

POLICE STUDENT NUTRITIONAL BEHAVIORS

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Abstract: *Introduction.* A career in law enforcement is physically and mentally demanding, contributing to increased health risks and occupational stress. Physical activity and healthy eating are beneficial for maintaining a healthy weight and preventing many chronic health conditions (e.g. heart disease, cancer). While most police students must pass a fitness exam to enter training and again before becoming sworn police officers, it is unclear whether academy training prepares officers to develop healthy dietary habits for their careers. This study aimed to investigate typical dietary habits of police students at the University of Criminal Investigation and Police Studies, Belgrade, Serbia, and determine ways to improve officer education in healthy eating. *Methods.* A sample of police students ($n = 137$, 36.5% female) of average age 20.2 years participated in a survey to evaluate their typical dietary habits. Descriptive statistics were used to describe their nutritional behaviors. *Results.* Overall, the results suggest that most students make good nutrition decisions. The majority (78.1%) of students reported using alcohol responsibly, and 74.45% drank water between meals, though only 6.6% of students ate enough fruit every day. Almost all (98.5%) understood the importance of diet, but only 11.7% received nutrition-related information from a school source. *Conclusion.* Results suggest that police student training should include nutritional education and physical preparation for holistic police officer development. This approach could help prevent poor health outcomes for police officers.

Keywords: police education; dietary habits; nutrition; Serbia

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INTRODUCTION

Police officers are first responders who play a critical public role, and their work is inherently stressful (Violanti et al., 2017). It is well documented that stress can be mitigated through healthful behaviors such as participating in regular exercise and eating a nutritious diet (Habersaat et al., 2015). Most officers must pass a physical fitness test to be eligible to begin formal police academy training, and diet and exercise play a significant role in their baseline fitness. A passing score on the physical fitness test is required to become a sworn officer. Afterward, many police agencies incorporate annual physical fitness tests to motivate officers to remain physically ready for police duty. While this practice may have an acute positive impact on officers' behavior, it may not have long-term power to help officers maintain or improve physical fitness.

Once an officer enters the police force, physical fitness and physical activity typically decrease. At the same time, body fatness can increase over time spent in service (Ćopić et al., 2020; Kukic et al., 2019; Lagestad et al., 2014; Lagestad & van den Tillaar, 2014), resulting in a population that may be less prepared to respond to an incident or altercation (Orr et al., 2018). Combining nutrition intervention with exercise was found to be highly effective in reducing body fatness of police officers (Demling & DeSanti, 2000; Kukić & Čvorović, 2019). Although many studies that implement healthy dietary and exercise behaviors have shown beneficial results that improve and maintain physical fitness, exercise and nutrition education have not been considered as essential parts of police training.

It is especially concerning that healthy nutritional behavior is typically absent from police academy training and continuing education even though it is a primary factor for optimal fitness and health (Bytomski, 2018). Poor nutritional choices can result in detrimental body composition changes and fundamental nutrient imbalances, including lacking minerals or vitamins, excess body fat, and decreased skeletal muscle mass (Kukic et al., 2018). These changes could negatively impact officers' physical performance, leading to decreased readiness for duty as fat mass increases, metabolism decreases, or skeletal muscle mass is insufficiently developed (Kukić & Dopsaj, 2016). Officers' fitness for duty is paramount to their ability to protect and serve, but their education on health-related topics is lacking.

Despite a lack of formal education on health-related topics, success in policing jobs also depends on a combination of knowledge from various fields such as forensics, law, technology, cyber security, and interrogation. Therefore, the curriculum for the education of police education students needs to include all of these areas, requiring the distribution of classes in specific proportions (Koropanovski et al., 2020). The distribution of course content varies within police academies, and often, the designated number of classes is not sufficient for the breadth of material that needs to be studied. Time and resource constraints dictate that some areas of study may be prioritized over others. Indeed, overall police officer job performance only occasionally depends on physical performance (Anderson, 2001; Anderson & Plecas, 2000), encouraging police academies or universities to consider a passing score on a physical fitness test as satisfactory for this area of job performance. Accordingly, applied classes are usually planned as physical training (PT) sessions rather than health education classes. Performing PT is not a substitute for learning necessary information on how to maintain healthy lifestyle habits, including nutrition education. The consequences of this practice are evident in current research that describes an overweight police officer population that lacks tools to improve their well-being (Ramey et al., 2012).

