

Describing the health behaviours of future nurses: a cross-sectional study among Italian nursing students

Cristina Arrigoni¹, Anna Maria Grugnetti², Rosario Caruso³, Federica Dellafiore³, Paola Borelli⁴, Maria Cenzi², Luisa Gallotti¹, Carlo Signorelli⁵

¹ Department of Public Health, Experimental and Forensic Medicine, Unit of Hygiene, University of Pavia, Pavia, Italy; ² IRCCS Policlinic San Matteo Foundation Pavia, Pavia, Italy; ³ Health Professions Research and Development Unit, IRCCS Policlinico San Donato, San Donato Milanese, Italy; ⁴ University of Pavia, Department of Public Health, Experimental and Forensic Medicine, Unit of Biostatistics and Clinical Epidemiology, Pavia, Italy; ⁵ San Raffaele Hospital, University "Vita e Salute", Milan, Italy

Summary. Academic environments may influence the achievement of healthy behaviors in nursing students. However, the lifestyles among Italian nursing students have been poorly investigated. Therefore, the aim of this study was to describe the health behaviours of Italian undergraduate nursing students. A monocentric, cross-sectional, study design was performed. The study was conducted in an undergraduate nursing course in the north of Italy (University of Pavia). Data were collected through the list of freshmen in nursing in March 2018 (i.e. first years of the undergraduate program) using an online survey and a purposive sampling, where 134 nursing students were enrolled. The results highlighted that the nursing students observed a varied and balanced alimentation. The most problematic areas are referred to the physical activity and the smoking habits. Future research should frame the trajectory of the undergraduate nursing students over the overall education path, also promoting and testing strategies to address the observed issues, such as limited physical activities and smoking habits. (www.actabiomedica.it)

Key words: health behaviours, healthy lifestyle, nursing students

Introduction

The research emphasized that nurses should be fit to healthy lifestyle behaviours, considering that the working shifts and the demands of care delivering play as important risk factors for the overall health of nurses (1-4). Accordingly, the International Council of Nurses (ICN) invited nurses to improve their lifestyles, particularly in paying attention to balanced meals, daily physical activities, and in decreasing the consumption of alcohol and tobacco (5). Further, nurses' capacity to maintain a good health status seems to be associated to the capacity in leading behavioural changes in their patients (6).

Some authors also demonstrated that the levels of distress among nurses are stable over time, starting from their undergraduate education (7). It seems that

the academic environment is linked to the achievement of healthy behaviours in nursing students, acting as a facilitator in stimulating the self-awareness of the need of performing healthy behaviours (8). Currently, half of the nursing students are overweight or obese and about 40% of them has no interest in performing physical activity (9). Undergraduate students are also exposed to several risk factors, such as the consumption of alcohol and tobacco, improper diet, low levels of physical activity (10, 11).

Although the health behaviours among nurses were described by recent research (12), the literature has reported lower attention in describing lifestyles among nursing students (8). Understanding the health behaviours of future nurses has an important impact on the prevention capacity of the university environ-

ments (13, 14). As per Italy, there is a paucity of recent data describing health behaviours in nursing students, undermining the optimal understanding of the phenomena. For this reason, the aim of this study was to describe the health behaviours (i.e. nutrition, physical activity, alcohol and tobacco usage) of Italian undergraduate nursing students.

Methods

Study design, population and data collection

A monocentric, cross-sectional, study design was performed. The study was conducted in an undergraduate nursing course in the north of Italy (University of Pavia). Data were collected through the list of freshmen in nursing in March 2018 (i.e. first years of the undergraduate program). Data collection was carried out using a web-based online survey. Each student obtained from their e-mail the personal credentials to have access in the survey, with the login information and the letter of invitation to participate in the study. The survey was created using ASPMaker, which allowed the creation of active server pages to build the database and ensuring anonymity. Further, the following inclusion criteria were used: (a) the ability to read and speak fluently in Italian; (b) no diagnosis of psychiatric or cognitive problems; and (c) more than 18 years old.

Measurements

Data collection through the online survey was performed by the research team using the following questionnaires:

- Demographic and clinical characteristics questionnaire. This section was designed to collect demographic characteristics (such as gender, age, nationality) and other information related to the structure of their house, living with other people, transportation used to go to the University and the place in which the students have or bring their lunch. In addition, weight and height of the students were collected in order to calculate their Body Mass Index (BMI).
- Healthy Lifestyle questionnaire. This questionnaire was validated in Italian, developed by

Turconi and colleagues (15), and modified by Fonte and colleagues (2014) (16). It investigates food-related habits, physical activity and lifestyle of the nursing students. The instrument is self-report and divided into five main sections:

- Section A: Frequency of Food Consumption. It contains eight items aimed at investigating the weekly frequency of consumption of Italian typical foods, such as bread, pasta, cereal products, fruit and vegetables, meat, fish, eggs, cheese and legumes. Alcoholic drinks (i.e., wine and beer) were also investigated. The weekly frequency of consumed food and the beverage was measured with a four steps Likert scale (1=never; 4=always) and were regrouped in two main categories: “rarely” if the score is three or less; “often” if the score is 4 or 5.
- Section B: Food Habits. It consists of 14 items. This section was designed to investigate the food habits of the nursing students, in particular related to breakfast contents, number of meals per day, daily consumption of fruit and vegetables and soft alcoholic beverages. The score assigned to each items ranges from 1=*never* to 4=*always*.
- Section C: Physical activity and Lifestyle. It contains five items aimed at investigating the overall lifestyle, physical activity levels and their weekly frequency. The score assigned to each items ranges from 1 to 4.
- Section D: Smoking. This section consists of six items aimed at investigating the nursing students’ smoking habits. The items describe if the nursing students smoke, the age of smoking start and the daily number of cigarettes. Two items were aimed at former smokers, in order to ask since when they quit smoking and the former daily number of cigarettes.

