-time work or not. Participants who work were asked to answer question about work profile which included age at start of work, type of work whether voluntary or paid, place of work, time and duration of work, work seasonality, and work hours per day. The third module of the questionnaire was about reasons of work while studying, occupational health hazards of work and health effects of work.

## Ethical Consideration

The Ethical Committee at Sohag Faculty of Medicine approved the study. We explained all the study details to the students before taking informed consent to insurance of the confidentiality of the data.

## Statistical Analysis

We used the SPSS version 22 software program to analyze the data. We used Pearson's Chi-square test to identify the differences between working and non-working students regard the studied educational type and sociodemographic variables. Binary logistic regression analysis was used to study the individual effects of demographic and type of education on students' employment. For evaluating the effect of a number of variables on student employment, we used univariate and multivariate logistic regression analysis. Variables that were statistically significant in the univariate regression analysis were included in the multivariate logistic regression analysis. All *P*-values were two-sided and the significance level was set at <0.05.

## RESULTS

Out of 366 nursing students enrolled in the current study, 140 students were male (38.2%), their age ranged between 18

and 25 years, the mean was  $21 \pm 1.3$  years and the majority of the students resided in rural area (70.7%). The students were nearly equally distributed between faculty of nursing and nursing institute (52.7% and 47.3%, respectively). The prevalence of part-time work among the studied nursing students was 41.3% (151 students) [Figure 1].

Table 1 displays the relation between sociodemographic characteristics and nursing students employment; on which the number of working students was significantly higher among male students (58.6%), students at nursing institute (48.6%) and students whose fathers had basic education only (51.6%), while there is no significant difference was found between working and non-working students as regard place of residence, maternal education, parents job, family size and socioeconomic level.

In Tables 2 and 3, we tried to identify the predisposing factors for working among these students. Factors found to be significant after univariate analysis were evaluated for possible association and interaction by multivariate logistic regression analysis. The overall finding of this model indicated that being male had more exposure to work ( $P < 0.001$ ; adjusted odds ratio [AOR] 3.1; 95% [CI: 2.19–4.7]), father having basic education only ( $P = 0.02$ ; AOR 2.3; 95% [CI: 1.39–2.7]) was independently associated with students' employment.

Table 4 shows work profile of the studied ever working nursing students about half of the studied subjects practiced nursing related jobs which was practiced by the majority of males (82%) compared to only 13% of the females,  $P < 0.05$ . The most common workplaces were hospitals (33.7%) followed by non-medical workplaces (29.8%) with significant gender difference as 58.3% of the female students worked in hospital versus 59.7% of the males who worked in other places. Most of the students (92.7%) worked paid work and more than two-thirds of the students (66.9%) worked more than 8 h/day with

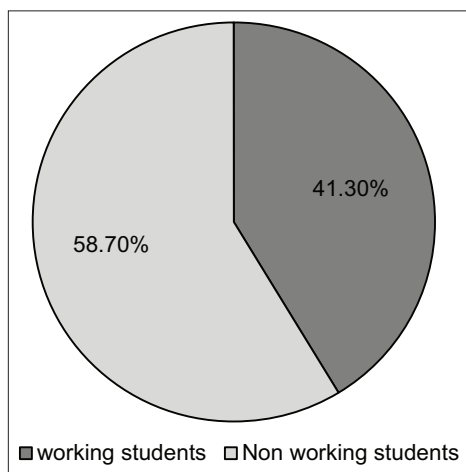
no statistically significant gender difference. As regard work seasonality, slightly higher proportion of the students (57%) worked throughout the year with a statistically significant gender difference and worked for more than 8 h (67% and 66.9%, respectively).

In Figure 2, more than half of the studied subjects (56.9%) reported that the reason of work was financial support while work to gain experience was reported by 32.4% of them.