Police academy training must evolve to address the myriad factors that affect officers' ability to perform (Blumberg et al., 2019). This study aimed to investigate typical dietary habits of police students at the University of Criminal Investigation and Police Studies, Belgrade, Serbia, and determine ways



to improve officer education in healthy eating. Current physical education curriculum does teach students how to implement exercise in their lifestyle after they become sworn officers (Koropanovski et al., 2020; Kukić et al., 2019), but it does not provide nutrition information. For instance, the weekly schedule of specialized physical education includes developing self-defense tactics, use of force skills, and strength and conditioning. A considerable amount of time is spent teaching students the practical implications of strength and conditioning, but not how to do it independently. Moreover, students spend some strength and conditioning classes in a classroom for the lectures on exercise. As part of their specialized physical education exam, they need to pass the theoretical part as well. Nutrition and healthy living classes may help improve officer well-being and foster skills that combat stress and burnout after students complete their studies and become sworn officers. The purpose of this paper is to describe current police academy nutrition behaviors.

METHODS

Participants

One hundred thirty-seven adults (87 men and 50 women) enrolled in a university-level police academy volunteered for the study. The average age of the participants was 20.2 ± 3.0 yrs. ($F = 20.3 \pm 4.1$ yrs., $M = 21.2 \pm 1.0$ yrs.). Participants' average height was 178.1 ± 7.7 cm ($F = 170.2 \pm 7.7$ cm, $M = 182.6 \pm 7.8$ cm). On average the participants had a body mass of 73.7 ± 11.1 kg ($F = 62.5 \pm 11.5$ kg, $M = 80.1 \pm 10.9$ kg) which corresponds to a BMI of 23.1 ± 2.2 kg/m² ($F = 21.6 \pm 2.3$ kg/m², $M = 24.0 \pm 2.1$ kg/m²). Study participants were required to pass a physical fitness exam before entering the academy. Only students from the first year of studies ($n = 24$) were housed on campus during the week. The study aim was explained at the beginning of the questionnaire, while the first question was "Do you consent to participate in this study?". Only respondents whose replies were "Yes" were included in the analysis. The study was approved by the Ethical Board of the University of Criminal Investigation and Police Studies, Belgrade, Serbia.

Measures

Students' dietary habits were assessed using a dietary questionnaire on food habits, eating behaviour, and nutritional knowledge (Turconi et al., 2003). This instrument was shown to have moderate reliability (Cronbach alpha = 0.55-0.75) and very good temporal stability (Turconi et al., 2003). More importantly, it is low in cost, easy to administer, and could be appropriately modified to fit the needs of the investigated population. The questionnaire was translated to Serbian language and prepared in an electronic version. Students completed the questionnaire on a computer in the University's computer lab with the researcher's supervision to ensure that the students understood each question. If something was not clear to students, they could ask the researcher for clarification.



Analyses

Statistical procedures were conducted using Statistical Package for Social Sciences (SPSS, 20.0, IBM, US). The frequency analyses were conducted for breakfast, fruit intake, deserts, alcohol to calculate the ratio of students who replied to eating and drinking habits with “Always,” “Often,” “Sometimes,” and “Never.” A frequency analysis was also conducted for nutritional knowledge, where the ratio of students was calculated for how much they know (i.e., “A lot,” “Enough,” “Little,” “Basic things”) and what were the primary sources of information (i.e., school, TV shows, scientific literature).

RESULTS

Descriptive statistics of key variables are shown in Table 1. Participants’ nutritional status was determined using BMI calculations. One hundred and ten students were of normal weight (F = 46 [92%], M = 64 [74%]), while 27 students were classified as overweight (F = 4 [8%], M = 23 [26%]). No students were considered underweight, and no students had a BMI great than 30 (class I obesity). Men were more likely to be classified as overweight, but these findings should bear the caveat that muscular individuals may be classified as overweight/obese due to the weight of their muscles (Kukić et al., 2018). Table 2 shows the absolute frequency of students’ responses regarding nutritional habits. No student reported typically not taking breakfast; fewer students “Always” consume fruits, and most students do not typically consume alcohol. The relative frequency of responses showed that female and male students were mostly similar in their habits (Figure 1). The highest difference occurred in fruit consumption, where a larger proportion of males reported to “Never” consume fruit.