Ethical considerations

This study obtained the approval from the Academic Board of the University of Pavia. The study was

conducted in full accordance with both the international ethical principles and the Italian legal and research requirements for non-interventional studies. All the participants were informed about the aim and the methodology of the study and they were asked to provide a written informed consent. Participants were also informed about the confidentiality of their answer and the anonymous nature of their answers and data.

Data analysis

Descriptive statistics were used to describe demographic and clinical characteristics of the sample and the results of the assessed questionnaires. Categorical data were presented by frequencies, means \pm standard deviation ($M \pm SD$) while continuous data non-normally distributed as for median \pm interquartile range (25° - 75° percentile). The association between variables were compared using (a) Pearson's χ^2 tests for dichotomous variables in the univariate analysis, and (b) using The Student's t-test for parametric values. All data were analysed using software EpiInfo™, version 3.5 and Microsoft Excel, and the level of significance of each test was set at 0.05 and two-tailed.

Results

A sample of 180 nursing students was enrolled in this study with a purposive sampling strategy, but only 134 (response rate=74%) nursing students took part in data collection. Table 1 describes the socio-demographic characteristics stratified by BMI, the sample was stratified in normal weight (NW) when BMI is

inferior of 24.99 and overweight or obese (OW) with a BMI over 25.

In addition, the data showed that the majority of nursing students lived in apartments or house, specifically 85.29% with NW and 90.63% of OW; while 4.9% of NW and 9.38% of OW lived in single or multiple rooms and only 9.8% of NW lived in college (P-value=0.116). Finally, 44.12% of the NW and 34.38% of OW lived with other students, and 50.98% of NW and 50% of OW lived in the family. Only 4.90% on NW and 15.63% on OW lived alone (P-value=0.116). The sample declared that they consumed meals at home (57.46% of NW and 59.38% of OW), in the university refectory (30.39% of NW and 18.75% of OW), or in bar or bistro (12.74% of NW and 21.88% of OW) (P=0.070).

The transportation services used more frequently by the students to go to the university were cars (19.61% of NW and 15.63% of OW), trains (15.69% of NW and 28.13% of OW) and busses (50.98% of NW and 43.75% of OW), while 13.72 of NW and 12.49 of OW go to the university by foot or using bicycles. The results also showed that 25% of NW and 18% of OW followed training courses regarding lifestyles, and some of which during their paths in the secondary education (86% of NW and 83% of OW) (P-value=0.435).

The results of the Healthy Lifestyle instrument are showed, divided by the four specific sections. Table 2 reports the frequencies of food consumption (section A) performed by the sample, stratified by BMI.

Regarding food habits, the results showed that the 70.15% of nursing students had breakfast, 71.57% of NW and 53.13% of OW consume the three main

Table 1. Socio-demographic characteristics of the sample (N=134) stratified by BMI

	Normal weight (n;%) (n=102)	Overweight and obese (n;%) (n=32)	P-value
Gender			
Men	23 (22.55)	6 (18.75)	0.349
Women	79 (77.45)	26 (81.25)	
Nationality			
Italian	86 (84.31)	18 (56.25)	0.001
Foreign	16 (15.69)	14 (43.75)	
Age (M; SD)	22 \pm 5	23 \pm 6	0.103

Table 2. Statistics descriptive of frequency of food consumption (section A) in the sample (N=134) stratified by BMI

Foods	Normal weight (n;% (n=102)	Overweight and obese (n;% (n=32)	P-value
Bread, pasta, cereal products			
Rarely	26 (25.49)	9 (28.13)	0.493
Often	76 (74.51)	23 (71.88)	
Meat			
Rarely	14 (13.72)	2 (6.25)	0.569
Often	88 (89.28)	30 (93.75)	
Fish			
Rarely	97 (95.1)	32 (100)	0.427
Often	5 (4.90)	0 (0.00)	
Eggs			
Rarely	37 (53.92)	14 (43.75)	0.328
Often	47 (46.08)	18 (56.25)	
Cheese and dairy product			
Rarely	27 (26.47)	10 (31.25)	0.048
Often	75 (73.53)	22 (68.76)	
Legumes			
Rarely	37 (36.27)	11 (34.37)	0.155
Often	65 (63.72)	21 (65.63)	
Fruit and vegetables			
Rarely	37 (36.27)	16 (50)	0.627
Often	65 (63.72)	16 (50)	
Wine and beer			
Rarely	7 (6.86)	3 (9.38)	0.574
Often	95 (93.14)	29 (90.63)	

meals (P-value=0.036). In particular, 46.88% of OW students stated that they rarely consume two portions of fruit or vegetables per day, while 36.27% of NW students consumed it frequently (P-value=0.315). Then, the daily drink of 1/1.5 litres of water was reported by 45.10% of NW students and by 50% of OW students (P-value=0.723). 67.73% of NW students and 62.50% of OW students stated to have a variegated daily diet (P-value=0.518).