Exposure to physical hazards (noise and heat) was the most common health hazards reported by ever working students (33.1%) followed biological hazards (like infections) (22.5%) and mechanical hazards (17.2%) as some of them worked in

**Table 1:** Relation between sociodemographic characteristics and nursing students employment at Sohag University 2019

| Characteristic              | Non-working students<br>(n=215), n (%) | Working students<br>(n=151), n (%) | P      |
|-----------------------------|--|------------------------------------|--------|
| <b>Sex</b>                  |  |                                    |        |
| Man                         | 58 (41.4)                              | 82 (58.6)                          | <0.001 |
| Woman                       | 157 (69.3)                             | 69 (30.7)                          |        |
| <b>Type of education</b>    |  |                                    |        |
| Faculty of nursing          | 126 (65.3)                             | 67 (34.7)                          | 0.007  |
| Nursing institute           | 89 (51.4)                              | 84 (48.6)                          |        |
| <b>Residence</b>            |  |                                    |        |
| Urban                       | 46 (43)                                | 61 (57)                            | 0.6    |
| Rural                       | 105 (40.5)                             | 154 (59.5)                         |        |
| <b>Father's education</b>   |  |                                    |        |
| Basic education             | 62 (48.4)                              | 66 (51.6)                          | 0.006  |
| Secondary school            | 71 (60)                                | 47 (40)                            |        |
| University                  | 82 (68.3)                              | 38 (31.7)                          |        |
| <b>Father's occupation</b>  |  |                                    |        |
| Governmental work           | 132 (58.9)                             | 92 (41.1)                          | 0.6    |
| Private work                | 23 (52.3)                              | 21 (47.7)                          |        |
| Other                       | 60 (61.2)                              | 38 (38.8)                          |        |
| <b>Mother's education</b>   |  |                                    |        |
| Basic education             | 118 (59.6)                             | 80 (40.4)                          | 0.2    |
| Secondary school            | 54 (52.9)                              | 48 (47.1)                          |        |
| University                  | 34 (59.6)                              | 23 (40.4)                          |        |
| <b>Mother's occupation</b>  |  |                                    |        |
| Housewife (R)               | 125 (41.5)                             | 176 (58.5)                         | 0.8    |
| Working mother              | 26 (40)                                | 39 (60)                            |        |
| <b>Family size</b>          |  |                                    |        |
| ≥5 members                  | 135 (59)                               | 94 (41)                            | 0.4    |
| <5 members                  | 80 (58.4)                              | 57 (41.6)                          |        |
| <b>Socioeconomic status</b> |  |                                    |        |
| Low                         | 16 (48.4)                              | 17 (56.6)                          | 0.1    |
| Medium                      | 186 (60)                               | 124 (40)                           |        |
| High                        | 14 (60.9)                              | 9 (39.1)                           |        |



**Figure 1:** Prevalence of part-time work among nursing students in Sohag University 2019

construction business. Both chemical and psychological hazards were reported by 13.9% of the studied subjects [Figure 3].

**Table 2:** Univariate logistic regression analysis of factor that affects working among of nursing students

| Predictor            | P      | Adjusted OR (95% CI) |
|----------------------|--------|----------------------|
| Gender               |        |                      |
| Man                  | <0.001 | 4.51 (2.17–5.69)     |
| Woman                |        | -                    |
| Type of education    |        |                      |
| Faculty of nursing   | 0.21   | -                    |
| Nursing institute    |        | 0.77 (0.48–1.24)     |
| Residence            |        |                      |
| Urban                | 0.7    | -                    |
| Rural                |        | 1.07 (0.60–1.70)     |
| Father’s education   |        |                      |
| Basic education      | <0.001 | 2.6 (1.09–4.47)      |
| Secondary school     |        | 1.16 (0.32–1.14)     |
| University           |        | -                    |
| Father’s occupation  |        |                      |
| Governmental work    | 0.03   | 0.54 (0.309–961)     |
| Private work         |        | 0.57 (0.273–1.224)   |
| Other                |        | -                    |
| Mother’s education   |        |                      |
| Basic education      | 0.162  | 1.7 (0.8–4.6)        |
| Secondary school     | 0.4    | 0.77 (0.37–1.6)      |
| University           |        | -                    |
| Mother’s occupation  |        |                      |
| Housewife (R)        | 0.7    | 0.91 (0.52–1.59)     |
| Working mother       |        | -                    |
| Family size          |        |                      |
| ≥5 members           | 0.9    | 1.01 (0.65–1.54)     |
| <5 members           |        | -                    |
| Socioeconomic status |        |                      |
| Low                  | 0.5    | 0.68 (0.206–2.303)   |
| Medium               | 0.4    | 1.43 (0.552–3.747)   |
| High                 |        | -                    |