Table 1. Frequency of key nutritional variables.

| Frequency | Breakfast Frequency | | Fruit Intake | | Dessert Consumption | | Alcohol | | Water Consumption | | Milk and Yogurt Consumption | |
|-----------------------|---------------------|----|--------------|----|---------------------|----|---------|----|-------------------|----|-----------------------------|----|
| | M | F | M | F | M | F | M | F | M | F | M | F |
| M = 87 F = 50 | | | | | | | | | | | | |
| Always (Every Day) | 52 | 30 | 6 | 3 | 4 | 2 | 1 | 0 | 58 | 31 | 28 | 11 |
| Often | 26 | 18 | 25 | 16 | 19 | 6 | 2 | 0 | 22 | 12 | 33 | 18 |
| Sometimes | 9 | 2 | 52 | 23 | 52 | 31 | 16 | 11 | 6 | 6 | 23 | 19 |
| Never (Not Typically) | 0 | 0 | 4 | 8 | 12 | 11 | 68 | 39 | 1 | 1 | 3 | 2 |



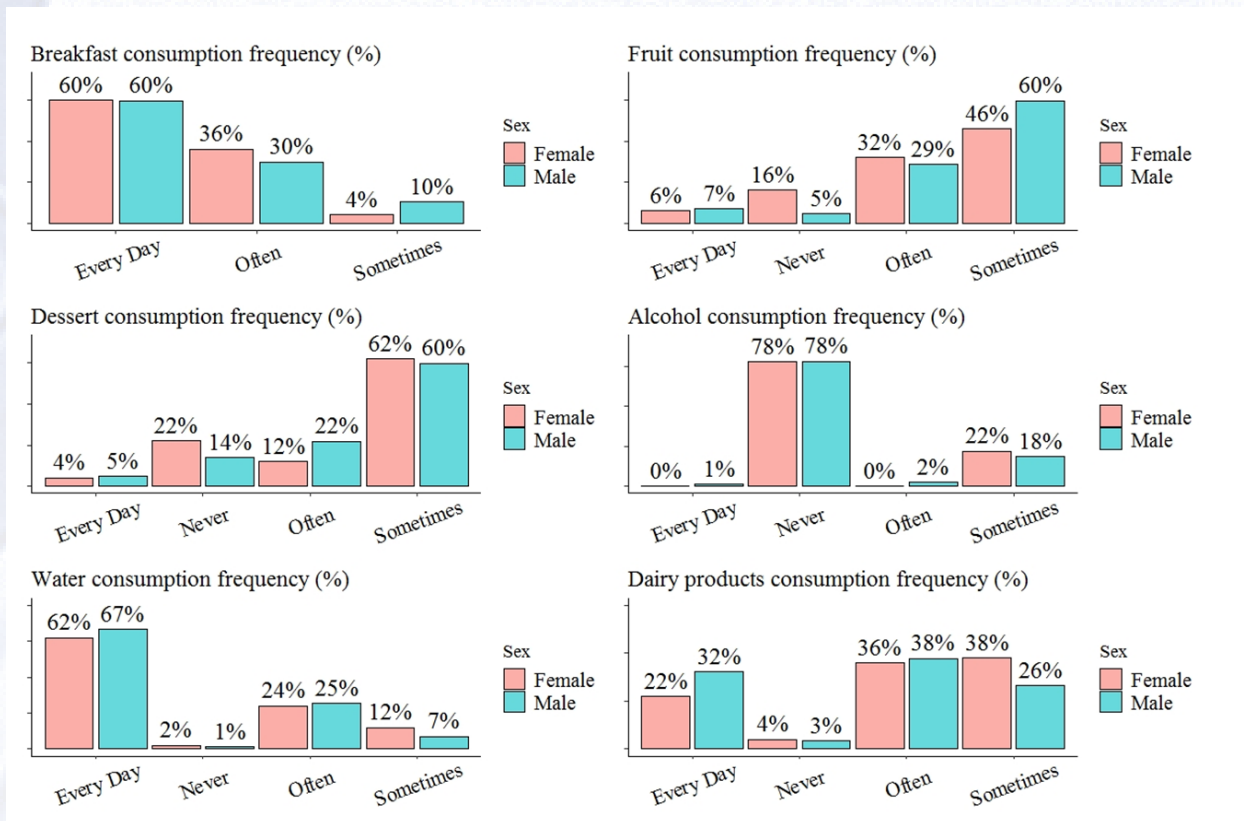


Figure 1. Relative frequency (%) of responses regarding nutrition and fluid intake for both sexes.