The results of section C, describing the Physical activity and Lifestyle of nursing students, showed that only 36.27% of NW students and 15.63% of OW students carried-on physical activities with consistency (P-value=0.105). Then, only 33.33% of NW students and 31.25% of OW students spent their free time walking, and 19.61% of NW students and 9.38% of OW students play sports. Table 3 shows the time that students spent in a sitting position.

Regarding the nursing students' smoking habits, 58.21% of NW students and 56% of OW students declared themselves as smokers. Table 4 shows the nursing students' smoking habits, stratified by BMI.

Discussion

This study described health behaviours in an Italian sample of undergraduate nursing students of the north of Italy. The characteristics of the enrolled nursing students share a number of anthropometric similarities with the ones of the Italian young general population. As highlighted by our results, 76% of the sample had a normal BMI. This result is consistent with the data of the National Institute for statistics on the Italian young population with age between 18 and 34 years (ISTAT, 2016). However, the prevalence of OW

Table 3. Statistics descriptive of daily time spent by nursing students in sitting position, stratified by BMI

Daily time in sitting position	Normal weight (n;% (n=102)	Overweight and obese (n;% (n=32)	P-value
≥6 hours	1 (0.98)	0	0.814
5-6 hours	7 (6.86)	1 (3.13)	
3-4 hours	34 (33.33)	11 (34.38)	
1-2 hours	60 (58.82)	20 (62.50)	

Table 4. The nursing students' smoking habits, stratified by BMI

	Normal weight (n;% (n=102)	Overweight and obese (n;% (n=32)	p-value
Age of beginning smoke			0.814
By 5 years	27 (93.1)	10 (90.9)	
By 10 years	2 (6.90)	1 (9.09)	
Age of beginning smoke			0.053
12-18 years	5 (13.51)	5 (38.46)	
19-40 years	32 (86.49)	8 (61.54)	
Daily number cigarettes			0.094
<10 cigarettes	28 (80)	6 (54.55)	
10-20 cigarettes	7 (20)	5 (45.45)	

students in our study (24%) is slightly higher than the national average (20%) (17).

Also, the levels of physical activity are quite similar to the ones reported by ISTAT for the same age group (42% sedentary, 58% physically active) (17). The same description emerged by the Mooney and colleagues (18), declaring that 33% of the students are active, 38% of them are moderately active and 29% of the students are sedentary. Keller and colleagues (19) showed that 40% of the German university students practised physical activity on a regular basis. The percentage of physical activity with a regular basis increased in Spanish (ranging from 54% to 58.4%) (20), and among students from Irish (67.71%) (10). These differences could be explained by cultural characteristics, as well as by differences in the services provided by the universities to prevent sedentary lifestyles.

Considering dietary habits, OW students declared to take less daily carbohydrates than NW students. This aspect should be investigated more deeply in future research. Conversely, in the study of Fonte (2014) (16), almost 90% of the sample declared to eat carbohydrates two times per day. It also emerged that NW nursing students consumed more dairy products

on a daily-basis than OW students (47.06% versus 34.38%; $p=0.038$). In fact, 71.57% of the sample that took the three main meals every day, are NW and 53.13% are OW. Fonte and colleagues affirm that about 30% of the sample do not consume breakfast every morning.

Another important peculiarity of this study was given by smoking habit (32.84%), which was greater than the prevalence reported in the general population of students (20%) (17). However, our results are similar to the findings of some international description of smoking in nursing students (18, 20). This topic requires high attention, considering that smoking is often associated with the majority of risky behaviours (21).

The main limitation of this study is represented by the small number of participants enrolled and the convenience sampling. Moreover, the study was focused on nursing students during the first year of their studies, so it did not represent the trajectory of lifestyles over time. Accordingly, the cross-sectional nature of the data represents a major limit. The results could be generalized with caution for the monocentric approach of the study.

Conclusions

This study provided some crucial hints and new knowledge regarding health behaviors and the risk factors performed by Italian undergraduate nursing students. Although the nursing students observe a varied and balanced alimentation, they referred to perform limited physical activity, also reporting high rates of smoking habits. Future research should frame the trajectory of the undergraduate nursing students over the overall education path, and also should suggest and test the strategy to address the most critical aspects related to health behaviours and the risk factors in undergraduate nursing students.

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Correspondence:

Rosario Caruso, PhD, RN

Head of Health Professions Research and Development Unit

IRCCS Policlinico San Donato

Via Agadir, 20-24 - 20097 San Donato Milanese, Italy

Tel. +39 0252774940

E-mail: rosario.caruso@grupposandonato.it