OR: Odds ratio, CI: Confidence interval

**Table 3:** Final model of multivariate logistic regression analysis

| Predictor          | P      | Adjusted OR (95% CI) |
|--------------------|--------|----------------------|
| Gender             |        |                      |
| Man                | <0.001 | 3.1 (2.19–4.7)       |
| Woman              |        | -                    |
| Father’s education |        |                      |
| Basic education    | 0.02   | 2.3 (1.39–2.7)       |
| Secondary school   | 0.3    | 1.3 (0.75–2.28)      |
| University         |        | -                    |

OR: Odds ratio, CI: Confidence interval

Musculoskeletal complaints were the most frequent occupational health effects (80%), arm and hands were the most frequent sites (4.4%) then back (30.4%) followed by legs and feet (26.4%) and neck (21.85), while 59.6% of the students suffered from sleep disorders in the form of insufficient sleep and 13.2% occupational infections [Table 5].

**DISCUSSION**

Our study designated to estimate the prevalence of working among nursing students and to explore some of the factors associated with working in Sohag University. The bulk of our study participants was females, the mean age was 21 ± 1.3 years and the majority of the students resided in rural area (70.7%). The students were nearly equally distributed between faculty of nursing and nursing institute. Similar to our results, in a study of Salamonson and Andrew,<sup>[10]</sup> the mean age of participants was about 25 years and 90% of nursing students were women in their study which is similar to our results.

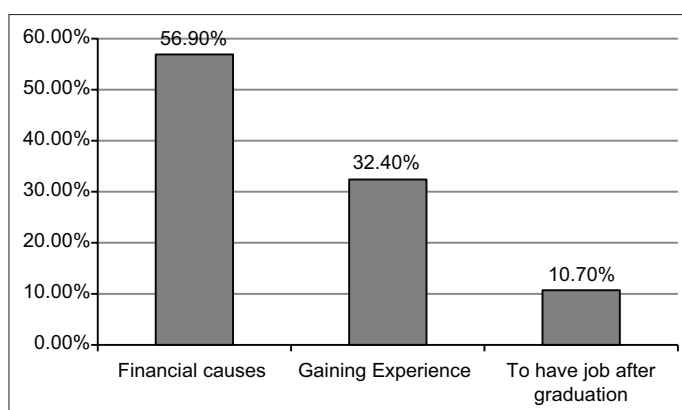
The prevalence of part-time work among the studied nursing students in our study was 41.3%. This was close to the results of Hasson *et al.*<sup>[4]</sup> who found that two-fifths of the study participants worked part time during the study. In their study, all working students were employed in health-care units and had gained more clinical experiences. This outcome reflects previous national and international research consequences showing that nursing students are involved in part-time work in health-related positions,<sup>[3,10,12]</sup> and this is in agreement with our result on which half our study participants work in nursing related job, especially in hospitals, also in the study of Abou-Elwafa *et al.* clarified that nursing students stated that the health institutes were the most frequent workplace (57.1%),<sup>[5]</sup> this is higher than a previous study of part-time employment among nursing.<sup>[13]</sup>

The students in the research reported that the reasons for working are financial support, to gain experience and to guarantee job after graduation, in Hasson *et al.* study, students who started paid nursing related job, recognized a number of benefits from their job, for example, financial gain, chance to develop nursing skills, gaining more confidence, and exposure to the nursing roles in practice; furthermore, it also improves the level of clinical experience that helps them to gain work after graduation.<sup>[4]</sup> Several authors have stated similar advantages of students job experience.<sup>[12,14,15]</sup>