Students’ comfort with nutritional topics varied, but most (%) indicated that they knew “Enough” or “A lot” about nutrition. Table 2 highlights the students’ self-rated nutrition knowledge and information sources. Almost all (98.5%) understood the importance of eating a healthy diet.

Table 2.

| Frequency | Nutrition Knowledge | | Frequency | Nutrition Source | |
|------------------|---------------------|----|---------------------------------|------------------|----|
| M = 87 F = 50 | M | F | M = 87 F = 50 | M | F |
| A lot | 21 | 9 | I learned at school. | 12 | 4 |
| Enough | 37 | 20 | From the Internet or TV shows. | 45 | 17 |
| Little | 6 | 3 | I do not think about nutrition. | 2 | 3 |
| Basic Things | 23 | 18 | From home. | 25 | 22 |
| | | | Scientific literature. | 3 | 4 |



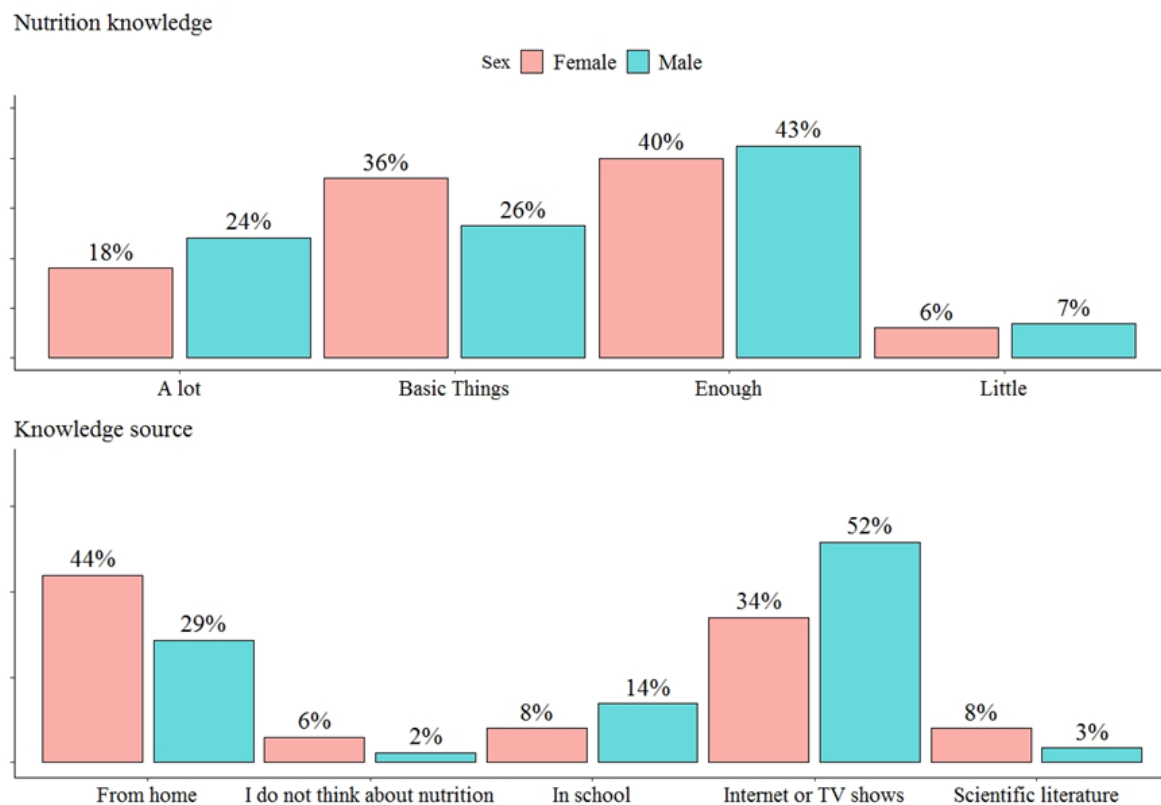


Figure 2. Relative frequency (%) of responses regarding the perception of nutrition knowledge and sources of nutrition knowledge.

DISCUSSION

This study investigated the nutritional habits, nutrition knowledge, and sources of knowledge of police students. The main findings suggest similar nutritional and fluid intake habits of male and female students. Students reported reasonably good habits, except for fruit intake, where only a tiny proportion of students reported consuming fruit “Every day.” Even when it comes to “Often,” only 30% of students report consuming fruits often (i.e. three to four times per week). Although many students reported having breakfast regularly, about 30-36% reported eating breakfast often, while few students eat breakfast sometimes. A similar trend could be observed in water consumption as well. About 23% of students reported knowing “Little” or “Basic things” about nutrition, while approximately 7% do not think about nutrition at all. Females mostly knew about nutrition from home, while males used the Internet and TV shows. However, more importantly, a tiny proportion of students used scientific literature to source information on nutrition. Considering this, the space for improvement in nutritional habits exists. A relatively small quantity of educational classes could improve nutrition knowledge, serving as a good foundation for conscious changes in students’ behavior.

Police officers play a critical and public role that requires physical readiness; however, police academy education insufficiently prepares officers to maintain or improve their physical fitness. Current research calls for police academy education reform (Blumberg et al., 2019). While this is a step in the



right direction, it is critical to describe police academy students' comfort with health-related topics, including nutrition. It is dually essential to document students' nutritional habits to increase the efficacy of targeted educational interventions. It is well documented that nutritional habits and behaviors positively affect officers' overall health and well-being (Bytomski, 2018). Thus, examining police academy students' self-reported dietary habits begins to elucidate the needs of this particular population.

The police students enrolled in a university-level police academy reported encouraging dietary habits. Unfortunately, these habits have not been widely reported in police officer populations. For example, the majority of students reported never drinking alcohol. However, numerous studies describe problem drinking in police populations (Can & Hendy, 2014; He et al., 2005; Ménard & Arter, 2014). The majority of our study population was classified as normal weight, but it is documented that police officer fatness increases over time (Kukić et al., 2020; Kukić et al., 2019; Vuković et al., 2020). These findings suggest a discrepancy between the nutritional habits of police students as compared to habits of police officers. The stressful nature of police work is well documented (Acquadro et al., 2015; McCreary et al., 2017; Violanti et al., 2017). Stress coping strategies may include unhealthy dietary behaviors such as over-eating, binge drinking, and other habits that may lead to weight gain (Can & Hendy, 2014). Academy-based nutritional training that teaches officers the importance of maintaining a healthy diet and implementing a healthy diet in their lifestyle may help mediate negative dietary behaviors that lead to overweight officers.

Few students reported scientific literature as a primary source of nutrition information. Most students reported learning nutrition information from their parents or the Internet or TV shows. Similarly, Quaidoo et al. (2018) reported online resources as the primary source of nutrition information in young adults in Accra. On the contrary, several studies report community-based initiatives as primary sources of nutritional information in college-aged adults (Chalmuri et al., 2018; Colozza, 2021). This represents the space where adding institutional education with carefully chosen information could be of great value as university professors would choose only viable information they would update regularly.

Study limitations include the cross-sectional design and use of a self-reported dietary recall measure. As a cross-sectional study, we only studied a snapshot of students' dietary habits. Implications for future research include longitudinal design that follows police academy students as they transition into their career as police officers noting changes in dietary habits over time. We must also note the potential for reporting error even though our study employed a dietary questionnaire with proven reliability (Turconi et al., 2003). Nonetheless, several studies have found recall of dietary intake in self-reported measures inaccurate (Lemacks et al., 2019; Wallace et al., 2018; Wehling & Lusher, 2019).

CONCLUSION

Police academy training must evolve to address specific health-related gaps in officers' knowledge. Police academy trainees report comfort with health-related topics and healthful nutritional habits. However, it is well documented that police officers tend to exhibit unhealthy nutrition and physical activity habits. We suggest targeted educational interventions that help to instill lasting positive well-being strategies. Additionally, continuing education is needed throughout the officer's career to combat stress, burnout, and excess weight gain.



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