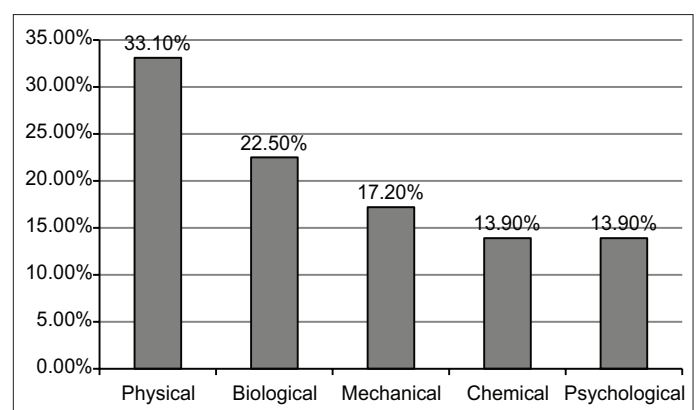
In our study, students’ labor was significantly more prevalent between male students and among students whose fathers had basic education only. While no significant difference was found between working and non-working students as regard place of residence, maternal education, parents’ job, and socioeconomic status. In the same line with our results, many studies displayed that male students are more likely to

**Table 4:** Work profile of ever working nursing students in Sohag University 2019

| Characteristics              | Summary statistics |                     |                       | P      |
|------------------------------|--------------------|---------------------|-----------------------|--------|
|                              | Total=151, n (%)   | Males (n=82), n (%) | Females (n=69), n (%) |        |
| Age at start of work (years) |                    |                     |                       |        |
| <15                          | 30 (19.9)          | 27 (33)             | 3 (4)                 | <0.001 |
| 15–18                        | 54 (35.8)          | 34 (41.4)           | 20 (29)               |        |
| >18                          | 67 (44.8)          | 21 (25.6)           | 46 (67)               |        |
| Field of work                |                    |                     |                       |        |
| Nursing related              | 75 (49.6)          | 15 (18)             | 60 (87)               | <0.001 |
| Non-nursing related          | 76 (50.4)          | 67 (82)             | 9 (13)                |        |
| Type of work                 |                    |                     |                       |        |
| Paid work                    | 140 (92.7)         | 73 (89)             | 67 (97)               | 0.2    |
| Voluntary/unpaid work        | 11 (7.3)           | 9 (11)              | 2 (3)                 |        |
| Place of work                |                    |                     |                       |        |
| Hospital                     | 61 (33.7)          | 21 (25.6)           | 40 (58.3)             | <0.001 |
| Private clinics              | 27 (15.9)          | 5 (6)               | 22 (32)               |        |
| Pharmacy                     | 11 (7.2)           | 7 (8.5)             | 4 (5.7)               |        |
| Other                        | 50 (29.8)          | 49 (59.7)           | 3 (4)                 |        |
| Time of work                 |                    |                     |                       |        |
| Morning                      | 51 (33.8)          | 46 (56)             | 5 (7.2)               | <0.001 |
| Evening                      | 51 (33.8)          | 29 (35.5)           | 22 (31.9)             |        |
| Shift                        | 49 (32.4)          | 7 (8.5)             | 42 (60.9)             |        |
| Work seasonality             |                    |                     |                       |        |
| During summer                | 65 (43)            | 46 (56)             | 19 (27.5)             | <0.001 |
| Throughout the year          | 86 (57)            | 36 (44)             | 50 (72.5)             |        |
| Work hours/day               |                    |                     |                       |        |
| <8                           | 50 (33.1)          | 34 (41.5)           | 16 (23)               | 0.08   |
| >8                           | 101 (66.9)         | 48 (58.5)           | 53 (77)               |        |



**Figure 2:** Reasons for work among ever working nursing students in Sohag University 2019



**Figure 3:** Prevalence of occupational health hazards reported by ever working nursing students in Sohag University

be involved in the labor while studying. The effect of gender on working during the study is more country specific and it is affected by culture, women are more likely to be involved in home activities and take care of young children.<sup>[16]</sup>

We tried to identify the predisposing factors for working among the students. The overall finding after univariate and multivariate regression analysis indicated that being male had

more exposure to work and father having basic education only was independently associated with students' employment. Parallel to our findings, results of logistic regression analysis in Abou-Elwafa *et al.* study,<sup>[5]</sup> who showed that being male and belonging to a family of a lower education level were associated with working during the study. However, the research of Australian students stated that personal characteristics did not affect working.<sup>[17]</sup> Furthermore, our



**Table 5:** Frequency of reported occupational health effect by ever working nursing students in Sohag University

| Reported health effects    | n (%)     |
|----------------------------|-----------|
| Musculoskeletal complaints |           |
| Neck pain                  | 33 (21.8) |
| Arm/hand                   | 52 (34.4) |
| Back                       | 46 (30.4) |
| Leg/feet                   | 40 (26.4) |
| Sleep disorders            | 90 (59.6) |
| Occupational infection     | 20 (13.2) |
| Total                      | 151 (100) |

results are not the same as a study on full-time undergraduate students at the University of Glasgow, in which there was no significant difference between genders as regard working.<sup>[18]</sup> This might be due to Egyptian culture, in which males should go for work while females stay at home after study hours to take care of the children.

Most of the students in our survey (92.7%) worked paid work and more than two-thirds of the students (66.9%) worked more than 8 h per day (about 48 h or more per week), and the higher proportion of the students (57%) worked throughout the year. In a study done by Rochford *et al.*, students worked about 16 h weekly, though there was extensive variant in the number of working hours with a proportion of students stating that, sometimes, they worked more than 30 h weekly,<sup>[3]</sup> these long time working joined with lectures attendance at college point to that students are spending very long time conjoining work and studying that affects their academic performance for nursing practice and their health. Moreover, the outcomes in the study of Rochford *et al.*<sup>[3]</sup> Salamonson and Andrew<sup>[10]</sup> stated that nursing students work more than 16 h per week have less academic performance than non-working students or students work <16 h for each week. Actually, all kinds of paid work had unfavorable influence on academic outcome, many researchers reported that fatigue as a consequence of working for long time has been connected with decreased college attendance.<sup>[19]</sup>

In the current study, exposure of the students to physical hazards (noise and heat) was the most common health hazards reported by working students (33.1%), followed by biological hazards, mechanical hazards, and chemical and psychological hazards. Similar to our findings, Pope presented that noise and high and low temperatures were the most common physical hazards described by working students.<sup>[20]</sup> Furthermore, in a research involved nursing students worked at the emergency care unit in a Brazilian university hospital, students stated that they contacted various chemical composites during work and this affects their health initiating many health hazards.<sup>[21]</sup> These conclusions are parallel to 1998 NIOSH reports that stated that more than 60% of job-related injuries to workers occur during eating and drinking preparation. These injuries

may have resulted from common hazards in restaurants, include sharp tools to prepare food, holding hot grease from fryers, working close to hot surfaces, dropping objects into hot grease, cleaning the grill or fryer, and slipping on wet floors.<sup>[22,23]</sup> Other studies have stated that a large percentage of injuries among young workers occur during preparations of food.<sup>[24,25]</sup>

Musculoskeletal complaints were the most recurrent occupational health effects (80%), arm and hands were the most frequent sites then back followed by legs and feet and neck. These results are in the same line with a study among nursing students in Korea where musculoskeletal complaints at anybody site were described by 73.3% of the study participants. The most frequently reported sites were the shoulder, lower back, neck, feet, and lower legs.<sup>[26]</sup>

### Strength and Limitation

We acknowledge three limitations in our research; we included participants from the 2<sup>nd</sup> year only which limit the generalization of our results to all nursing grades, as well as, the self-administrated questionnaire can lead to self-reporting bias that may influence the reliability of the results and could be subjective to students own awareness of health situations and risks, and some recall bias could be established. Although of these limitations, our research explored some predictors that may drive the students to work while studying in Upper Egypt, we in need for additional researches to be directed to this area to improve the finding.

### CONCLUSION

Working among nursing students becomes a common phenomenon. There are advantages and disadvantages to part-time working; it has a positive effect on gaining clinical experience among students through working but at the same time, they are at a risk of exposure to physical biological and mechanical hazards as reported by the students, also musculoskeletal complaints were the most recurrent occupational health effects. It could be a valuable tool to conduct occupational health and safety program in the course of nursing education, as many job-related health effects seem like to be changeable.

### ACKNOWLEDGMENTS

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